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Research Quarterly for Exercise and Sport

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SHAPE America 2019 Research Program

An ^F denotes Fellow status in the SHAPE America as of November 2018.

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Hans van der Mars, Arizona State University

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Heather Erwin, University of Kentucky
Zan Gao, University of Minnesota – Twin Cities
Jungyun Hwang, Northeastern University
Insook Kim, Kent State University

Jody Langdon, Georgia Southern University
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Todd Pennington, Brigham Young University
Wesley J. Wilson, University of Louisiana at Lafayette
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PREFACE

Credibility, Relevance, Impact...A Reminder About the Importance of Kinesiology Research as a Building Block for Professional Practice

Hans van der Mars 

Past Research Council Chair and 2019 Program Chair; Arizona State University

For many years, the Society of Health and Physical Educators (SHAPE America) and its Research Council (RC), have been the conduit for sharing the recent research evidence in the various kinesiology subdisciplines. This year is no different. The RC continues to ensure that SHAPE America members have access to the latest findings from the various subdisciplinary areas of study.

It is not an understatement that today research and evidence has been and continues to be under siege. This is especially worrisome not just for research conducted around hot-button issues such as climate change or balancing the need for ensuring the survival of endangered species with economic development. It also applies to research in the various kinesiology subdisciplines. Credible evidence is critical to helping improve professional practice by teachers, athletic trainers, teacher educators, sport coaches, fitness trainers, and sport psychologists, among others. All these professionals are (or should be) committed to improving the lives of the people they serve. Consider, for example, the progress made in how fundamentally different today's cardiac rehabilitation practices are compared to 25–30 years ago. In the late 1970s, patients recovering from bypass surgery were kept in bed for days on end. Today, the same patient is up and walking the day after that surgery. In large part, that is a consequence of advances in research. In another example, evidence is central to shaping efforts in developing policies that surround professional practice. These are but two examples where one can argue that research has had “impact.”

Each of us may define “impact” differently. Kinesiology researchers plan, execute, present, and publish their research. Their efforts bring personal satisfaction and benefits, and certainly prestige to the

university program within which they work. However, several colleagues remind us that each of us must keep asking questions, like: “To what end am I doing this research?,” “Who is really benefitting from my research?,” and “How can this research be translated in ways that it comes to life for professionals?” (e.g., Armour, 2010; Lawson, 2016; O’Sullivan, 2007).

At this year’s National Convention in Tampa, Florida, teachers, teacher educators, and researchers can gain insight on almost 250 research projects. These will be presented in three different formats, including oral presentations, poster presentations, and roundtable presentations. The research topics include Adapted Physical Education/Activity, Exercise Science, Motivation and Psychology, Motor Behavior and Measurement, Physical Activity and Health Promotion, Sociocultural and Social Justice, Sport and Coaching, and Teaching and Learning. Each session will have a specific theme or a set of subthemes.

I encourage you as well to attend the annual series of invited Scholar Lectures. This year’s lineup of lecturers includes the who’s who in scholarship:

- **Dr. Mary O’Sullivan** (Professor Emeritus, University of Limerick, Ireland) will present the McCloy Research Lecture, titled “Global Challenges for Physical Education Teacher Educators in the Modern University.”
- **Dr. Louis Harrison** (Professor, University of Texas-Austin) will deliver the Raymond A. Weiss Research Lecture. The title of his presentation is “The Politics of Physical Education, Activity and Sport.”
- **Dr. Duane Knutsen** (Professor, Texas State University) will present the SHAPE America

Scholar Lecture. Dr. Knutsen's presentation is titled "Challenging Assumptions and Evidence-Based Practice in Physical Activity."

- **Dr. Brad Cardinal** (Professor, Oregon State University) will deliver the *Research Quarterly for Exercise and Sport* Lecture, titled: "Scientific Support for Required Physical Activity Education Among College and University Students."

This year's program also includes four research symposia:

- (1) The Teaching and Learning area includes two symposia:
 - a. "International Perspectives on Common Content Knowledge and Specialized Content Knowledge"—Common Content Knowledge (CCK) and Specialized Content Knowledge (SCK) are now part of the SHAPE America (2019) standards for beginning teachers. Like the United States, other countries around the world are considering the role of CCK and SCK in their physical education teacher education programs. In this symposium, studies conducted in Belgium, China, Korea, Japan, and Turkey will be presented.
 - b. "A Study Comparing TeachLivE versus In-Person Skill Building for Educators Implementing Sexuality Education"—During this symposium, evidence will be presented contrasting various approaches to creating LGBTQ-inclusive classrooms as part of school-based sexuality education.
- (2) In the Physical Activity and Health Promotion area, one symposium is presented, titled "Championing CSPAPs: Studies of Targeted Program Implementers and Advocates." This symposium will foreground evidence on perceptions of members of the school community who play key roles in building CSPAPs.
- (3) The Motor Behavior and Measurement area is represented in a symposium titled "Fitness Literacy: Construct, Importance, and Assessment." In this symposium, presenters will use evidence of the gap in health literacy as the basis for examining the construct, importance, and assessment of fitness literacy and will present initial evidence.

Building a research program for a national convention requires the assistance of countless people. First, I would

like to thank the Research Program Chairs in these topical areas. They include Drs. Brian Dauenhauer and Heather Erwin (Physical Activity and Health Promotion), Dr. Zan Gao (Sociocultural and Social Justice), Dr. Jungyun Hwang (Exercise Science), Drs. Insook Kim and Todd Pennington (Teaching and Learning), Dr. Jody Langdon (Sport and Coaching), Dr. Sam Logan, (Motor Behavior and Measurement), Dr. Wesley J. Wilson (Adapted Physical Education/Activity), and Dr. Tao Zhang (Motivation and Psychology).

Second, the session proposal reviewers deserve a huge thank you for their timely and thorough work on assessing the quality of all proposals. They are listed individually in this Supplement issue on pages A-xxi–A-xxii.

Finally, I would be remiss if I did not also thank the excellent staff at SHAPE America for all their assistance, flexibility, and patience in building this year's research program. They include Keith Zobel, Chasity Burns, Kaylie Scanlon, Joe Halowich, Chris Hersl, Joey Martelli, and Tom Lawson. If you know and see them in Tampa, please thank them as well.

Whether you are a first-time attendee, a long-time member of SHAPE America, a K-12 professional, a researcher or teacher educator, I believe the research program in Tampa will provide you with ample opportunity to learn about recent developments in the "best available evidence" across the various areas of research. Contrary to the perception that SHAPE America is not interested in supporting and disseminating research in the various areas of kinesiology, you will find that the tradition of research within SHAPE America is very much alive! Come see for yourself.

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RESEARCH PROGRAM

2019 SHAPE America National Convention and Expo, Tampa, FL

An ^F denotes Fellow status in SHAPE America as of November 2018.

A ¹ denotes the presenter is also an abstract author.

Tuesday, April 9, 2019

8:00 a.m.–10:00 a.m

Symposium: Motor Behavior and Measurement

Fitness Literacy: Construct, Importance, and Assessment

Fitness literacy is the degree to which individuals are able to access and process basic fitness-related information and services and thereby participate in fitness-related decisions. Very recently, American Heart Association has stated that limited health literacy is highly prevalent in the United States and is strongly associated with patient morbidity, mortality, healthcare use, and costs. We, accordingly, examined the construct, importance and assessment of fitness literacy and will present at this symposium.

Fitness Literacy: What, Why, and How?

Weimo Zhu^{F1}, *University of Illinois at Urbana-Champaign*
(weimozhu@uiuc.edu)

“Aerobic Capacity” in Fitness Literacy: A Review

Zezhao Chen, *University of Illinois at Urbana-Champaign*
(zchen106@illinois.edu)

“Muscular Strength and Endurance” in Fitness Literacy: A Review

Xiong Qin, *University of Illinois at Urbana-Champaign*
(xiongq2@illinois.edu)

“Flexibility” in Fitness Literacy: A Review

Hai Yan, *University of Illinois at Urbana-Champaign*
(haiyan2@illinois.edu)

10:30 a.m.–12:30 p.m

Symposium: Physical Activity and Health Promotion

Championing CSPAPs: Studies of Targeted Program Implementers and Advocates

The comprehensive school physical activity program (CSPAP) model envisions an infrastructure for physical activity (PA) promotion that capitalizes on the leadership and support of an entire school community. The purpose of this proposed symposium is to showcase research focusing on members of the school community who are positioned to play key roles as implementers and advocates of CSPAPs. Seven studies are included in the symposium.

A Diffusion of Innovations Perspective of Physical Educators’ CSPAP Adoption

Collin A. Webster^{F1}, *Chanta Moore*, *Karie Lee Orendorff*, *Sally Taunton*, *University of South Carolina-Columbia*; *Diana Mindrila*, *University of West Georgia-Carrollton*; *Gregory Stewart*, *Methodist University-Fayetteville*
(collin.iconoclast@gmail.com)

Effect of School- and Staff-Level Capacity on Wellness Program Implementation

Joey A. Lee, *University of Colorado-Colorado Springs*; *Gregory J. Welk*^F, *Lorraine Lanningham Foster*, *Douglas Gentile*, *Spyridoula Vazou*, *Laura Liechty*, *Ann Torbert*, *Iowa State University-Ames*; *Senlin Chen*^F, *Louisiana State University-Baton Rouge*; *David Dzewaltowski*, *University of Nebraska Medical Center-Omaha*; *Richard Rosenkranz*, *Kansas State University-Manhattan*
(jalee3@iastate.edu)

A Before/After School PA Program: Program Implementers’ Experiences

Tan Leng Goh, Central Connecticut State University-New Britain
(tanlenggoh@gmail.com)

Online Communities of Practice to Support Preservice Classroom Teachers

Spyridoula Vazou, Iowa State University-Ames; Collin A. Webster^F, Chelsea Shortt, University of South Carolina-Columbia
(svazou@iastate.edu)

Data-Coaching Effects on Student Physical Activity in the Classroom

Russell L. Carson^F, Jaimie M. McMullen, Brian D. Dauenhauer, Lauren von Klingraeff, Katie Hodgins, Grace Turner, University of Northern Colorado-Greeley
(russell.carson@unco.edu)

Funders' and Gatekeepers' Views of CSPAP

Pamela Hodges Kulinna^F, Shannon C. Mulhearn, Janelle Marie Griffo, Hyeonho Yu, Arizona State University-Tempe
(pkulinna@asu.edu)

Stakeholders' Support of CSPAP Sustainability After a Three-Year PEP Grant

Catherine A. Egan, Grace Goc Karp, University of Idaho-Moscow; Catherine Berei, Southern Connecticut State University-New Haven
(eganca@uidaho.edu)

Wednesday, April 10, 2019

8:00 a.m.–9:15 a.m.

Sociocultural and Social Justice Roundtable Oral Presentations (RT1)

In this session, presenters will share the voices from across age groups, cultures, class, and inequities

The Effects of FitnessGram® on LGBTQ Students

Dillon Landi¹, Towson University-Towson and The University of Auckland-Auckland; Shrehan Lynch, University of Alabama-Tuscaloosa
(dlan739@aucklanduni.ac.nz)

Perception of Gambling among African American College Student Athletes

Robert Lindsey¹, Tyree Bailey, Johnson C. Smith University-Charlotte
(rlindsey@jcsu.edu)

Examining Pathways to Physically Active Occupational Choices.

Shannon C. Mulhearn¹, Pamela Hodges Kulinna^F, Arizona State University-Tempe; Charles Adams, Consultant
(shannon.mulhearn@asu.edu)

Utilizing Adapted Sport Documentary as Pedagogical Methodology: Exploring Student Experiences

Cathy McKay¹, Jenna McMahon, James Madison University-Harrisonburg; Justin A. Haegle^F, Old Dominion University-Norfolk
(mckayca@jmu.edu)

Active Science in Low-Income Public Schools: PE Teacher Perceived Barriers, Facilitators, and Benefits

Leah Poloskey¹, Joseph Richard, Kevin Eugene Finn, Kyle McInnis, April Bowling, Merrimack College-North Andover
(poloskeyl@merrimack.edu)

Dr. Robert "Whirlwind" Johnson: Point, Set, Match

E. Newton Jackson Jr.^{F1}, University of North Florida-Jacksonville
(newton.jackson@unf.edu)

John McLendon: More Than a Physical Educator and Coach

Demetrius William Pearson¹, University of Houston-Houston
(dpearson@uh.edu)

Sportsmanship as It Relates to Refugee Youth Sports Participants

Zachary Beldon¹, Karen H. Weiller-Abels^F, John Nauright, University of North Texas-Denton
(zachary.beldon@unt.edu)

Influence of Physical Fitness on Health-Related Absence in Preschool Children

Qiang Guo¹, Ningbo University-Ningbo; Xiaozan Wang, East China Normal University-Shanghai; Tanjian Liang, Central Washington University-Ellensburg; Guoyuan Huang^F, University of Southern Indiana-Evansville; Xufeng Gu, Ningbo Zhenhai Art Experiment Kindergarten-Ningbo
(matthewgq@gmail.com)

Trash Talk as a Social/Moral Construct of Sport

Sharon Kay Stoll^{F1}, Marcis Fennel, University of Idaho-Moscow; Jennifer M. Beller, St. Mary's Parish School-Moscow
(sstoll@uidaho.edu)

Implementation of an After-school Literacy and Physical Education Program for Urban Youth: Challenges and Lessons Learned

Risto Marttinen¹, George Mason University-Fairfax; Ray Noble Fredrick III, Columbia University-New York City; Sharon R. Phillips, Hofstra University-Hempstead; Debra Patterson, California State University-Fullerton; Kelly Johnston, Baylor University-Waco
(rmarttin@gmu.edu)

Rebound the Film and Perceptions of Disability: A Qualitative Study

Cathy McKay¹, Joshua R. Pate, Emeka Anaza,
James Madison University-Harrisonburg
(mckayca@jmu.edu)

Chinese College Students' Understanding of American
Fitness and Sport Culture

Samuel T. Twito¹, Latrice S. Sales, Daniel Thomas,
Brandon Jamar Crooms, Jeffrey Allan Colburn,
Xiaolu Liu, Rulan Shangguan, Xiaofen
D. Keating^F, The University of Texas at Austin-
Austin
(twito@utexas.edu)

It's Not About the Hair: Swimming Avoidance Among
Minority Youth

Laurel Whalen¹, Lauren C. Scott, Jaclyn Wilke,
Nathan McCaughtry^F, Wayne State University-
Detroit; Erin E. Centeio, Hayley McKown,
University of Hawaii at Manoa- Honolulu
(Laurel.whalen@wayne.edu)

Listening to the Voices of Black and Latina/o Youth in
Out-of-School Sites

Carrie Safron¹, Teachers College, Columbia
University-New York City
(cjs2172@tc.columbia.edu)

2:45 p.m.–4:15 p.m.

**Physical Activity and Health Promotion, Teaching
and Learning Poster Session 1(PS3)**

Attendees will learn about the latest findings specific to
individual CSPAP components and variables that influ-
ence their delivery. Attendees will be introduced to
PETE-related variables, such as PETE candidate evalua-
tion, PETE candidates' perceptions, their beliefs, and
the impact of field experience, among others.

High School Students' Perceptions of Using Desk
Cycles

Hyeonho Yu¹, Pamela Hodges Kulinna^F, Shannon
C. Mulhearn, Janelle Marie Griffio, Arizona State
University-Tempe; Candice E. McLeod, Livonia
Public Schools-Livonia
(hyeonhoYu@gmail.com)

Association Between Comprehensive School Physical
Activity Program Implementation and Principal
Support in Schools: Iowa FitnessGram® Initiative

Joey A. Lee¹, University of Colorado-Colorado
Springs; Gregory J. Welk^F, Iowa State University-
Ames
(jalee3@iastate.edu)

Comparing Children's Physical Activity During Three
Recess Conditions

Heather E. Erwin^{F1}, Cassandra Blase, Mark Abel,
Jody Clasey, University of Kentucky-Lexington;

Jason Crandall, Jinghang Cui, Western Kentucky
University-Bowling Green
(heather.erwin@uky.edu)

Increasing Schoolchildren's Physical Activity Through
Supervised and Organized Recess

Rosalie Coolkens¹, Jan Seghers, Peter Iserbyt,
Katholieke Universiteit Leuven-Leuven; Phillip
Ward^F, The Ohio State University-Columbus
(rosalie.coolkens@kuleuven.be)

A Scale Development Study for Physical Activity
Awareness Among College Students

Rulan Shangguan¹, Xiaofen D. Keating^F, The
University of Texas at Austin-Austin
(rulan@utexas.edu)

Effects of After-School Programs on Elementary
Students' Health-Related Fitness

Yingying Yu¹, Qin Liu, Sipei Chen, Yongjiong
Yang, Malai International Elementary School;
Xiuye Xie, Western Michigan University-
Kalamazoo
(164575271@qq.com)

Health-Related Fitness Knowledge and Physical
Activity Among Physical Educators

Stacy Imagbe¹, Ben D. Kern, David Bellar,
James M. Clemons, University of Louisiana at
Lafayette- Lafayette
(imagbestacy@gmail.com)

Perceptions of Barriers and Facilitators to School
Physical Activity Promotion

Paul B. Rukavina^{F1}, Patricia Gremillion-Burdge,
Kimberly Blair, Adelphi University-Garden City
(rukavina@adelphi.edu)

The Association of Students' Fitness, Attention, and
Academic Achievement

Xingying Li¹, Xiaozan Wang, East China Normal
University-Shanghai; Qiang Guo, Ningbo
University-Ningbo; Weiyun Chen^F, University of
Michigan-Ann Arbor; Phillip Ward^F, The Ohio
State University-Columbus
(18817557234@163.com)

Unfolding Young Children's Physical Activity
Participation During School Hours

Xiaoxia Zhang¹, Xiangli Gu^F, University of Texas
at Arlington-Arlington; Tao Zhang, Joonyoung
Lee, University of North Texas-Denton; Tsz Lun
(Alan) Chu, University of Wisconsin-Green Bay
(Xiaoxia.Zhang@mavs.uta.edu)

Examining Preservice Classroom Teachers' Perspectives
on The Comprehensive School Physical Activity
Program (CSPAP)

Joonyoung Lee¹, Karen H. Weiller-Abels^F, Tao
Zhang^F, University of North Texas-Denton; Tsz
Lun (Alan) Chu, University of Wisconsin-Green

Bay; Xiaoxia Zhang, University of Texas at Arlington-Arlington
(joonyoung.lee@unt.edu)

Three-Year Cardiorespiratory Fitness Growth and School-Level Correlates in High School

Xihe Zhu^{F1}, Justin A. Haegele^F, Summer Joy Davis, Old Dominion University-Norfolk; Jinting Shao, Zhejiang University of Finance & Economics-Hangzhou
(xihe_zhu@yahoo.com)

Can We Make a Difference With School-based Staff Wellness initiatives?

Gi-cheol Kim¹, Rachel Gurvitch^F, Marcel Benetti Lima, Casey Hollibaugh, Georgia State University-Atlanta
(gkim60@student.gsu.edu)

Associations Among Assessments of Body Composition With Cardiorespiratory Endurance in Adolescents

Peng Zhang¹, Christine E. Brett, East Stroudsburg University-East Stroudsburg; Ryan D. Burns, University of Utah-Salt Lake City; You Fu, University of Nevada-Reno
(pzhang@esu.edu)

Promoting Physical Activity and Health Among Children and Youth: Collaborative Role of University and Community Centers

Janet Musimbi Mmbaha¹, Sadguna Anasuri, Alabama Agricultural and Mechanical University-Huntsville
(janet.mmbaha@aamu.edu)

Longitudinal Association Between Youth Fitness and Academic Achievement

Yang Bai¹, University of Vermont-Burlington; Gregory J. Welk^F, Iowa State University-Ames
(Yang.Bai@med.uvm.edu)

Weight Gain and Fitness Loss of Children Over the Summer

Tim A. Brusseau Jr.^{F1}, Ryan D. Burns, University of Utah-Salt Lake City
(tim.brusseau@utah.edu)

7-Year Overweight and Obesity Trends in a Kentucky University Population

Laurie J. Stoughton Larkin¹, James M. Larkin, Michael Lane, M. Rachel Harrington, Eastern Kentucky University-Richmond; Emily E. Jones, WIC Department
(laurie.larkin@eku.edu)

Development and Validation of Common Content Knowledge Test of Soccer

Han J. Lee¹, Tae Koo Lee, Juhyun Kwak, Yonsei University-Seoul; Bomna Ko^F, East Carolina University-Greenville; Yao He, East China

Normal University-Shanghai; Kelsey Higginson, Phillip Ward^F, The Ohio State University-Columbus
(hlee@yonsei.ac.kr)

What Factors Influence Preservice Teachers in Possessing Fitness Orientations?

Craig Parkes¹, University of South Alabama-Mobile
(cap32@psu.edu)

Preservice PE Teachers' Early Field Experiences in Early Childhood Contexts

Emi Tsuda¹, James D. Wyant, West Virginia University-Morgantown; Takahiro Sato^F, Kent State University-Kent
(emi.tsuda@mail.wvu.edu)

Physical Education Professional Identity: Before Versus After Student Teaching

Jingwen Liu¹, Xiaofen D. Keating^F, Minjae Kim, Jessica Leah Leitner, The University of Texas at Austin-Austin
(jliu5@utexas.edu)

Perceptions of an Early Field Experience with the Homeschoolers

YuChun Chen¹, Louisiana Tech University-Ruston
(ychen@latech.edu)

Recruiting Middle and High School Students Into PETE Programs

Catherine A. Egan¹, Grace Goc Karp, Nicole Weinman, University of Idaho-Moscow; R. Daniel Michael, Longwood University-Farmville
(eganca@uidaho.edu)

Self-Regulated Learning Strategies and Achievement Goals Among Preservice PE Teachers

Jiling Liu¹, Ping Xiang^F, Ron E. McBride^F, Texas A&M University-College Station; Han Chen, Valdosta State University-Valdosta
(dalingliu@tamu.edu)

Exploring Experiences of Undergraduate Physical Education Students' Professional Development Engagement

Bomna Ko^{F1}, East Carolina University-Greenville; Collin Brewer, Sam D. Bundy Elementary-Farmville
(kob@ecu.edu)

edTPA Experience During Student Teaching: Barriers, Facilitators, and Future Support

Tan Leng Goh¹, Jan G. Bishop, Carol Ciotto, Central Connecticut State University-New Britain
(tanlenggoh@gmail.com)

The End of the Year Is a Little Bit Crazy

Jayne Jenkins^{F1}, Michelle Rene Clark, University of Wyoming-Laramie
(jjenkins@uwyo.edu)

Faculty Beliefs Concerning Preparation of PETE Students for Appropriate Practices

iana Davis¹, Texas A&M University-Corpus Christi
(liana.davis@tamucc.edu)

A Needs Assessment to Determine How PETE University Faculty Evaluate Preservice Teacher Competency

Tara C. Putnam¹, Ryan D. Burns, Tim A. Brusseau Jr.^F, Hester L. Henderson, Donna Ziegenfuss, University of Utah-Salt Lake City; Ron French, Texas Women's University-Denton
(t.marchinek.25@gmail.com)

Perceived MVPA of College-Age Students

Beth Birky¹, Sarah J. Wall, Eastern New Mexico University-Portales
(beth.birky@enmu.edu)

PETE Teacher Candidates' Preferred Teaching Styles

Carol Wilkinson¹, David Barney, William Christensen, Brigham Young University-Provo
(carol_wilkinson@byu.edu)

How to Use a Growing System to Teach Health Education

James Ball¹, Northeastern Illinois University-Chicago; Matthew R. Bice, Angela Hollman, Richard Meyer, Jourdan Ringenber, University of Nebraska-Kearny
(jamball36@hotmail.com)

Physical Education Cooperating Teachers' Participation and Beliefs as Teacher Educators

Hillary May Franks¹, Western Washington University-Bellingham; Jennifer Marie Krause, Mark A. Smith, University of Northern Colorado-Greeley
(hillary.franks@unco.edu)

A Descriptive Analysis of PETE Master's Programs in the United States, Their Alignment With SHAPE America's Advanced Teaching Standards, and the Advanced Standard's Relevance in Enhancing Existing Master's Curricula

Jamie Gilbert¹, William John Davis, Athens State University-Athens
(Jamie.Gilbert@athens.edu)

3:30 p.m.–5:30 p.m

Motivation and Psychology Oral Session (OS1)

In this session, motivational profiles in youth are explored across various sports, as well as the role of emotional experiences on motivation, and the relationship between physical and psychological well-being

Examining of Youth Volleyball Players' Motivations and Health-Related Behaviors

Steven Riveras¹, Zhenhao Howard Zeng, Chris Howard Gigliello, Jonathan Skelly, Brooklyn College of the City University of New York-Brooklyn
(riveras89@aol.com)

Examining of Youth Tennis Players' Motivations and Health-Related Behaviors

Zhenhao Howard Zeng¹, Andria Cuello, Steven Riveras, Brooklyn College of the City University of New York-Brooklyn; Lisheng Xie, Changsu International School of Jiangsu Province-Changsu, PRC
(hzenge@brooklyn.cuny.edu)

Body Fat, Weight Training, and Mental Wellness Among College Students

David Bellar¹, Ben D. Kern, University of Louisiana at Lafayette-Lafayette; Larry Judge^F, Ball State University-Muncie
(dmb1527@louisiana.edu)

Examining of Youth Basketball Players' Motivations and Health-Related Behaviors

Zhenhao Howard Zeng¹, Andria Cuello, Chris Howard Gigliello, Jonathan Skelly, Steven Riveras, Brooklyn College of the City University of New York-Brooklyn
(hzenge@brooklyn.cuny.edu)

Relationship Between Attitude and Discrete Emotions in Physical Education

Kelly L. Simonton Jr.¹, Alex C. Garn^F, Louisiana State University-Baton Rouge; Kevin J. Mercier, Adelphi University-Garden City
(ksimo36@lsu.edu)

Thursday, April 11, 2019

9:45 a.m.–11:15 a.m

Adapted Physical Education/Activity Poster Presentations

The posters in this area focus primarily on intervention-based research with persons with special needs, with an eye to fundamental motor skills, indicators of health, fitness, sport participation, and social development. The Exercise Science presentations will include the latest findings on various fitness and health metrics across age groups ranging from young children to older adults, and from home-schooled students to college environments, and care facilities. The primary focus in the Motivation and Psychology area is on indicators of

validity and reliability of selected psychological constructs, as well as related physical activity tracking measures

The Influence of a Developmental Kicking Intervention for Young Children With Autism

Seungyeon Park¹, Norfolk State University-Norfolk (sypark@nsu.edu)

Health and Fitness Indicators of Individuals With Intellectual Disabilities: Severity Differences

Xueping Wu¹, Lei Zhang, Dandan Wang, Shanghai University of Sport-Shanghai; Xihe Zhu^F, Justin A. Haegele^F, Old Dominion University-Norfolk (wuxueping@sus.edu.cn)

Perceptions of Universally Designed Adventure Education

Nick M. Faulds¹, California School for the Blind-Fremont; Matthew Maurer, Zack Beddoes, Garth T. Tymeson, University of Wisconsin-La Crosse (nicholasmfaulds@gmail.com)

School Sports Participation in Children with Disabilities

Jaehun Jung¹, Joonkoo Yun^F, Oregon State University-Corvallis; MooSong Kim, Northeastern State University-Tahlequah (jaehunjung11@gmail.com)

Impact of a Commercial Exergamer on Reducing Stereotypical Hand Movements of Children With Autism Spectrum Disorders

Mehmet Ata Ozturk¹, Middle East Technical University-Ankara; Yesim Gokgoz, Salih Pinar, Marmara University-Istanbul (mata@metu.edu.tr)

Motor Skills and Levels of Physical Activity in Children With Autism Spectrum Disorders in China

LiangShan Dong¹, Yanli Pang, Yu Xing, Yuan Xiang, Mingting Zhang, Central China Normal University-Wuhan; Jin Bo, Eastern Michigan University-Ypsilanti; Bo Shen^F, Wayne State University-Detroit (dlsty2014@126.com)

Attitudes of Students With Learning Disabilities Toward Participation in Physical Education: A Teachers' Perspective—Qualitative Examination

Ellie Abdi¹, EO School District/Montclair State University-Montclair (e.abdi@eastorange.k12.nj.us)

Validation of the Dynamic Strength of Knee Extension for Sarcopenics

Pedro P. Abdalla¹, Anderson dos Santos Carvalho, Ana Claudia Rossini Venturini, André Pereira dos Santos, Vitor Antonio Lopes, Dalmo R. L. Machado, School of Nursing of Ribeirão Preto of the University

of São Paulo- Ribeirão Preto; Jorge A. Mota, CIAFEL-FADEUP; Nilo C. Ramos, Coastal Carolina University-Conway

(pedroabdalla1@gmail.com)

Successful Interventions to Increase Functional Capacity in a Continuum of Care Facility

Mariane Fahlman^{F1}, Wayne State University-Detroit; Heather L. Hall, Elmhurst College-Elmhurst

(m.fahlman@wayne.edu)

Examination of Cardiovascular Endurance Performance of Homeschool Students: An Exploratory Study

John Liu¹, Michael Napolitano, Kathryn Putnam, Blake Heller, Zac Marlin, Adam Gigliotti, Ran Li, Dong Zhang, Springfield College-Springfield (zliu@springfieldcollege.edu)

Research on the Status Quo of Prepregnancy Physical Exercise and the Effect on Parents and Fetuses

Liqiang Zhang Sr.¹, Haihang Yang, Xizang Minzu University-Xianyang; Xiaozan Wang, Jun Chen, Ming Guo, Lifeng Hu, East China Normal University-Shanghai; Huina Gao, Shaanxi Institute of International Trade & Commerce-Xianyang (362684560@qq.com)

Body Fat and Weight Training Among College Students

Larry Judge^{F1}, Ball State University-Muncie; Ben D. Kern, David Bellar, University of Louisiana at Lafayette-Lafayette (lwjudge@bsu.edu)

The Effects of Specific Artistic Gymnastic Training Program on PETE Students' Balance, Strength and Flexibility Abilities

Ömer Özer¹, Recep Soslu, Karamanoğlu Mehmetbey University-Karaman (besyo4307@gmail.com)

Brisk Walking: Body Fat Percent and Absolute Versus Relative Intensity

Wenhao Liu^{F1}, Istvan Kovacs, Austin McClinton, Slippery Rock University-Slippery Rock (wenhao.liu@sru.edu)

Comparison of Three Energy Expenditure Measures: Correlations and Differences

Wenhao Liu^{F1}, Istvan Kovacs, Austin McClinton, Slippery Rock University-Slippery Rock (wenhao.liu@sru.edu)

Effects of RPE Training and Fitness on Adolescents Estimating Intensity

Jan G. Bishop¹, Central Connecticut State University-New Britain; Charles B. Corbin^F, James Bell, Arizona State University-Tempe (bishopj@ccsu.edu)

The Use of GPS to Evaluate the Effect of Protein and Carbohydrate Supplementation on Collegiate Soccer Performance

*Matthew Buns¹, Joshua Bradley, Concordia University-St. Paul
(buns@csp.edu)*

Interrelationships Among Various Test Performances for Upper Extremity Strength

*Istvan Kovacs¹, Austin McClinton, Slippery Rock University-Slipper Rock
(istvan.kovacs@sru.edu)*

Psychometric Properties of the BREQ-3 in College PA Classes

*Jihye Lee¹, Ping Xiang^F, Ron McBride^F, Jiling Liu, Nasnoor Nasiruddin, Texas A&M University-College Station; HyoKyung Lee, Dongseo University-Busan
(vkstm49@tamu.edu)*

Effects of PE-Specific Inservice on Self-Efficacy Toward Teaching Elementary PE

*Keven Prusak¹, David Barney, Brigham Young University-Provo
(keven_prusak@byu.edu)*

Use Deep Learning to Classify Outdoor Terrain Categories During Walking Task

*Boyi Hu¹, University of Florida-Gainesville; Sarah Coppola, Harvard University-Cambridge; Calvin Liang, Tufts University-Medford; Jack Dennerlein, Northeastern University-Boston
(bohu@mix.wvu.edu)*

Effect of Adolescents Girls' Summer Camp on Energy Balance

*Sami Yli-Piipari^{F1}, Mika Manninen, Yongju Hwang, Megha Vishwanathan, Ellen Evans, University of Georgia-Athens
(syp@uga.edu)*

Evaluation of the Psychometric Properties of the Test of Gross Motor Development-Third Edition (TGMD-3) in Chinese Children

*Xiaozan Wang¹, Xingying Li, Xiaojuan Tao, East China Normal University-Shanghai; Weiyun Chen^F, Dale A. Ulrich^F, University of Michigan-Ann Arbor; Liqiang Zhang Sr., Xizang Minzu University-Xianyang
(xiaozanwang@163.com)*

Contributions of Self-Efficacy in a Summer Sports Camp: Boys' Perspectives

*Ping Xiang^{F1}, Jiling Liu, Ron E. McBride^F, Texas A&M University-College Station; Xiaoxia Su, Kaohsiung Christian Hospital-Taiwan
(ping-xiang@tamu.edu)*

Reconstruction of ERS for High School Students Utilizing Rasch Model: Known Group Difference Validity as Physical Education Classes Participation

Sae-Hyung Kim¹, Chungbuk National University-Cheongju; Dongwook Cho, Alcorn State University-Alcorn

(cbnu61@nate.com)

Gross Motor and Cognitive Development of Preschool-Aged Boys and Girls

Emily Gilbert¹, Matthew Patey, Jenna Fisher, Sally Taunton, Adam Pennell, Alexandra Stribing, Ali Brian^F, University of South Carolina-Columbia; Danielle Danese Wadsworth, Auburn University-Auburn

(Gilbere@email.sc.edu)

Validation and Invariance of Two Shortened Physical Activity Enjoyment Scales

*Han Chen¹, Valdosta State University-Valdosta; Jiling Liu, Texas A&M University-College Station; Haichun Sun^F, University of South Florida-Tampa
(hanchen@valdosta.edu)*

Motives of Taekwondo Students' Parents for Taekwondo Training and Their Satisfaction With Taekwondo Training

*Jun-Hyung Baek¹, University of Maine-Orono; Boung Jin Kang, Elizabeth City State University-Elizabeth City; Chan-Woong Park, University of North Dakota-Grand Forks; Adam Keath, Anderson University-Anderson; Ha-Young Kim, Gacheon University-Seongnam; Jong-Hoon Yu, Glenville State College-Glenville
(junhyung.baek@maine.edu)*

An Evaluation on Physical Education Teachers' Perspectives of Female Students Based on Self-Determination Theory

*Kimberly Maljak¹, Kyle Burza, Cori Hilton, Kathryn Ciolli, Christopher Albrecht, Northeastern Illinois University-Chicago
(k-maljak@neiu.edu)*

Relationship Between Fitbits and Pedometers in Monitoring Elementary Students' Activity

*Shelia Lucyle Jackson¹, Kaitlin Burgess, Arkansas Tech University-Russellville; Cathryn Bass, Center Valley Elementary School-Russellville
(ce44498@yahoo.com)*

12:45 p.m.– 2:15 p.m

Physical Activity and Health Promotion, Teaching and Learning Poster Session 2 (PS4)

Researchers will present findings on for example health behavior knowledge, engagement in health risk behaviors and the integration of school wellness, infusing physical activity in classrooms. Within the context of and ever-increasing presence of technology in schools

and higher education, attendees will learn about strategies of technology infusion. Examples include computer-assisted sport instruction, the use of virtual reality, and the use of on-line resources

Associations Between Selected Dietary Behaviors and Physical Activity in Adolescents

You Fu¹, Kristen Clements-Nolle, Wei Yang, University of Nevada-Reno; Ryan D. Burns, University of Utah-Salt Lake City (youf@unr.edu)

Just Google It: An Observational Study of Youth Searching for Online Health Information

Susan P. Harvey¹, University of Kansas-Lawrence (suharvey@ku.edu)

Building Linkages to Appropriate Healthcare via a Health Literacy Curriculum

Kimberly Maljak¹, Jennifer Banas, Deborah Christiansen, Northeastern Illinois University-Chicago; Sarah Gershon, Waukegan High School-Waukegan (k-maljak@neiu.edu)

Fundamental Motor Skills and Physical Activity Level of Elementary Schoolchildren

Dalmo R. L. Machado¹, Anderson dos Santos Carvalho, School of Nursing of Ribeirão Preto of the University of São Paulo-Ribeirão Preto; Vitor Antonio Lopes, University of Sao Paulo-Sao Paulo; Justin Guilkey, Nilo C. Ramos, Coastal Carolina University-Conway (dalmo@usp.br)

Effects of a Concept-Based Physical Education on Out-of-School Physical Activity

Yubing Wang¹, Ang Chen^F, University of North Carolina at Greensboro-Greensboro (y_wang27@uncg.edu)

Relationship of Physical Activity and Sleep With Depression in College Students

Weiyun Chen^{F1}, Ana Cahuas, Zhanjia Zhang, University of Michigan-Ann Arbor; Zhonghui He, Peking University-Beijing (chenwy@umich.edu)

An Exploration of Online Resources That Physical Education Teachers Utilize

James D. Wyant¹, Emi Tsuda, West Virginia University-Morgantown (jwyant2@mail.wvu.edu)

Strategies to Prevent Distracted Driving: Videos, Simulation, Health Belief Model

Theresa M. Enyeart Smith¹, Maria T. Wessel, James Madison University-Harrisonburg (enyeartm@jmu.edu)

Physically Active in the Classroom—To Be or Not to Be?

Shannon C. Mulhearn¹, Pamela Hodges Kulinna^F, Arizona State University-Tempe; Michael D. Lehrer, Aaron R. Mangold, Mayo Clinic Arizona-Scottsdale; Jordan Montoya, Mayo Medical School-Rochester (shannon.mulhearn@asu.edu)

Enriching Global Perspectives via Blogging

Bomna Ko^{F1}, Boni Boswell, East Carolina University-Greenville; Seok Yoon, Chowan University-Murfreesboro (kob@ecu.edu)

Texting and Driving Among College Students: What's Happening After Laws and Bans

Judy R. Sandlin¹, Michael Sandlin, Texas A&M University-College Station; Rosanne Keathley, Sam Houston State University-Huntsville (jrsandlin@tamu.edu)

Acquired, Required, Desired Technology Use Among K-12 HPE Professionals

Kimberly Sue Hurley¹, Tammy Burt, University of Northern Iowa-Cedar Falls; Andrew Eberline, Ball State University-Muncie (kimberly.hurley@uni.edu)

Impact of a Technology-Based PE Learning Task on Ninth Grade Students' Situational Interest

Denis Pasco¹, University of Bourgogne Franche-Comte-Besançon; Cedric Roure, Catholic University of Louvain-Ottignies-Louvain-la-Neuve (denis.pasco@univ-fcomte.fr)

The Love of Aerial Dance: Art, Movement, Community

Maria Kosma^{F1}, Nick Erickson, Louisiana State University-Baton Rouge (mkosma@lsu.edu)

Body, Mind, and Emotion in Aerial Dance

Maria Kosma^{F1}, Nick Erickson, Louisiana State University-Baton Rouge (mkosma@lsu.edu)

The Investigation of Nutritional Change And Physical Activity Levels of Individuals Making Fitness Recreational Purposes

Ömer Özer¹, Recep Soslu, Karamanoğlu Mehmetbey University-Karaman; Aydın Şentürk, Dumlupınar University-Kütahya (besyo4307@gmail.com)

The Exploration of Technology Courses in Physical Education Teacher Education

Jennifer Marie Krause¹, Dannon George Cox, Collin Brooks University of Northern Colorado-Greeley; Kason O'Neil, East Tennessee State University-Johnson City (jennifer.krause@unco.edu)

Impacts of Heart Rate Monitors in University Physical Activity Courses

Staci Rae Drewson¹, Jaime L. Myers, Paul Haines, Steven Green, Monmouth University-West Long Branch; Michael Gary Hodges, William Paterson University-Wayne
(sdrewson@monmouth.edu)

Personal, Family, and Community Habits Through an Early Childhood Lens

Kowsar Hijazi¹, Moriah Thomason, Jeanne Barcelona, Wayne State University-Detroit; Marion van den Heuvel, Tilburg University-Tilburg
(kowsar.hijazi@wayne.edu)

A Systematic Review of Online Instruction in K-12 Physical Education

Chad M. Killian¹, Christopher J. Kinder, Amy Mays Woods^F, University of Illinois at Urbana-Champaign-Champaign
(ckillia2@illinois.edu)

The Effect of Computer Assisted Instruction on Teaching Skills in Volleyball

Mufide Cotuk¹, Beyzanur Bahadir, Ayse Oya Erkut, University of Marmara-Istanbul
(mcotuk@marmara.edu.tr)

Three-Day Food Analysis of Young Adults as Part of Health Education

Jihoon Kim¹, Darla M. Castelli^F, The University of Texas at Austin-Austin
(jihoonkim@utexas.edu)

A Systematic Review of Active Video Games in Physical Education

Rebecca Wylie¹, Haichun Sun^F, University of South Florida-Tampa
(rwylie1@mail.usf.edu)

Wellness Behaviors of First-Year College Students Over an 11-Year Period

David Harackiewicz¹, Carol Ciotto, Tan Leng Goh Central Connecticut State University-New Britain
(Harackiewicz@ccsu.edu)

Authentic Physical Activity and Exercise in the Online PE Class

Leslie M. Williams¹, The University of Tampa-Tampa
(lmwilliams@ut.edu)

Use of Virtual Reality on Teaching Anatomical Concepts for Students Studying an Upper Division Motor Movement for Special Populations Class

Daniel Joseph Burt¹, Michelle Duran, Aleyda Cantu, Texas A&M University-Kingsville
(daniel.burt@tamuk.edu)

Youth's Knowledge About Marijuana and the Law

Diana Avans¹, Rikki Williams, Trisha Figueroa, Vanguard University-Costa Mesa
(davans@vanguard.edu)

Alcohol Consumption and Risky Behaviors Among College Students: Current Trends

Michael Sandlin¹, Judy R. Sandlin, Texas A&M University-College Station; Rosanne Keathley, Sam Houston State University-Huntsville
(msandlin@tamu.edu)

1:45 p.m.–3:45 p.m

Symposium: Teaching and Learning

International Perspectives on Common Content Knowledge and Specialized Content Knowledge

It is now a decade since the terms common content knowledge (CCK) and specialized content knowledge (SCK) entered the physical education literature (Ward, 2009). Both domains are part of the SHAPE America (2017) standards for beginning teachers. Like the United States, other countries around the world are considering the role of CCK and SCK in their physical education teacher education programs. In this symposium studies conducted Belgium, China, Korea, Japan, and Turkey will be presented.

Content Knowledge Derived From Physical Education Teacher Education Programs

Phillip Ward^{F1}, The Ohio State University-Columbus; Fatih Dervent, Marmara University-Istanbul; Erhan Devrilmez, Mustafa Levent Ince, Middle East Technical University-Ankara
(fatih.dervent@marmara.edu.tr)

A Cross-Sectional Study of the Changes in Content Knowledge From Freshmen to Juniors in China

Xiaozan Wang, Yaohui He, Longsong Kong, East China Normal University-Shanghai; Phillip Ward^F, The Ohio State University-Columbus
(xiaozanwang@163.com)

Task Adaptations as a Function of Content Knowledge

Peter Iserbyt, Rosalie Coolkens, Katholieke Universiteit Leuven-Leuven; Joren Looockx, Kian Vanluyten, University of Leuven-Leuven
(peter.iserbyt@faber.kuleuven.be)

Korean Teacher Candidates' Specialized Content Knowledge for Teaching Soccer

Han J. Lee, Byung-Gu Lee, Juhyun Kwak, Kyung-Hwa Lee, Yonsei University-Seoul; Bomna Ko^F, East Carolina University-Greenville; Insook Kim^F, Kent State University-Kent; Phillip Ward^F, Kyuil Cho, Mijoo Kim, The Ohio State University-Columbus
(ikim2@kent.edu)

Japanese Physical Education Majors' Specialized Content Knowledge

Emi Tsuda, West Virginia University-Morgantown ; Phillip Ward^F, The Ohio State University-Columbus; Yuji Ohnishi, BIwako Seikei Sport College-Otsu; Satoshi Yoshino, Ibaraki University-Mito
(emi.tsuda@mail.wvu.edu)

1:45 p.m.–3:45 p.m

Sport and Coaching Oral Session (OS3)

In this session, the presenters will share their findings around perceptions of various qualities of sport coaches, including their competencies, leadership style, and the teaching of sportsmanship
Perception of Coaching Competency Among African American College Student-Athletes

Robert Lindsey¹, Christian Kirchman, Johnson C. Smith University-Charlotte
(rlindsey@jcsu.edu)

Perception of Coaching Leadership Among African American College Student-Athletes

Robert Lindsey¹, Jamie Syrkett, Johnson C. Smith University-Charlotte
(rlindsey@jcsu.edu)

Parents' Perceptions of Coaching Sportsmanship

Zachary Beldon¹, Joseph Walker, University of North Texas-Denton
(zachary.beldon@unt.edu)

The Relationship Between Coaching Behaviors, Relation-Inferred Self-Efficacy (RISE), and Self-Efficacy in High School Male Sports

Brock C. McMullen¹, University of Wisconsin-La Crosse
(mcmullen.brock@gmail.com)

Athlete/Parent Perceptions of Values Obtained Through Participation in Youth Sport

Jeremy Micheal Elliott¹, Ryan T. Conners, University of Alabama in Huntsville-Huntsville
(jme0017@uah.edu)

4:15 p.m.–5:30 p.m

Physical Activity and Health Promotion Oral Session (OS5)

Attendees will learn about studies that focus on perceptions and other cognitive variables as related to physical activity, fatness, eating behavior, and anxiety.

School Wellness Integration Targeting Child Health (SWITCH): A Model for Training and Dissemination

Gabriella Maria Mcloughlin¹, Lorraine Lanningham Foster, Douglas Gentile, Spyridoula Vazou, Maren Wolff, Laura Liechty, Ann Torbert, Gregory J. Welk^F, Iowa State University-Ames; Joseph Lee, Colorado State University-Colorado Springs; Senlin Chen^F, Louisiana State University-Baton Rouge; David Dzewaltowski, University of Nebraska Medical Center-Omaha; Richard Rosenkranz, Kansas State University-Manhattan
(gmcloug2@illinois.edu)

Using Critical Incident Technique to Investigate Anxiety in Physical Activity Settings Among College Students

Timothy Michael Dasinger¹, University of Tennessee-Martin; Melinda A. Solmon^F, Louisiana State University-Baton Rouge
(tdasinge@utm.edu)

Examination of Parents' Perceptions of Their Preschool Child's Physical Activity and Eating Behavior Compared to Actual Behaviors

Katherine Q. Scott-Andrews¹, Carissa Wengrovius, Leah E. Robinson^F, University of Michigan-Ann Arbor
(katieqa@gmail.com)

Self-Identified Fatness: Retrospective Embodied Experiences in Physical Education

Summer Joy Davis¹, Xihe Zhu^F, Justin A. Haegele^F, Old Dominion University-Norfolk
(sdavi003@odu.edu)

Classroom Teacher Efficacy Toward Providing Physical Activity Opportunities in Schools

Erin E. Centeio¹, Hayley McKown, University of Hawaii at Manoa-Honolulu; E. Whitney G. Moore, Jeanne Barcelona, Wayne State University-Detroit; Heather E. Erwin^F, University of Kentucky-Lexington
(erin.centeio@gmail.com)

4:15 p.m.–5:30 p.m.

Teaching and Learning Roundtable Oral Presentations (RT2)

Attendees to this session will be presented with new research findings the use of Sport Education and other curriculum and instructional content areas (sex education, skating).

Adventure Education, Social Skills, and Students With Autistic Spectrum Disorder

Jack Neylon¹, Melissa Parker^F, Daniel Tindall, University of Limerick-Limerick

(jack97neylon@gmail.com)

The Ontological Foundations of Constructivist Realism:
PE Curriculum Construction

Javier Carrasco¹, El Paso ISD-El Paso;
Darla M. Castelli^F, The University of Texas at
Austin-Austin

(carrasco.javier335@gmail.com)

Effect of Goal-Oriented Contingencies on In-Class
Physical Activity

Annie Malecki¹, Steven Smart, Zachary Wahl-
Alexander, Northern Illinois University-Chicago
(Z1809464@students.niu.edu)

Influence of Curricular Negotiation on Minority
Students and Their Teacher

Matthew D. Curtner-Smith^{F1}, University of
Alabama-Tuscaloosa; Tasha Guadalupe,
Gwinnett County Public Schools-Suwanee
(mdsmith@ua.edu)

Negotiation Within the Teaching Personal and Social
Responsibility Model

Kelsey McEntyre¹, Tarleton State University-
Stephenville; Matthew D. Curtner-Smith^F,
University of Alabama-Tuscaloosa; K. Andrew
Richards^F, University of Illinois at Urbana-
Champaign
(kemcentyre@crimson.ua.edu)

Retrospective Examination of Attitudes Toward
Dodgeball in Physical Education

David Barney¹, Keven Prusak, Brigham Young
University-Provo
(david_barney@byu.edu)

Parent Perceptions of a Homeschool Physical
Education Program

Steven W. Groccia¹, Michelle E. Moosbrugger,
Kevin Marc Mirando, Springfield College-
Springfield
(grosh.sw135@gmail.com)

Teachers' Perceptions of a Sport Education App

Hyeonho Yu¹, Hans Van Der Mars^F, Pamela
Hodges Kulinna^F, Shannon C. Mulhearn, Janelle
Marie Griffo, Arizona State University-Tempe
(hyeonhoyu@gmail.com)

Impact of Ability Grouping on Activity Levels During
Game Play in Physical Education

Peter A. Hastie^{F1}, Kurt Ward, Hairui Liu, Auburn
University-Auburn
(hastipe@auburn.edu)

Adapting: A Study of Implementing Adaptive
Personalized Instruction, Innovation, and Technology
From an Instructor's Perspective

Todd E. Layne¹, Niki E Bray, Carol C. Irwin,
University of Memphis-Memphis; Dustin Duren,
Collierville Schools-Collierville

(telayne@memphis.edu)

Effect of a Skating Unit on Fitness in Fifth Graders

Eric J. Lange¹, University of Arkansas-Fayetteville
and Tulsa Community College-Tulsa; Dean
Gorman, Cathy D. Lirgg^F, University of Arkansas;
Maryann Mitts, Missouri Southern State
University-Joplin

(glass9992000@yahoo.com)

Sexuality Education: Out of the Closet and Into the
Classroom

Dillon Landi¹, Towson University-Towson and The
University of Auckland-Auckland
(dlan739@aucklanduni.ac.nz)

Fading Supervision: A Tiered Approach to Learning to
Teach Sport Education

Zachary Wahl-Alexander¹, Jenn M. Jacobs,
Northern Illinois University-Chicago; K. Andrew
Richards^F, University of Illinois at Urbana-
Champaign

(zwahlalexander@niu.edu)

Physical Education in Brazil: Transitioning From
Guidelines to Compulsory Curriculum

Carla Vidoni^{F1}, University of Louisville-Louisville;
Osvaldo Luiz Ferraz, University of Sao Paulo-Sao
Paulo

(carla.vidoni@louisville.edu)

Implementing Features of Sport Education: Student
Attitudes Toward Team Learning

Claire Mowling¹, Jenna LaChenaye, University of
Alabama at Birmingham-Birmingham
(cmowling@uab.edu)

Tracing Socialization in Sport Education

Oleg A. Sinelnikov^{F1}, Deborah S. Baxter, Victoria
N. Ivy, Leah May, Parker Montgomery, The
University of Alabama-Tuscaloosa
(osinelnikov@bamaed.ua.edu)

4:15 p.m.–6:15 p.m

SHAPE America Research Grant Presentation

This session will present the findings of the SHAPE
America Research Grant recipients.

Effects of Coach-Created Motivational Climates on
Athletes' Physical Activity Behavior

Tsz Lun (Alan) Chu¹, University of Wisconsin-
Green Bay; Xiaoxia Zhang, University of Texas at
Arlington-Arlington; Joonyoung Lee, Tao Zhang^F,
University of North Texas-Denton

(chua@uwgb.edu)

How I Move: Girls' Movement Experiences in their
Daily Lives

Luciana C. Braga¹, California State University-Chico
(lcarvalhalbraga@csuchico.edu)

Cultivating Preservice Physical Educators as Inclusion Specialists via Situated Learning

Jihoun An¹, East Carolina University-Greenville
(anj14@ecu.edu)

A Movement Based Social Skills Program for Children With Autism

Jihyun Lee¹, Seung Ho Chang, San Jose State University-San Jose
(jihyun.lee01@sjsu.edu)

Perceived Motor Competence Mediates Motor Competence-Physical Activity Pathway for Children With Visual Impairments

Ali Brian^{F1}, Sally Taunton, Adam Pennell, Jacqueline Megan Irwin, University of South Carolina-Columbia; An De Meester, Ghent University-Ghent; Pamela Haibach, Lauren Lieberman, College at Brockport-New York
(brianali@mailbox.sc.edu)

Children's Physical Activity and Beliefs in App-Based Physical Education Classes

Jung Eun Lee¹, University of Minnesota-Duluth; Zan Gao^F, University of Minnesota-Twin Cities-Minneapolis
(junelee@d.umn.edu)

Friday, April 12, 2019

7:30 a.m.–9:30 a.m

Symposium: Teaching and Learning

A Study Comparing TeachLivE versus In-Person Skill Building for Educators Implementing Sexuality Education

This study compared skill mastery through traditional in-person workshop versus TeachLivE, a virtual classroom with student avatars. We compared the skills involved with answering difficult sexuality health questions and creating LGBTQ inclusive classrooms. Educators watched a short video and then role-played with colleagues or rehearsed skills in the TeachLivE virtual classroom with student avatars. Promising results have shown the efficacy of the approach and the demand for scaling across sexual health topics for schools nationwide.

A Study Comparing TeachLivE versus In-Person Skill Building for Educators Implementing Sexuality Education I

Jillian Schreffler, University of Central Florida-Orlando

(jschreffler@Knights.ucf.edu)

A Study Comparing TeachLivE versus In-Person Skill Building for Educators Implementing Sexuality Education II

Nora Gelperin¹, Advocates for Youth-Washington D.C.
(nora@advocatesforyouth.org)

10:45 a.m.–12:15 p.m

Sociocultural and Social Justice, Sport and Coaching, and Teaching and Learning Poster Session (PS2)

In these presentations, examples of (perceived) inequities are highlighted, along with potential consequences. In addition, researchers will present the latest findings on factors that influence actions, attitudes, and perceptions of significant players in and around teaching in K-12 and higher education. Similarly, these variables are highlighted in the context of sport coaching.

Enhancing Diversity in Swimming: Focus Group Ideas Toward Solutions

Carol C. Irwin¹, Todd E. Layne, Richard L. Irwin, University of Memphis-Memphis; Jennifer R. Pharr, University of Nevada-Las Vegas
(cirwin@memphis.edu)

Exploring Gender and Culture Barriers to Female Student Physical Activity

Mijoo Kim¹, The Ohio State University-Columbus
(kim.6782@buckeyemail.osu.edu)

Remove Social Media: Enhancing Interpersonal Connections Through Experiential Experiences

Carol A. Smith¹, Elon University-Elon
(csmith@elon.edu)

Korean Student-Athletes: Are There Social Justice Issues?

Mijoo Kim¹, The Ohio State University-Columbus
(kim.6782@buckeyemail.osu.edu)

Exploration of the Health and Physical Activity General Education Requirements of HBCUs and TCUs

Desmond Woodruff Delk¹, Langston University-Langston
(ddelk@langston.edu)

Demographic and Cultural Influences on Perceived Swimming Ability in Urban Youth

Hayley McKown¹, University of Hawaii at Manoa-Honolulu; Erin E. Centeio, Laurel Whalen, Lauren C. Scott, Nathan McCaughtry^F, Wayne State University-Detroit
(hayleybeth17@gmail.com)

Crucial Hours: Pedagogy Training for Graduate Teaching Assistants

Ray Schweighardt¹, University of Virginia's College at Wise-Wise; Catherine D. Ennis^F, Ang Chen^F, University of North Carolina-Greensboro (rs5fw@uvawise.edu)

An Examination of Emotions Experienced by First-Year Graduate Teaching Assistants

Brenna Cosgrove¹, Jessica M. Richards, Nikki Hollett, Sheri J. Brock, Auburn University-Auburn (bmc0053@auburn.edu)

Role Responsibilities of PETE Professors in Master and Doctoral Institutions

Thomas Trendowski¹, University of North Carolina at Pembroke-Pembroke; Amy Mays Woods^F, University of Illinois at Urbana-Champaign (thomas.trendowski@uncp.edu)

Homeschool Parents' Perceptions of Physical Education and Physical Activity

Ben Schwamberger¹, Minnesota State University-Mankato; Zachary Wahl-Alexander, James Ressler, Northern Illinois University-Chicago (ben.schwamberger@mnsu.edu)

Learning Science-Based Healthy Lifestyles Knowledge in Physical Education

Anqi Deng¹, Yubing Wang, Yangyang Deng, Ang Chen^F, University of North Carolina at Greensboro-Greensboro; Tan Zhang, Winston-Salem State University-Winston-Salem; Ray Schweighardt, University of Virginia's College at Wise-Wise (a_deng@uncg.edu)

Learning to Teach Physical Education for Health: Breaking the Curriculum Safety Zone

Qiao Zhu¹, Hejun Shen, Nanjing Institute of Physical Education-Nanjing; Ang Chen^F, University of North Carolina at Greensboro-Greensboro (26435407@qq.com)

Physical Education Preservice Teachers' Perceptions on Assessment

Kason O'Neil¹, East Tennessee State University-Johnson City; K. Andrew Richards^F, University of Illinois at Urbana-Champaign; Jenna Starck, The University of Alabama-Tuscaloosa (kmoneil25@gmail.com)

A Two-Year Evaluation of PE/PA Professional Development Workshops

Brian D. Dauenhauer¹, Jennifer Marie Krause, Sara Walker, Michael Capps, Jaimie M. McMullen, Russell L. Carson^F, University of Northern Colorado-Greeley (brian.dauenhauer@unco.edu)

Factors influencing Expert Physical Education Teachers' Professional Development in Shanghai

Zhihua Yin¹, Falin Deng, Xiaozan Wang, East China Normal University-Shanghai; Mingzhu Sun, Shanghai University of Engineering Science-Shanghai (408318275@qq.com)

Using Visual Methodologies to Explore Student and Teacher Voice

Kevin Patton^{F1}, California State University-Chico; Melissa Parker^F, University of Limerick-Limerick; Déirdre Ní Chróinín, Mary Immaculate College-Limerick; Xiaoping Fan, University of Northern Colorado-Greeley (kpatton@csuchico.edu)

The Influence of a Research Master's Degree on Two Young Professionals' Careers

Karen Lux Gaudreault¹, University of New Mexico-Albuquerque; K. Andrew Richards^F, University of Illinois at Urbana-Champaign; Kelly L. Simonton Jr., Louisiana State University-Baton Rouge; Angela Nicole Simonton, East Baton Rouge School District-Baton Rouge (kmarielux@gmail.com)

Factors of Adapted Physical Activity Practicum Affecting College Students' Attitudes

Layne Case¹, Jaehun Jung, Chun Wai Leung, Bridgette M. Schram, Joonkoo Yun^F, Oregon State University-Corvallis (casela@oregonstate.edu)

Conceptualizing the Meaning of Disability and Inclusion Through Community Service Learning

Jihoun An¹, East Carolina University-Greenville (anj14@ecu.edu)

Understanding the Stressors Experienced by New York City Physical Education Teachers

K. Andrew Richards^{F1}, University of Illinois at Urbana-Champaign; Karen Lux Gaudreault, Illinois State University-Normal; Victoria N. Ivy, The University of Alabama-Tuscaloosa; Michael A. Hemphill, The University of North Carolina at Greensboro-Greensboro; Victor Ramsey, New York City Dept of Education-New York City (karichar@illinois.edu)

Urban Middle School Physical Education Teachers' Attitudes Toward Fitness Testing and Students' Performance on Fitness Tests

Ray Noble Fredrick III¹, Stephen Silverman^F, Teachers College Columbia University-New York City (rnf2108@tc.columbia.edu)

Big Brother: The Reality of Hiring Practices in the 21st Century

Cory Breithoff, *University High School-Morgantown*; Adam Keath, *Anderson University-Anderson*; Eloise M. Elliott^F, Sean M. Bulger, *West Virginia University-Morgantown*; Tom Watterson, *Western Carolina University-Cullowhee*
(cbreitho@mix.wvu.edu)

Teacher Perspectives on the Tennessee Student Growth Measures in Physical Education

Todd E. Layne¹, Carol C. Irwin, *University of Memphis-Memphis*
(telayne@memphis.edu)

Reexamining Motivational Differences With SDT Utilizing Educational and Economic Variables for Spectators of Auto-Racing Sport

Li Chen^{F1}, Xuanhua Luo, *Delaware State University-Dover*; Xiaofen D. Keating^F, *The University of Texas at Austin-Austin*; Yanling Li, *Hunan Normal University, College of Physical Education-Changsha*
(lchen@desu.edu)

The World Best Performance Trends in Track and Field Events From 1900 to 2017: A Nonlinear Regression Analysis

Ran Wei¹, Yuanlong Liu^F, *Western Michigan University-Kalamazoo*
(ran.wei@wmich.edu)

Afterschool Sport Participation and Academic Achievement of African American High School Students

Dongwook Cho¹, *Alcorn State University-Alcorn*; Jongwon Lee, *Florida State University-Tallahassee*
(dcho@alcorn.edu)

The Role of the Coach in Talent Development of High School Athletes

Melissa A. Chase^{F1}, *Miami University-Oxford*
(chasema@miamioh.edu)

Sport Specialization: A Survey of Collegiate and Professional Athletes

Sharon P. Misasi¹, Gary Morin, Daniel Reid Swartz, *Southern Connecticut State University-New Haven*
(misis1@southernct.edu)

Breaking Down Intercollegiate Athletic Reform: A Scouting Report

Keith Christy¹, *Adrian College*; A. J. Grube, Kenneth J. Sanney, *Western Carolina University-Cullowhee*
(keithchristy89@gmail.com)

Determining Deliberate Practice Activities in Women's Team Sports

Anthony Steven Smith¹, Robert John Doan, *Charleston Southern University-Charleston*
(shotdoctor@outlook.com)

Expert Versus Novice Thought Process Before, During, and After a Volleyball Match

Robert John Doan¹, Anthony Steven Smith, *Charleston Southern University-Charleston*; Evelyn J. Gordon, Alisha Sink, Kristen Morgan, *University of Southern Mississippi-Hattiesburg*
(robert.doan@usm.edu)

Expert-Novice Differences in Specialized Content Knowledge of Rhythmic Gymnastics Coaches

Juhyun Kwak¹, Han J. Lee, Kyung-Hwa Lee, *Yonsei University-Seoul*
(gjhsjgod@naver.com)

Female Basketball Player Behaviors and Attitudes About Practice and Development

Anthony Steven Smith¹, *Charleston Southern University-Charleston*
(shotdoctor@outlook.com)

Emotional Intelligence, Emotional Exhaustion, Job Satisfaction, and Subjective Wellbeing in Physical Education Teaching

Ye Hoon Lee¹, *University of North Alabama-Florence*; K. Andrew Richards^F, *University of Illinois at Urbana-Champaign*
(ylee6@una.edu)

High-Impact Practice: Preparing Sport Management Students Before Internship

Kristi Sweeney¹, E. Newton Jackson Jr.^F, Elliott Graham, *University of North Florida-Jacksonville*; Megan Schramm-Possinger, *Winthrop University-Rock Hill*
(kristi.sweeney@unf.edu)

12:30 p.m.–2:00 p.m

Teaching and Learning Roundtable Oral Presentations (RT3)

In this session, attendees will learn about the role and impact of occupational socialization across contexts, the latest findings within games-based approaches to teaching games, new insight into the link between physical activity and academic performance, as well as new research in fitness and assessment.

Does Body Weight Matter? Skill and Fitness in Middle School Physical Education

Li Li^{F1}, Haiyong Ding, *Shanghai University of Sport*; Ang Chen^F, *University of North Carolina-Greensboro*
(lili@sus.edu.cn)

Impact of Additional Physical Education Time on Academic Performance in Elementary Children

Lauren Willis¹, Campbellsville University-Campbellsville; Heather E. Erwin^F, University of Kentucky-Lexington
(lmwillis@campbellsville.edu)

A Scoping Review of Physical Education Teacher Socialization Research Between 1979 and 2015

K. Andrew Richards^{F1}, University of Illinois at Urbana-Champaign; Colin G. Pennington, Cornell College-Mount Vernon; Oleg A. Sinelnikov^F, The University of Alabama-Tuscaloosa
(karichar@illinois.edu)

Perceptions of Situated Game Teaching Through Set Plays Curricular Model

Xiuye Xie¹, Western Michigan University-Kalamazoo; Weidong Li^F, The Ohio State University-Columbus
(xiuye.xie@wmich.edu)

Variables Related to Teaching and Assessing Health-Related Fitness Content Knowledge Among U.S. Physical Educators

Stacy Imagbe¹, Ben D. Kern, David Bellar, James M. Clemons, University of Louisiana at Lafayette-Lafayette
(imagbestacy@gmail.com)

Pedagogical Strategies for Delivering the Teaching Games for Understanding Model to Preservice Teachers Possessing Hardcore Nonteaching Orientations

Craig Parkes¹, University of South Alabama-Mobile
(cap32@psu.edu)

Validation of a Soccer Performance Test for Physical Education Teachers

Yaohui He¹, Xiaozan Wang, Lang He East China Normal University-Shanghai; Phillip Ward^F, The Ohio State University-Columbus; Yan Yang, University of Illinois at Urbana-Champaign
(zhenfei826@163.com)

Association Between Bullying Victimization and Physical Education Attendance Among High School Students in the United States

Mengyi Wei¹, Kim C. Graber^F, University of Illinois Urbana-Champaign
(mengyiw2@illinois.edu)

Students' Perception of the Self-Assessment Process in High School PE

Caitlan Peyton¹, Normal Community High School-Normal; Skip M. Williams, Mary L. Henninger, Margo M. Coleman, Illinois State University-Normal
(peytonce@myunit5.org)

Junior High PE Students' Tactical Knowledge in Four Sport Units

Skip M. Williams¹, Illinois State University-Normal; James C. Hannon^F, Kent State University-Kent; Ryan D. Burns, University of Utah-Salt Lake City
(swillia@ilstu.edu)

The Influence of Socialization Factors on Physical Educators' Conceptions of Assessment and Perceived Quality of Assessment

Jenna Starck¹, University of Wisconsin-La Crosse; K. Andrew Richards^F, University of Illinois at Urbana-Champaign; Michael Lawson, Oleg A. Sinelnikov^F, The University of Alabama-Tuscaloosa
(Jstarck@crimson.ua.edu)

Middle School Students' Conceptions and Misconceptions of Fitness Knowledge

Tan Zhang¹, Winston-Salem State University-Winston-Salem; Ang Chen^F, University of North Carolina-Greensboro
(zhangt@wssu.edu)

Exploring Taekwondo Masters' Occupational Socialization Process and Professional Development

Boung Jin Kang¹, Elizabeth City State University-Elizabeth City; Minhyun Kim, Sam Houston State University-Huntsville; Jun-Hyung Baek, University of Maine-Orono; Ha-Young Kim, Gacheon University-Seongnam
(bkang@ecsu.edu)

Reexamining the Relationship Between Sports Participation and Academic Achievement Growth

Sangmin Kim¹, University of Maryland-College Park
(ksmking75@hotmail.com)

2:45 p.m.–4:15 p.m

Physical Activity and Health Promotion, Teaching and Learning Poster Session 3 (PS5)

Attendees will learn about how contextual variables affect people's physical activity and sedentary behavior. Examples of contextual variables include the days of the week, segments of the day, grade level. Attendees are presented with a mix of research studies that reflect diversity in topics, methodology, and participants.

Relationships Among Physical Activity, Sleep Duration, Diet, and Academic Performance in a Representative Sample of Adolescents

Ryan D. Burns¹, Tim A. Brusseau Jr.^F, University of Utah-Salt Lake City; You Fu, Kristen Clements-Nolle, Wei Yang, University of Nevada-Reno
(ryan.d.burns@utah.edu)

Investigating the Effects of Physically Active Brain Breaks on College Students' Physical Activity Levels and Perceived Experiences

Alicia Cooper Stapp¹, Laura Prior, University of Mississippi-Oxford
(acstapp@olemiss.edu)

The Influence of a Comprehensive Sports-Centric Approach to Learning on Student Motivation

Allison Ross¹, Arizona State University-Tempe
(apoulos55@gmail.com)

A Cross-Cultural Qualitative Study of Secondary Physical Education Teachers' Job Satisfaction in Japan, South Korea, and the United States

Yoonsin Oh¹, Saori Braun, Joshua R. Stringer, Zoe Paige Kapusta, Daniel Stockhaus, University of Wisconsin-Eau Claire
(yoonsin@uwec.edu)

Preservice Health Educators' Perception on Teaching At-Risk Youth at a Juvenile Detention Center

Yoonsin Oh¹, Jordan Ellenbecker, Daniel K. Gengenbach, Marquell J. Johnson, University of Wisconsin-Eau Claire
(yoonsin@uwec.edu)

Validation Studies of Three Physical Activity Questionnaires in College Students

Mingming Guo¹, Xiaozan Wang, East China Normal University-Shanghai; Weiyun Chen^F, University of Michigan-Ann Arbor; Liqiang Zhang Sr., Xizang Minzu University-Xianyang
(Ming.guo.china@gmail.com)

Do Practice Behaviors Predict Improvements in Motor Skill in Young Children?

Jerraco Johnson¹, Peter A. Hastie^F, Michael Morris Jr., Mary Rudisill, Auburn University-Auburn
(jlj0042@auburn.edu)

A Comparison of Elementary Physical Education and Physical Activity Classes

Steve Palmer¹, Timothy K. Behrens^F, Northern Arizona University-Flagstaff
(steve.palmer@nau.edu)

An Analysis of Factors Influencing Chinese College Students' Use of Physical Activity Wearables

Xiaolu Liu¹, Xiaofen D. Keating^F, Tracey Ely, The University of Texas at Austin-Austin
(xiaolu.liu@utexas.edu)

Integrative Intervention Improves Young Children's Gender Stereotypes and Motor Competence

Ali Brian^{F1}, Alexandra Stribing, Emily Gilbert, Sally Taunton, Jenna Fisher, Adam Pennell, Matthew Patey, University of South Carolina-Columbia; Kelly Lynn Mulvey, North Carolina State University-Raleigh
(brianali@mailbox.sc.edu)

The Effectiveness of a Mastery Motivational Climate on Hopping for Children With a Disability in an Inclusive Physical Education Setting: A Multiple Baseline Study

Benjamin J. Miedema¹, University of South Carolina-Columbia; Alice M. Buchanan, Vanessa Hinton, Peter A. Hastie^F, Mary Rudisill, Auburn University-Auburn
(bjm0023@auburn.edu)

Teacher Accountability and Student Motor Skill Competency in Tennessee

Tina J. Hall¹, Don Belcher, Alysia Jenkins, Kellie Kosar, Middle Tennessee State University-Murfreesboro
(tina.hall@mtsu.edu)

A Review of Experimental Research in Physical Education From 1998 to 2016

Weidong Li^{F1}, Yung-Ju Chen, Yilin Li, The Ohio State University-Columbus; Xiuye Xie, Western Michigan University-Kalamazoo; Chongyan Shi, Nanjing Sports Institute-Nanjing
(li.832@osu.edu)

Criterion-Referenced Validity of Sedentary Behavior Record Using Wearable Cameras

Heontae Kim¹, Middle Tennessee State University-Murfreesboro; Minsoo Kang^F, The University of Mississippi-Oxford
(hk3m@mtmail.mtsu.edu)

Effect of Sensory Stimulation on Academics and Behavior in Students

Maryann Mitts¹, Missouri Southern State University-Joplin and University of Arkansas-Fayetteville; Dean Gorman, Cathy D. Lirgg^F, Eric J. Lange, University of Arkansas-Fayetteville
(mitts-m@mssu.edu)

Children's Levels of Energy Expenditure, Perceived Exertion, and Fun During Skill Practice

Ryan S. Sacko¹, The Citadel-Charleston; An De Meester, Ghent University-Ghent; Farid Bardid, Ghent University-Ghent and University of Strathclyde-Glasgow; David F. Stodden^F, University of South Carolina-Columbia
(rsacko@citadel.edu)

Mapping the Research Trends in Physical Activity of Children and Adolescents Using Topic Modeling

Suryeon Ryu¹, Han J. Lee, Kyung-Hwa Lee, Yonsei University-Seoul
(ssuryeoni@naver.com)

How Active Are We? Exploring Physical Activity Participation in African American College Women

Lauren C. Scott¹, Bo Shen^F, Erin E. Centeio, Nathan McCaughtry^F, Krista Brumley, Wayne State University-Detroit
(eo2920@wayne.edu)

A Virtual Collegiate Employee Wellness Program: Voices of Participants

Amy J. Rogers¹, Southern Union State Community College-Opelika; Ellen H. Martin, Joy G. Thomas, Clayton R. Nicks, Columbus State University-Columbus
(rogers_amy@columbusstate.edu)

Research on the Effect of Family Basic Factors on the Development of Children's Physical and Mental Health From the Perspective of Sports Activities

You Chen¹, Xiaozan Wang, East China Normal University-Shanghai; Liqiang Zhang Sr., Xizang Minzu University-Xianyang
(641501160@qq.com)

Changes of Children's Physical Activity Behaviors on Weekdays and Weekends

Zan Gao^{F1}, University of Minnesota-Twin Cities-Minneapolis; Peng Zhang, East Stroudsburg University-East Stroudsburg
(gaoz@umn.edu)

Trends of Sedentary Behavior in High School Students in the United States, 2003–2015

Seungho Ryu¹, Paul Loprinzi, Minsoo Kang^F, The University of Mississippi-Oxford; Heontae Kim, Middle Tennessee State University-Murfreesboro
(sryu2@go.olemiss.edu)

Adolescent Physical Activity Levels Across the Segmented School Day

Charles F. Morgan^{F1}, Virginia C. Hodges, Allison Tsuchida, University of Hawaii at Manoa-Honolulu
(morganc@hawaii.edu)

Undergraduate Student Experiences in an Online Physical Education Course

Kurt Ward¹, Andy Stringfellow Jr., Jessica M. Richards, Brenna Cosgrove, Sheri J. Brock^F, Auburn University-Auburn; Nikki Hollett, University of Wisconsin-Whitewater
(jkw0026@tigermail.auburn.edu)

Students' Attitude, Physical Activity, and Knowledge: The Effects of Gender, Grade, and Ethnicity

Yang Liu¹, Senlin Chen^F, Louisiana State University-Baton Rouge; Xiangli Gu^F, University of Texas at Arlington-Arlington
(yliu149@lsu.edu)

Virtual Reality Exercise on College Students' Motivation and Energy Expenditure

Wenxi Liu¹, Daniel McDonough, Zan Gao^F, University of Minnesota Twin Cities-Minneapolis; Zachary Clark Pope, Nan Zeng, University of Minnesota-Minneapolis
(liux4443@umn.edu)

Middle School Students' PA Patterns, Fitness Levels, and Functional Movement

Rick C. Ferkel¹, Central Michigan University-Mount Pleasant
(rick.ferkel@cmich.edu)

The Relationships Between Attitude Toward Physical Education, Physical Activity and Sedentary Behavior, and Knowledge Among Middle School Students

Yang Liu¹, Senlin Chen^F, Louisiana State University-Baton Rouge; Xiangli Gu^F, University of Texas at Arlington-Arlington
(yliu149@lsu.edu)

Physical Activity in Schools and Its Effects on Academic Achievement

Whitney Holeva-Eklund¹, Timothy K. Behrens^F, Northern Arizona University-Flagstaff; Dick Carpenter, Elizabeth Tucker, Julaine Field, University of Colorado-Colorado Springs; Carmen Luna, Cheryl Kelly, Kaiser Permanente of Colorado-Denver
(vw38@nau.edu)

Measuring Self-Efficacy in Skills-Based Health Education: A Pilot Study

Sarah Benes¹, Rebecca Franckle, Traci Alberti, Merrimack College-North Andover; Holly L. Alperin, University of New Hampshire-Durham
(beness@merrimack.edu)

Determinants of Physical Education Teacher Candidates' Social Support and Self-Regulation

Seidu Sofo¹, Emmanuel Thompson, Southeast Missouri State University-Cape Girardeau; Eugene F Asola, Valdosta State University-Valdosta
(ssofo@semo.edu)

College Students' Physiological and Psychosocial Outcomes During Virtual Reality

Daniel McDonough¹, Wenxi Liu, Zan Gao^F, University of Minnesota - Twin Cities-Minneapolis; Zachary Clark Pope, Nan Zeng, University of Minnesota-Minneapolis
(mcd00785@umn.edu)

PE Teacher Resilience and Psychological Flexibility as Indicators for Intent to Remain Teaching in High-Poverty Schools

Douglas W. Ellison¹, Kent State University-Kent; Ben D. Kern, University of Louisiana at Lafayette-Lafayette; Chad M. Killian, University of Illinois at Urbana-Champaign
(delliso4@kent.edu)

Augmented Reality and Physical Activity: A Systematic Review

Ashley Nicole Phelps¹, Jeffrey Allan Colburn, The University of Texas at Austin-Austin
(ashley.phelps@utexas.edu)

Research, Strategies, and Best Practices That Directly Relate to Pedagogy in Rural Settings

Korey Boyd¹, *Springfield College-Springfield*; Cory E. Dixon, Lekia Redmond, Jared Russell^F, Peter A. Hastie^F, *Auburn University-Auburn*
(kzb0032@auburn.edu)

Homeschool Children's Fundamental Motor Skills and Fitness Levels

Nilo C. Ramos¹, Sandra L. Nelson, *Coastal Carolina University-Conway*; Anderson dos Santos Carvalho, Pedro P. Abdalla, Dalmo R. L. Machado *School of Nursing of Ribeirão Preto of the University of São Paulo- Ribeirão Preto*
(niloramos@hotmail.com)

Experimental Study on the Effect of Physical Activity on Academic Achievement in China

Lingshu Li¹, Jun Wang, *Shanghai International Studies University-Shanghai*
(susanli409@163.com)

Association Between Product-Oriented Motor Competence and Perceived Competence in Adolescence

Danielle Rene Nesbitt¹, David F. Stodden^F, *University of South Carolina-Columbia*; An De Meester, *Ghent University-Ghent*
(nesbitdr@mailbox.sc.edu)

4:15 PM–5:30 PM

Physical Activity and Health Promotion Oral Session (OS2)

Attendees will learn how policies at the state- and federal level can affect opportunity and access to physical activity and health services.

The Role of Physical Education Within a Comprehensive School Health Promotion Program

Gabriella Maria Mcloughlin¹, Kim C. Graber^F, *University of Illinois Urbana-Champaign*
(gmcloug2@illinois.edu)

Exploring the Significance of Recreational Activities for Adults With Intellectual Disabilities

Brenden Holt¹, Michelle Grenier, *University of New Hampshire-Durham*
(bh2014@wildcats.unh.edu)

Your State's Physical Activity Plan: Can It Enhance Your CSPAP?

Eloise M. Elliott^{F1}, Brooke C. Towner, *West Virginia University-Morgantown*; Ashleigh Johnson, Erin Dooley, Harold Kohl III, *University of Texas at Austin-Austin*
(eloise.elliott@mail.wvu.edu)

Should We Share? Examining Shared Use in WV Public Schools

Brooke C. Towner¹, *Appalachian State University-Boone*; Thomas Bias, Sean M. Bulger, Eloise M. Elliott^F, *West Virginia University-Morgantown*; Harold Kohl III, *University of Texas at Austin-Austin*
(bct0001@mix.wvu.edu)

Comparison of Teen Birth Rates to Median Income, Total Birth Rates, and Various Federal Funding Initiatives by State

Ashlee Jean Burt¹, Daniel Joseph Burt, *Texas A&M University-Kingsville*
(ashlee.burt@tamuk.edu)

Saturday, April 13, 2019

9:15 a.m.–10:30 a.m

Teaching and Learning Oral Session (OS4)

The role and depth of content knowledge, as well as the impact of learning history on this knowledge is highlighted.

The Impact of Content Knowledge, Specialized Content Knowledge, Peer Analysis and Self-Analysis on Preservice Physical Education Teachers' Error Detection Abilities

Deb Szama¹, *University of Wisconsin-La Crosse*
(dsazama@uwlax.edu)

Glaring Gaps Between Sun-Safety Knowledge and Intention to Teach It

Shannon C. Mulhearn¹, Pamela Hodges Kulinna^F, *Arizona State University-Tempe*; Michael D. Lehrer, Aaron R. Mangold, *Mayo Clinic Arizona-Scottsdale*; Jordan Montoya, *Mayo Medical School-Rochester*
(shannon.mulhearn@asu.edu)

Impact of Preservice Teachers' Learning History on Content Knowledge

Emi Tsuda¹, *West Virginia University-Morgantown*; Phillip Ward^F, Kelsey Higginson, Yilin Li, Kyuil Cho, *The Ohio State University-Columbus*; Yaohui He, Jianzhen Su, *East China Normal University-Shanghai*
(emi.tsuda@mail.wvu.edu)

Comparison of Preservice Physical Education Teachers' Content Knowledge

Seung Ho Chang¹, Jihyun Lee, *San Jose State University-San Jose*; Jose A. Santiago, *Sam Houston State University-Huntsville*
(seungho.chang@sjsu.edu)

REVIEW PANEL CHAIRS AND REVIEWERS

The Review Panel Chairs (RPCs) are listed immediately under each topic area. The abstract and symposium reviewers for each area then follow. An ^F denotes Fellow status in SHAPE America as of November 2018.

Adapted Physical Education/Activity

Wesley J. Wilson, University of Louisiana at Lafayette

T. Nicole Kirk, Old Dominion University
Chad R. Nichols, University of Virginia
Adam Pennell, University of South Carolina

Exercise Science

Jungyun Hwang, Northeastern University

Yen Chen, University of Texas at Austin
Shih-Chun Kao, Northeastern University
Yeonhak Jung, University of Texas at Austin
Wonil Park, Korea University
Taejung Song, University of Cincinnati

Motivation and Psychology

Tao Zhang, University of North Texas

Yang Bai, University of Vermont
Tsz Lun “Alan” Chu, University of Wisconsin-Green Bay
Andrew Colombo-Dougovito, University of North Texas
Rebecca Ellis^F, Georgia State University
You Fu, University of Nevada
Xiangli Gu^F, University of North Texas
Maria Kosma^F, Louisiana State University
E. Whitney Moore, Wayne State University
Haichun Sun^F, University of South Florida
Tristan Wallhead^F, University of Wyoming
Ping Xiang^F, Texas A&M University
Zi Yan^F, Merrimack College
Sami Yli-Piipari^F, University of Georgia
Howard Zeng, Brooklyn College of the City University of New York
Peng Zhang, East Stroudsburg University
Xihe Zhu^F, Old Dominion University

Motor Behavior and Measurement

Sam Logan, Oregon State University

Andrew Pitchford, Iowa State University
Ryan Sacko, The Citadel
Erin Seibert, San Jose State University

Physical Activity and Health Promotion

Brian Dauenhauer, University of Northern Colorado
Heather Erwin, University of Kentucky

Suzan F. Ayers^F, Western Michigan University
Zack Beddoes, University of Wisconsin-La Crosse
Aaron Beighle, University of Kentucky
Catherine Berei, Southern Connecticut State University
Hannah Brewer, Slippery Rock University
Tim A. Brusseau Jr.^F, University of Utah
Sean Bulger, West Virginia University
Russell Carson^F, University of Northern Colorado
Erin Centeio, University of Hawaii at Manoa
Seth Eckler, University of Kentucky
Cate Egan, University of Idaho
Eloise Elliott^F, West Virginia University
Grace Goc Karp, University of Idaho
Brent Heidorn, University of West Georgia
Jennifer Krause, University of Northern Colorado
Kent Lorenz, San Francisco State University
Gabriella McLoughlin, Iowa State University
Jamie McMullen, University of Northern Colorado
Ken Murfay, University of Kentucky
Ashley Phelps, The University of Texas at Austin
Keven Prusack, Brigham Young University
K. Andrew Richards^F, University of Illinois at Urbana-Champaign
Rulan Shangguan, The University of Texas
Peter Stoeper, University of Northern Colorado
Lauren Willis, Campbellsville University

Sociocultural and Social Justice

Zan Gao, University of Minnesota-Twin Cities

Kathy Gill^F, William Paterson University
Louis Harrison Jr.^F, The University of Texas at Austin
Jung Eun Lee, University of Minnesota-Duluth
You Fu, University of Nevada
Charles C. Huang, Wayland Baptist University
Jiling Liu, Texas A&M University
Wenxi Liu, University of Minnesota Twin Cities
Zachary Clark Pope, University of Minnesota
Jared A. Russell^F, Auburn University
Sharon Stoll^F, University of Idaho
Zi Yan^F, Merrimack College
Nan Zeng, University of Minnesota
James Jianhui Zhang^F, University of Georgia
Peng Zhang, East Stroudsburg University

Sport and Coaching

Jody Langdon, Georgia Southern University

Carol Brennan-Caplan, Clarion University of
Pennsylvania
Michael Cathey, Tennessee Tech University
Keith Christy, Adrian College
Daniel Czech, Georgia Southern University
Kacey DiGiacinto, Elizabeth City State University
Lori Gano-Overway, Bridgewater College
Bomna Ko^F, East Carolina University
Angela Lumpkin^F, Texas Tech University
Tony Moreno, Eastern Michigan University
Lynn Oberbillig, Smith College
Jeff Petersen^F, Baylor University

Melissa Thompson, University of Southern Mississippi
Greg Young, James Madison University

Teaching and Learning

Todd Pennington, Brigham Young University Insook Kim, Kent State University

David Barney, Brigham Young University
Zack Beddoes, University of Wisconsin-La Crosse
Ali Brian^F, University of South Carolina
Mark Byra^F, University of Wyoming-Laramie
Langston D. Clark, The University of Texas at San
Antonio
Fatih Dervent, Marmara University
Douglas Ellison, Kent State University
Tan Leng Goh, Central Connecticut State University
Jinhong Jung, North Carolina Central University
Bomna Ko^F, East Carolina University
Brian O. Culp, Kennesaw State University
Peter Iserbyt, Katholieke Universiteit Leuven
Junyoung Kim, Missouri State University
Kevin Mercier, Adelphi University
Shannon C. Mulhearn, Arizona State University
Jenny Parker, Northern Illinois University
Karen P. Richardson, Bridgewater State University
Paul Rukavina^F, Adelphi University
Jose A Santiago, Sam Houston State University
Takahiro Sato^F, Kent State University
Oleg Sinelnikov^F, The University of Alabama
Paul Stuhr^F, California State University San Marcos
Emi Tsuda, West Virginia University
Carla Vidoni^F, University of Louisville
Carol Wilkinson, Brigham Young University

PEER-REVIEWED SYMPOSIA

An ^F denotes Fellow status in SHAPE America as of November 2018.

Tuesday, April 9, 2019, 8:00 a.m.–10:00 a.m

Fitness Literacy: Construct, Importance, and Assessment

Category: Motor Behavior and Measurement

Symposium Description: Fitness literacy is the degree to which individuals are able to access and process basic fitness-related information and services and thereby participate in fitness-related decisions. Very recently, American Heart Association has stated that limited health literacy is highly prevalent in the United States and is strongly associated with patient morbidity, mortality, healthcare use, and costs. We, accordingly, examined the construct, importance and assessment of fitness literacy and will present at this symposium.

Extended Description: Health literacy is defined as the degree to which an individual can access, process, and comprehend basic health information and services in order to inform and participate in health decisions. Limited health literacy is an invisible barrier to healthcare delivery that has profound costs for individual and public health. Health literacy has been associated with limited knowledge of health conditions and medications, poorer overall health status, higher healthcare costs, and increased likelihood of rehospitalization and mortality. The Institute of Medicine published its landmark 2004 report *Health Literacy: A Prescription to End Confusion* emphasized that health literacy operates within the “health concept,” recognized as the broad social fabric in which institutional, public, and private health occurs. Very recently, American Heart Association (AHA, 2018) published its scientific statement to clarify the central relevance of health literacy to cardiovascular health. Accordingly, as a part of health literacy, fitness literacy can be defined as individuals are able to access and process basic fitness-related information and services and thereby participate in fitness-related decisions. While fitness literacy has been included in textbooks and a few assessment tools (e.g., FitSmart® and PE Metrics®) have been developed, its construct, importance and assessment have not been systematically reviewed. This symposium fulfills this need.

Presenting Author: Weimo Zhu ^F
(weimozhu@uiuc.edu)

Fitness Literacy: What, Why and How?

Weimo Zhu ^F, University of Illinois at Urbana-Champaign

“Aerobic Capacity” in Fitness Literacy: A Review

Ze Zhao Chen, University of Illinois at Urbana-Champaign

“Muscular Strength and Endurance” in Fitness Literacy: A Review

Xiong Qin, University of Illinois at Urbana-Champaign

“Flexibility” in Fitness Literacy: A Review

Hai Yan, University of Illinois at Urbana-Champaign

Tuesday, April 9, 2019, 10:30 a.m.–12:30 p.m

Championing CSPAPs: Studies of Targeted Program Implementers and Advocates

Category: Physical Activity and Health Promotion

Symposium Description: The comprehensive school physical activity program (CSPAP) model envisions an infrastructure for physical activity (PA) promotion that capitalizes on the leadership and support of an entire school community. The purpose of this proposed symposium is to showcase research focusing on members of the school community who are positioned to play key roles as implementers and advocates of CSPAPs. Seven studies are included in the symposium.

Extended Description: The comprehensive school physical activity program (CSPAP) model envisions an infrastructure for physical activity (PA) promotion that capitalizes on the leadership and support of an entire school community. The purpose of this proposed symposium is to showcase research focusing on members of the school community who are positioned to play key roles as implementers and advocates of CSPAPs. Seven studies are included in the symposium. A diffusion of innovations theory perspective framed the first study, in which a national sample of 407 were surveyed about their adoption of a CSPAP. While the majority of the teachers

reported having adopted a CSPAP, demographic/background and school context variables hypothesized to be factors in the teachers' adoption decisions were found to be less important than expected. The second study reports results of a CSPAP intervention that assessed 21 schools' capacity for program implementation, considering both organizational (e.g., space, infrastructure) and individual variables (e.g., motivation, commitment). Schools with a relatively high capacity for change had higher implementation than schools with a relatively low capacity for change. In the third study, autoethnographic methodology was used to investigate the experiences of four faculty from two universities who collaborated with two physical education teachers, one from an elementary school and the other from a middle school, to implement a before/after school PA program. Findings highlighted the importance of a close partnership between the universities and the schools and the central role of the physical education teachers in gaining administrator buy-in and ultimately facilitating successful program implementation. Study Four continues the focus on the role of universities in supporting CSPAPs, specifically via preservice education for future elementary classroom teachers. Participants were 71 preservice classroom teachers from two universities who took a school PA promotion course that either included (intervention) or did not include (control) engagement with an online community of practice. The intervention group showed more positive outcomes than the control group on a number of measures (e.g., perceived competence for classroom movement integration, reduced perceived barriers for learning about movement integration). Classroom PA promotion is also the emphasis in the fifth study, which was an intervention exploring data coaching with classroom teachers as a strategy to increase children's moderate-to-vigorous PA (MVPA). Unexpectedly, children whose teachers received data coaching accrued less MVPA at post-intervention, suggesting a possible ceiling effect or the need to share alternative types of data with teachers that would serve to increase their PA promotion. The aim of the sixth study was to ascertain school principals' and grant funders' motivations to support CSPAPs. Themes from interviews showed that participants' felt strong connections to their local communities and a personal commitment to health and fitness. The final study examined the perceptions of 10 physical education teachers and 7 principals whose school district received a three-year Physical Education Program (PEP) grant to implement CSPAPs. Participants indicated that the funding had led to positive changes (e.g., professional development, purchasing evaluation

equipment) for supporting CSPAP implementation and sustainability. This proposed symposium advances the evidence base needed to best support potential CSPAP champions.

Presenting Author: Collin A. Webster ^F
(collin.iconoclast@gmail.com)

A Diffusion of Innovations Perspective of Physical Educators' CSPAP Adoption

Collin A. Webster ^F, Chanta Moore, Karie Lee Orendorff, Sally Taunton, University of South Carolina-Columbia; Diana Mindrila, University of West Georgia-Carrollton; Gregory Stewart, Methodist University-Fayetteville

Effect of School- and Staff-Level Capacity on Wellness Program Implementation

Joey A Lee, University of Colorado-Colorado Springs; Gregory J Welk ^F, Lorraine Lanningham Foster, Douglas Gentile, Spyridoula Vazou, Laura Liechty, Ann Torbert, Iowa State University-Ames; Senlin Chen ^F, Louisiana State University-Baton Rouge; David Dzewaltowski, University of Nebraska Medical Center-Omaha; Richard Rosenkranz, Kansas State University-Manhattan

A Before/After School PA Program: Program Implementers' Experiences

Tan Leng Goh, Central Connecticut State University-New Britain

Online Communities of Practice to Support Preservice Classroom Teachers

Spyridoula Vazou, Iowa State University-Ames; Collin A. Webster ^F, Chelsea Shortt, University of South Carolina-Columbia

Data-Coaching Effects on Student Physical Activity in the Classroom

Russell L. Carson ^F, Jaimie M. McMullen, Brian D. Dauenhauer, Lauren von Klinggraeff, Katie Hodgin, Grace Turner, University of Northern Colorado-Greeley

Funders' and Gatekeepers' Views of CSPAP

Pamela Hodges Kulinna^F, Shannon C. Mulhearn, Janelle Marie Griffio, Hyeonho Yu, Arizona State University-Tempe

Stakeholders' support of CSPAP sustainability after a three-year PEP grant

Catherine A. Egan, Grace Goc Karp, University of Idaho-Moscow; Catherine Berei, Southern Connecticut State University-New Haven

Thursday, April 11, 2019, 1:45 p.m.–3:45 p.m

International Perspectives on Common Content Knowledge and Specialized Content Knowledge

Category: Teaching and Learning

Symposium Description: It is now a decade since the terms common content knowledge (CCK) and specialized content knowledge (SCK) entered the physical education literature (Ward, 2009). Both domains are part of the SHAPE America (2017) standards for beginning teachers. Like the United States, other countries around the world are considering the role of CCK and SCK in their physical education teacher education programs. In this symposium studies conducted Belgium, China, Korea, Japan, and Turkey will be presented.

Extended Description: It is now a decade since the terms common content knowledge (CCK) and specialized content knowledge (SCK) entered the physical education literature (Ward, 2009). Both domains of content knowledge are part of the SHAPE America national standards for initial physical education teacher education (2017). Like the United States (U.S.), other countries around the world are considering the role of CCK and SCK in their physical education teacher education (PETE) programs. In this symposium studies conducted Belgium, China, Korea, Japan, and Turkey will be presented. Studies conducted in different countries have considerable potential to inform practice in all countries because each country represents a different system of teacher education, and the effects of each system on educating teachers provides some insight into how to improve teacher education. For example, in the U.S. Kim, Lee, Ward, and Li (2015) reported that PETE students receive 1-3 three-credit hour semester classes to cover as much content as possible resulting in some content being covered for as a little as 6 lessons. In contrast, in China PETE students can major in a content area where they may spend 2-4 three-credit hour semester classes on one content area such as soccer (He, Ward, & Wang, 2018). The effects of different systems on what PETE students learn, theoretically varies as a function of time spent on the content. The studies presented in this symposium collectively examine a number of questions about these different educational systems. One common question is what CCK and SCK students

entering universities as freshmen know from their k-2 physical education experiences and extracurricular experiences. The answer to this question is, in part, a judgment on the effectiveness of school physical education. But it establishes prior knowledge for PETE students as they enter teacher education programs. A second question answered in this symposium what do PETE students learn about CCK and SCK from their teacher training if you compared their CCK and SCK at entry to the university with their CCK and SCK as they exit the university? Many authors have argued that content knowledge preparation in PETE programs is both insufficient and ineffective (Kirk, 2010; Siedentop, 2002; Vickers, 1987; Ward, 2009). The problem that PETE studies of CCK and SCK elucidate is a problem of alignment. Said another way “you get what you teach”. Cohen (1987) defined instructional alignment as occurring when the objectives of instruction, the instruction and what is assessed are matched. That is to say, to assess what you teach, and what you teach is defined by your objectives. When this occurs research has shown that learning gains are significant (Cohen, 1987; Desimone, 2009). The PETE studies in this symposium raise a number of questions about the effectiveness of school physical education and the alignment of PETE content courses to the knowledge needed by future physical education teachers. It may be that the ineffectiveness of school physical education is in part a function of misaligned PETE courses where the outcomes are insufficient to prepare teachers to teach the content.

Presenting Author: Phillip Ward^F
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Content Knowledge Derived from Physical Education Teacher Education Programs

Fatih Dervent, Marmara University-Istanbul;
Erhan Devrilmez, Mustafa Levent Ince, Middle East Technical University-Ankara; Phillip Ward^F, The Ohio State University-Columbus

A Cross-Sectional Study of the Changes in Content Knowledge from Freshmen to Juniors in China

Xiaozan Wang, Yaohui He, Longsong Kong, East China Normal University-Shanghai; Phillip Ward^F, The Ohio State University-Columbus

Task Adaptations as a Function of Content Knowledge
Peter Iserbyt, Rosalie Coolkens, Joren Lookx, Kian Vanluyten, Katholieke Universiteit Leuven-Leuven

Korean Teacher Candidates' Specialized Content Knowledge for Teaching Soccer

Han J. Lee, Byung-Gu Lee, Juhyun Kwak, Kyung-Hwa Lee, Yonsei University-Seoul; Bomna Ko^F, East Carolina University-Greenville; Insook Kim^F, Kent State University-Kent; Phillip Ward^F, Kyuil Cho, Mijoo Kim, The Ohio State University-Columbus

Japanese Physical Education Majors' Specialized Content Knowledge

Emi Tsuda, West Virginia University-Morgantown; Phillip Ward^F, The Ohio State University-Columbus; Yuji Ohnishi, BIwako Seikei Sport College-Otsu; Satoshi Yoshino, Ibaraki University-Mito

Friday, April 12, 2019, 7:30 a.m.–9:30 a.m

A Study Comparing TeachLivE Versus In-Person Skill Building for Educators Implementing Sexuality Education

Category: Teaching and Learning

Symposium Description: This study compared skill mastery through traditional in-person workshop versus TeachLivE, a virtual classroom with student avatars. We compared the skills involved with answering difficult sexuality health questions and creating LGBTQ inclusive classrooms. Educators watched a short video and then role-played with colleagues or rehearsed skills in the TeachLivE virtual classroom with student avatars. Promising results have shown the efficacy of the approach and the demand for scaling across sexual health topics for schools nationwide.

Extended Description: According to GLSEN's 2015 School Climate survey, more than 40% of LGBTQ students who were not planning to finish high school cited their ongoing harassment as the reason they were considering

dropping out. Additionally, LGBTQ youth are four times as likely to attempt suicide as their heterosexual peers and have higher rates of substance abuse (Bontempo & D'augelli, 2002, pp. 364–374). Research has shown that it's the way these youth are treated in their homes, schools, and communities and the levels of support they have that are directly linked to the risk for suicide. It's literally a matter of life and death for educators to create and maintain safe and inclusive classrooms. The good news is that LGBTQ students who have even one supportive school staff member they can talk to are 30% less likely to make repeated suicide attempts, compared to youth who don't have a trusted adult at school (Goodenow, Szalacha, & Westheimer, 2006, pp. 573–589).

This study compared skill mastery through traditional in-person workshop versus TeachLivE, a virtual classroom with student avatars. We compared the skills involved with answering difficult sexuality health questions and creating LGBTQ inclusive classrooms. Educators watched a short video and then role-played with colleagues or rehearsed skills in the TeachLivE virtual classroom with student avatars. Promising results have shown the efficacy of the approach and the demand for scaling across sexual health topics for schools nationwide.

Presenting Author: Nora Gelperin
(nora@advocatesforyouth.org)

A Study Comparing TeachLivE Versus In-Person Skill Building for Educators Implementing Sexuality Education I

Jillian Schreffler, University of Central Florida-Orlando

A Study Comparing TeachLivE Versus In-Person Skill Building for Educators Implementing Sexuality Education II

Nora Gelperin, Advocates for Youth-Washington D.C.

PEER-REVIEWED ABSTRACTS

Adapted Physical Education/Activity

A Movement-Based Social Skills Program for Children With Autism

Jihyun Lee, Seung Ho Chang, San Jose State University-San Jose
(jihyun.lee01@sjsu.edu)

Background/Purpose: The purpose of this study was to evaluate the effectiveness of a movement based social skills program on gross motor skills and social skills of children with autism spectrum disorder (ASD).

Method: Nineteen children with ASD (*mean age*=9.3 [\pm 3.0]) served as participants. The program was held at a local recreation center, twice per week, 75 mins per session, for eight weeks. Each session included the following components: preview; warm-up; object control skill stations; a small group activity; clean up; and closure. Social skills and gross motor skills were assessed on the first and last program day. Six object control skills were measured by the Test of Gross Motor Development-2 (TGMD-2). For social skill evaluation, the Social Skills Improvement System (SSIS) Rating Scales (Parent Form) and a direct observation checklist on ten selected social skills were used (2=independent, 1=prompted, and 0=no response/error).

Analysis/Results: Nineteen children with ASD (*mean age*=9.3[\pm 3.0]) served as participants. The program was held at a local recreation center, twice per week, 75 mins per session, for eight weeks. Each session included the following components: preview; warm-up; object control skill stations; a small group activity; clean up; and closure. Social skills and gross motor skills were assessed on the first and last program day. Six object control skills were measured by the Test of Gross Motor Development-2 (TGMD-2). For social skill evaluation, the Social Skills Improvement System (SSIS) Rating Scales (Parent Form) and a direct observation checklist on ten selected social skills were used (2=independent, 1=prompted, and 0=no response/error).

Conclusions: Overall, the results indicate that the intervention used in this study did improve social skills and object control skills of the participants. However, the SSIS did not capture any changes. This may lead to the

argument that the SSIS has limited relevance for social skills used in physical activity settings.

An Evaluation on Physical Education Teachers' Perspectives of Female Students Based on Self-Determination Theory

Kimberly Maljak, Kyle Burza, Cori Hilton, Kathryn Ciolli, Christopher Albrecht, Northeastern Illinois University-Chicago
(k-maljak@neiu.edu)

Background/Purpose: The Centers for Disease Control and Prevention (CDC, 2017) indicate childhood obesity has tripled in youth ages 12-19 and shows greater increases of obesity among adolescent females. According to the Institute of Medicine (IOM, 2013), because children spend the vast majority of their day in school, PE is viewed as one of the most ideal venues to increase physical activity (PA) and potentially help reduce obesity.

Self-Determination Theory (SDT) emphasizes the social and contextual factors that influence peoples' behaviors and choices and the degree to which they are able to satisfy their psychological needs (Ryan & Deci, 2000). Deci and Ryan propose three psychological needs to be met in order to maximize growth, social development, and well-being. They are autonomy (i.e., the need to self-direct one's behavior), competence (i.e., the need to engage effectively in one's environment), and relatedness (i.e., the need to feel a sense of connectedness to other people; Deci & Ryan, 2000). If PE teachers implement these three needs, they could potentially motivate preadolescent and adolescent females to increase PA during PE.

Method: Using participant observation methodology, we observed and interviewed 15 secondary PE teachers in eight middle and high schools during one semester. We conducted 30 observations; two in each PE class at the beginning and end of the semester. In addition, we conducted one 60-minute individual interview with each PE teacher. Constant comparison and inductive analysis were used to analyze data and develop themes throughout data collection. Trustworthiness was sought

by prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, and member checking.

Analysis/Results: We found PE teachers' perceptions of SDT and its impact on female students in PE classes varied individually and from school to school. Teachers generally reported curriculum and protocol decisions were developed by administration with the ability to make necessary adaptations within their department. Overall, PE teachers suggested and we observed that 1) teachers provided limited autonomous environments with opportunities to choose, create, express, and explore on specified days, 2) teachers fostered competence through use of skill progression, positive feedback, and practice time, and 3) teachers generated varying relationships with and among female students through a range of grouping strategies, team building activities, and global care.

Conclusions: According to Ferrer-Caja and Wiess (2000), when teachers were able to create a learning climate in a noncompetitive, autonomous environment, female students' intrinsic motivation was positively related to self-determination with respect to autonomy. Unfortunately, results indicated PE teachers limited autonomy by offering choices on specified days such as fun Friday's, or when students demonstrated positive behaviors and earned rewards toward choice. Conversely, results indicated PE teacher's fostered competence in skills through praise, feedback, and appropriate instruction to increase female students' motivation and sense of satisfaction (Deci & Ryan, 2000). Furthermore, PE teachers used various strategies to build relatedness among females, allowing them to work with friends during activities, hence increasing participation (Ntoumanis, 2005). Finally, PE teachers used global care to build relationships with females. They showed genuine care and expressed concern for their well-being and safety.

Attitudes of Students With Learning Disabilities Toward Participation in Physical Education: A Teachers' Perspective—Qualitative Examination

Ellie Abdi, EO School District/Montclair State University-Montclair
(e.abdi@eastorange.k12.nj.us)

Background/Purpose: The proposed approved dissertation manuscript is named Attitudes of Students with Learning Disabilities Toward Participation in Physical Education: A Teachers' Perspective - Qualitative Examination. Many researchers have confirmed that students with disabilities engage in significantly less

physical activity than their nondisabled peers in physical education class. One of the elements that influences students' participation in physical education class is attitude. This study looks at specifically 2 attitude components of enjoyment and usefulness. Teachers' perceptions of students' attitude with learning disabilities toward participation in physical education were assessed through semi-structured interviews of teachers. There is a gap in the literature with respect to investigating the attitudes of students with learning disabilities, emotional/behavioral disabilities, or attention difficulties. While there is research-indicating lack of participation in physical education class, there is limited research on how teachers perceive and assist students to participate in physical education.

Method: This qualitative case study was framed by two research questions, which were explored through personal, one-on-one interview sessions. Two components framework of attitude, affective (enjoyment) and cognitive (usefulness) were characterized in the study. The following questions reflected vital elements of teachers' experiences and perceptions in working with learning disabled students and attitude behavior of physical activity during physical education class. The outcome of this research can contribute to assist teachers with the attitudes of learning disabled students in physical education class. The applications emerging from the study shall become part of the best practices that are suggested by the interviews.

Q 1. What are physical education teachers' perceptions and experiences in working with learning disabled students in their classes with respect to enjoyment and usefulness attitude components?

Q 2. How would physical education teachers describe the attitudes and behaviors of learning disabled students in their classrooms?

Analysis/Results: Key finding of the study extracted from the interviews revealed seven major dimensions: (a) enjoyment, (b) usefulness, (c) inclusion, (d) co-education, (e) limited lack of physical education, (f) factors in lack of physical education, and (g) suggestions and experiences. Education staff have meaningful jurisdiction throughout all these factors. Considerations of known factors influencing the attitudes of students with learning disabilities toward physical education may result in progressive consequences.

Conclusions: Using teachers' perceptions and suggested strategies, this study was designed to assist and inform future practice related to teaching of physical education to students with learning disabilities. This research may someday shape policies and approaches toward instilling

positive outlooks in young people with learning disabilities toward physical activity in physical education.

Body Fat and Weight Training Among College Students

Larry Judge^F, Ball State University-Muncie; Ben D. Kern, David Bellar, University of Louisiana at Lafayette-Lafayette
(lwjudge@bsu.edu)

Background/Purpose: Body composition is an important component of health-related fitness and is strongly associated with physical activity (PA) and sedentary behavior (SB) (Must & Tybor, 2005). The Leisure and Physical Activity Survey (LPA) has been used to examine PA and SB in college-aged students (Bellar et al., 2014b), and has demonstrated acceptable statistical values for construct validity and reliability (Bellar et al., 2014a). Utilizing the LPA, Bellar et al (2014) reported alarming changes in body composition among students in all college classifications (freshman through graduate student). Increases in body fat percentage (BF%), resulting in abnormal body composition early in life, increases the risk of obesity and related disorders (Guo, Wu, Chumlea, & Roche, 2002), thus it is critical to further examine body composition changes and associated factors among college-aged students.

Method: In total, 84 college-aged males completed the LPA survey and were measured for body composition by air displacement plethysmography. The LPA is a self-report measure of frequency and duration of physical activity, including days/week and bout durations of both aerobic and weight training exercise. On the day of testing, participants reported to the laboratory during the morning hours after an overnight fast and were allowed to drink only water. After providing informed consent, participants completed the LPA and underwent the body composition assessment. Differences in responses on the LPA and values for BF% were examined via ANOVA with Tukey HSD post hoc testing. Associations among responses on the LPA were examined via Spearman's rho. Statistical significance was set a priori at $p < 0.05$.

Analysis/Results: The average BF% of participants ($N=84$) was 18.9 ± 9.4 (mean \pm SD). The results of ANOVA did not reveal significant differences in BF% by number of days of reported aerobic exercise ($F=0.21$, $p=0.81$) or duration of aerobic training ($F=0.63$, $p=0.53$). Similarly, the analysis revealed no difference between BF% and days of weight training ($F=2.43$,

$p=0.09$) however, a significant difference was noted for durations of weight training activity ($F=3.37$, $p=0.03$). Tukey HSD post hoc indicated that those reporting >30 mins per session had the lowest BF% (17.6 ± 1.2) and this result was significantly different ($p=0.03$) than those reporting 15 min or less per session (24.7 ± 2.5). Aerobic days of training and duration of training were significantly related ($\rho=0.47$, $p < 0.001$), as were weightlifting days of training and duration ($\rho=0.63$, $p < 0.001$) however, no aerobic values and weightlifting values were significantly associated with each other ($p=0.32$).

Conclusions: The results of this study support the need for college-aged students to engage in weight training of at least 30 mins per session. Health concerns exist among all age groups in the US population, therefore it is important to inform each portion of the population on healthy behaviors. With many colleges and universities investing considerable capital in large recreational centers, it is important to encourage students to utilize these facilities and make informed decisions about the types of physical activities that result in improved health and best address their personal health goals.

Children's Physical Activity and Beliefs in App-Based Physical Education Classes

Jung Eun Lee, University of Minnesota Duluth; Zan Gao^F, University of Minnesota-Twin Cities-Minneapolis
(junelee@d.umn.edu)

Background/Purpose: Offering quality physical education (PE) programs is one of the effective approaches of a variety of school-based physical activity (PA) interventions. To gain children's attention and their lack of interest in physical movement, PE teachers have recently employed novel technologies, such as the iPad and exercise-related mobile applications. The purpose of this study was to examine the effect of app-based PE classes on children's PA and their psychosocial beliefs.

Method: Fourth and fifth grade children from two elementary schools ($n = 157$) participated in this study. Children from one school received a short-term app-based intervention while those from the other school participated in traditional PE classes with limited technology use, serving as a comparison group. Children's sedentary, light and moderate-to-vigorous PA during three PE sessions was measured with accelerometers. A battery of questionnaires was used to assess children's psychosocial beliefs in PE.

Analysis/Results: The app-based group demonstrated significantly less increased percentage of time spent in both light PA, $F(1, 154) = 97.7, p < 0.001, \eta^2 = 0.39$, and moderate-to-vigorous PA, $F(1, 154) = 31.4, p < 0.001, \eta^2 = 0.17$. For children's beliefs, there was no significant differences in increases of all four beliefs between the app-based group and the comparison group.

Conclusions: It appears that the app-based PE classes had little effect on improving elementary children's PA and psychosocial beliefs, possible due to a learning curve. A longer intervention period may be needed to witness true effect of app-based PE classes on promoting children's PA and beliefs.

Contributions of Self-efficacy in a Summer Sports Camp: Boys' Perspectives

Ping Xiang^F, Jiling Liu, Ron E. McBride^F, Texas A&M University-College Station; Xiaoxia Su, Kaohsiung Christian Hospital-Kaohsiung
(ping-xiang@tamu.edu)

Background/Purpose: Guided by Bandura's self-efficacy theory (1997), this study examined factors perceived to contribute to physical activity self-efficacy (PASE) and social self-efficacy (SSE) among at-risk adolescent boys attending a summer sports camp. PASE refers to individuals' beliefs in their ability to do well in physical activities. SSE concerns individuals' beliefs in their ability to form and maintain social relationships, work well with others and manage interpersonal conflicts. Mastery experience (e.g., performance success), vicarious experience (e.g., observing a friend successfully perform a new skill), verbal and social persuasion (e.g., positive feedback from teachers) and physiological and emotional states (e.g., experiencing enjoyment) are the four major sources (or factors contributing to) of self-efficacy. Su, Xiang, McBride, Liu, and Thornton (2016) revealed this group of at-risk adolescent boys differentiated between PASE and SSE and that the two self-efficacy beliefs significantly positively predicted boys' prosocial behaviors and effort at the camp. These results support the research literature that self-efficacy beliefs are essential to children's motivation, behavior and performance in physical activity settings (e.g., Gao, Lee, Xiang, & Kosma, 2011). What remains unknown are factors the boys considered that could have contributed to PASE and SSE. Inquiry in this area might provide insightful information about how to enhance at-risk boys' PASE and SSE in summer sport camp settings.

Method: Thirty-eight boys were selected from a total of 97 participating in a larger project on at-risk boys' motivation and related behaviors and performance in a summer sports camp. The camp provided economically disadvantaged adolescent boys aged 10-13 years old opportunities to develop behavioral, physical and social skills through sports and physical activities in a three week residential setting. Boys were individually interviewed near the end of camp. All interviews were audio-recorded and transcribed for later analysis.

Analysis/Results: The interview data were analyzed via constant comparison methods (Glaser & Strauss, 1967). Trustworthiness was ensured through prolonged engagement at the research site and member-checking. Three major findings emerged from the interview data. First, mastery experience (e.g., "everything we do every day helps a lot") was perceived as the most salient factor contributing to both PASE and SSE. Second, support from others (e.g., "I have coaches encourage me to do things well") and enjoyment (e.g., "we had a lot of fun") were also perceived as influential factors for the two self-efficacy beliefs. Finally, perceptions of effort (e.g., "I play hard and give my best effort") were unique to PASE whereas personal traits (e.g., "I'm great at making friends since I'm nice") were unique to SSE.

Conclusions: Findings of this study were generally consistent with previous theoretical (Bandura, 1997) and empirical works (e.g., Chase, 1998). Specifically, mastery experience emerged as the most influential source of PASE and SSE for this group of at-risk boys. To enhance self-efficacy beliefs at this summer sports camp, coaches/teachers might create experiences where the boys have optimal opportunities to learn and master a variety of physical/social skills with high rates of success.

Cultivating Preservice Physical Educators as Inclusion Specialists via Situated Learning

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Background/Purpose: The present study examined the impacts of situated learning instructional model used in an introductory course of adapted physical education (APE) to prepare preservice physical educators (PsPE) as inclusion specialists. Guided by theoretical perspectives of situated learning (Lave & Wenger, 1991), critical reflection (Brookfield, 1995), and service-learning (Butin, 2005), it explored PsPEs' learning experiences

in the APE course regarding their preparation to the knowledge and skill acquisition of disability and teaching SWD in physical education.

Method: The PsPEs' experiences were explored by using a qualitative intrinsic case study. Twenty-Two PsPEs from spring (n=14, 4 seniors, 10 juniors) and fall (n=8, 3 seniors, 5 juniors) semester in 2017 participated in this study. Collected data were semi-structured, face-to-face interview, participant's information form, work samples, field notes, visual artifacts, and researcher's journal. Multiple strategies were used (triangulation, member checking, prolong engagement, self-reflective journaling, theoretical positions, and thick description) to evaluate the quality of research.

Analysis/Results: Themes were sought by using inductive thematic analysis. Four preliminary themes emerged: (a) *active engagement as a learning tool*; (b) *the power of authenticity: developing adaptability and flexibility*; (c) *discovering self-assurance as a teacher*; (d) *transformative learning through service-learning*.

Conclusions: The PsPEs reflected that their experiences in the APE course were beneficial to learn the subject knowledge because they engaged in activities that dealt with real people in real-life settings. Situated activities seemed to support the PsPEs' learning to understand the subject knowledge of disability and pedagogy and to promote them to assure teachers' roles.

Effect of Adolescents Girls' Summer Camp on Energy Balance

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Background/Purpose: Research has shown that adolescents are prone to sedentary and unhealthy behaviors during summer months. Specifically, overweight and obese (OW) adolescent girls have found to gain excessive weight during the summer months due to a lack of physical activity (PA) and unhealthy eating. Youth summer camp programs have potential to engage adolescent girls in PA and help them to learn healthy PA and eating habits beyond the summer months. Although one week summer camp is an integral part of American youth's summer experience, little to no research has been conducted to determine the longitudinal impact of summer camps. Thus, grounded in the Self-Determination Theory, this study aimed to compare the longitudinal effect of psychological need-supportive instruction

centered summer camp intervention on energy balance and PA and dietary behaviors between healthy weight (HW) and OW girls.

Method: Adolescent girls from the Southeast US [$N=42$; $n_{HW}=24$; $n_{OW}=18$ (>body mass index 85th percentile); $Age = 11.70 \pm 1.12$] attended a one-week (5 weekdays, from 8:30am to 4:30pm) camp intentional in need-supportiveness, with 22 participants completing the 12-week follow-up. The intervention consisted of 21hrs of moderate-to-vigorous intensity PA (yoga, exercise, PA games, lifetime PAs), 5hrs of health classes, and supportive activities (art and crafts). In addition, during the camp week and 12-week follow-up period EDMODO online platform was used to communicate with the camp participants. Objective 7-day PA was measured via wrist-worn ActiGraph Link accelerometers and energy consumption with 3-day food intake records. Self-determined exercise motivation was assessed using Behavioral Regulations in Exercise Questionnaire-3. Freedson VM3 Combination ('11) were used to estimate participants' energy expenditure, and energy balance was calculated deducting energy consumption from energy expenditure.

Analysis/Results: The study showed no statistically significant baseline differences in steps ($t(40) = 1.21$, $p = .234$) between HW and OW participants, with 15 HW and 11 OW participants achieving 10,000 step daily recommendation. However, OW participants had higher energy consumption ($t(40) = 4.12$, $p < .001$, $d = .38$) and energy balance compared to HW participants ($t(40) = 2.88$, $p = .007$, $d = .33$). Six HW participants had their energy consumption below the recommendations and 18 within, whereas 16 OW participants exceed the recommendation (1,600, 1,800, and 2,000kcal/d for sedentary, moderately active and vigorously active participants, respectively). The study showed a statistically significant between-group effect on steps ($F(1, 19) = 15.83$, $p = .001$, $\eta_p^2 = .46$), energy consumption ($F(1, 19) = 7.23$, $p = .013$, $\eta_p^2 = .27$), and energy balance ($F(1, 18) = 6.93$, $p = .039$, $\eta_p^2 = .20$), with OW participants increasing their steps (9,361 to 10,133/day), reducing their energy consumption (2,245 to 1,923kcal/day), and reducing their energy balance (+222 to +10kcal/day) against no changes among HW participants.

Conclusions: The study contributed to literature by showing that OW and HW camp participants differed in energy consumption not in PA or energy expenditure. In addition, the study showed that psychological need-support centered summer camp can positively impact OW adolescent girls' PA and eating behaviors and energy balance.

Effects of Coach-Created Motivational Climates on Athletes' Physical Activity Behavior

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Background/Purpose: Given that only about one-fourth of adolescent athletes meet the recommended physical activity guideline solely through sport (Leek et al., 2011), this study examined the direct and indirect effects of the coach-created motivational climates on high school athletes' moderate-to-vigorous physical activity (MVPA) and sedentary behavior (SB) during sport practices based on self-determination theory (Deci & Ryan, 1985). **Method:** Participants were 225 athletes ($M_{\text{age}} = 15.24$; 128 boys, 97 girls) from two high schools in the U.S. Following a prospective design, participants completed validated survey measures of coach-created empowering and disempowering climates as well as psychological need satisfaction and frustration. Four months later, participants' percentage of MVPA and SB time during sports practices were measured using accelerometers across three athletic periods. Path analysis was conducted to test the hypothesized model.

Analysis/Results: The hypothesized model demonstrated an excellent fit (Hu & Bentler, 1999), $\chi^2(4) = 1.41, p = .23$, CFI = .99, TLI = .97, RMSEA = .05, SRMR = .03, which accounted for 15.9%, 31.0%, 8.4%, and 2.0% of the variance in need satisfaction, need frustration, MVPA%, and SB%, respectively. An empowering climate had significant ($p < .05$) direct effects on need satisfaction ($\beta = .40$) and need frustration ($\beta = -.28$), while a disempowering climate had significant direct effects on need frustration ($\beta = .39$) and MVPA% ($\beta = -.28$). All indirect effects were nonsignificant.

Conclusions: Findings suggest that when coaches display more ego-involving and controlling behaviors, high school athletes tend to be less engaged and active during practice.

Effects of PE-Specific Inservice on Self-Efficacy Toward Teaching Elementary PE

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Background/Purpose: Included in the list of barriers to quality physical education, is the common criticism

that school and district professional development activities seldom consider the needs of physical educators. Frankly, most administrators fail to recognize the unique and challenging learning environment in which PE teachers function. Double class sizes, lack of equipment and administrative support have created an environment that has taken a toll on PE teachers. Being so marginalized has too often led to a demoralized and underperforming group of professionals. Only recently are school and district administrators recognizing the need to provide PE-specific training to their physical educators.

Self-efficacy, or the confidence with which a person feels they can successfully perform, has traditionally been measured as a single, overall indicator perhaps ignoring the nuances that may exist toward specific job-related tasks. This study proposes to measure self-efficacy toward discrete tasks as well as to form a composite self-efficacy score.

Therefore, the purpose of this study is to examine the effects of a professional development workshop designed to provide instruction on various PE-specific challenges on teacher self-efficacy toward (a) individual tasks and (b) teaching PE in general.

Method: Thirty-three PE teachers (15 males and 18 females) in a local school district participated in a one-day workshop providing strategies to meet self-reported challenges in their jobs. With IRB approval, participants read and signed letters of informed consent to complete the 32 item – 6 subscale Teaching Elementary Physical Education Self-Efficacy Scale (TEPESE) both pre and post.

Analysis/Results: Using SPSS, subscales means and a composite scores for pre and post responses were computed and examined for normality. Chronbach's alphas were computed to test subscale reliability. Correlation analysis was performed. Repeated measures ANOVA was used to examine the between (gender and experience) and within (pre to post) group differences with a Bonferroni adjustment.

Although males reported higher levels of SE, no significant gender effects were noted on overall SE. However, there was a significant within group difference across all genders, experience, and degree attained from pre-to-post. All reported an increase in their self-efficacy as a result of participating in this PE-specific training.

Conclusions: This group of physical educators responded positively to a professional development workshop that addressed their self-reported challenges. The TEPESE instrument was designed to measure both overall SE toward teaching PE but also to assess SE toward specific tasks. The flexibility of this

instrument has given greater insight to the SE processes of PE teachers. Gender effects, though not all significant confirm that females are more confident in their job performance than are males in a few of the specific areas measures. However, the most salient finding was that participants experienced an immediate, positive, and significant response to the district provided inservice suited to their needs. Results suggest that when administrators listen to teacher concerns and needs, and then provide support for training specific to those needs, the results are well received.

Evaluation of the Psychometric Properties of the Test of Gross Motor Development–Third Edition (TGMD-3) in Chinese Children

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Background/Purpose: TGMD-3 is designed to assess children's motor skill competency in locomotor skills (run, skip, hop, horizontal jump, gallop, and slide) and ball skills (two-hand strike, one-hand forehand strike, kick, dribble, catch, overhand throw and underhand throw). However, whether the TGMD-3 is a reliable and valid assessment tool used to evaluate Chinese children's fundamental motor skills remains largely unexplored. This study aimed to test reliability and validity of the TGMD-3 in Chinese children aged 3-10 years.

Method: Participants were 512 children ages 3-10 (\bar{x} = 7.5, SD = 2.9; boys = 259, girls = 253) from five cities in China with their parents' signed consent and their agreed assent. Prior to the data collection, the author of TGMD-3, Dr. Ulrich, came to China to conduct intensive TGMD-3 trainings through: (1) presenting the TGMD-3 testing criteria, protocols, and scoring; (2) guiding evaluators practicing use of the TGMD-3 testing sheet to assess a person's each skill performance for more than 40 hours; (3) taking 6 evaluators to 4 preschools and elementary schools to evaluate randomly selected five children's performance of each skill. After the interrater agreement reached higher than .80, the evaluators began to evaluate each participant's performing each skill with the TGMD-3 during a regular physical education (PE) class. After one week later, the evaluators re-assessed each participant's performing each skill in a regular PE class.

Analysis/Results: To test the reliability of the TGMD-3, the Cronbach Alpha coefficients of the locomotor skills, the ball skills, and the total skills were .90, .93, and .95, indicating a high level of internal consistency. Test-retest reliability had high ICC agreements for the locomotor skills (ICC=0.755), the ball skills (ICC=0.741), and total skills (ICC=0.743). To assess validity of the TGMD-3, the results of the IRT revealed that the testing item (skill) of the TGMD-3 had acceptable item difficulty values (range = 0.27 - 0.78) and acceptable item discrimination values (range = 0.38 - 0.49). The exploratory factor analysis yielded the dual-factor structure of the fundamental motor skills for TGMD-3, with 51.1% variance explained. Further, the confirmatory factor analysis showed the excellent model fit of the two-factor model ($\chi^2_{(65)} = 103.28$, $p < 0.001$, CFI = 0.960, TLI = 0.952, RMSEA=0.049, SRMR=0.043), indicating an acceptable construct validity of the TGMD-3.

Conclusions: TGMD-3 is a reliable and valid motor skill assessment tool that can be used to assess Chinese children's fundamental motor skills (FMS).

Gross Motor and Cognitive Development of Preschool-Aged Boys and Girls

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Background/Purpose: Executive function and gross motor skills are purported to be related. However, very few studies have examined this relationship within preschool-aged children. If executive function and gross motor skills are related, then difficulties within either domain could be transactional. Furthermore, significant associations between gross motor skills and executive function could indicate a bi-directional relationship with implications for school readiness. Thus, the purpose of this study is to examine the association between executive function and gross motor skills for boys and girls from low-income settings. A secondary purpose is to examine if any differences are present based upon biological sex.

Method: Boys ($n = 65$) and girls ($n = 50$), ages 3-5 years ($M = 3.86$, $SD = .52$), were recruited from an urban Head Start preschool center in the South. Participants ($N = 115$) completed the Heads Toes Knees Shoulders (HTKS), and the Test of Gross Motor Development-2 (TGMD-2) to assess executive function and gross motor skill competence respectively.

Analysis/Results: We conducted Pearson Product Moment correlations to assess the association between executive function and gross motor skills. There was a positive, significant association among HTKS and TGMD-2 scores, after controlling for age ($r = .33$, $p < .001$). Afterwards, we conducted a one-way ANOVA to assess differences for HTKS and based upon biological sex. Next, we conducted a one-way MANOVA to assess differences in both object control and locomotor skills also based upon biological sex. There were no significant sex differences for any variable of interest based upon sex ($p > .05$) except for object control skills ($F = 6.58$, $p = .012$, $\eta^2 = .06$).

Conclusions: Results from this study shed light into the relationship between executive function and gross motor skill development for young children. Additionally, there were no differences in the executive function skills for boys and girls. Thus, we can now hypothesize that cognitive and motor development may be related and might hold implications for school readiness within the vulnerable population of young children from low-income settings. Future research should replicate this study with a larger sample size and possibly explore these relationships in other settings.

Health and Fitness Indicators of Individuals With Intellectual Disabilities: Severity Differences

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Background/Purpose: Blood pressure and vital capacity are important health indicators for cardiovascular functions. Physical fitness is associated with longevity, quality of life, and physical functions. For individuals with intellectual disabilities (ID), while there has been substantial amount of research showing that they have poorer health and fitness indicators than their typical peers (Flygare et al., 2018; Lahtinen et al., 2007); there is lack of research examining these indicators among individuals with different severities of ID. Using a relatively homogenous sample of Chinese individuals with ID, this cross-sectional study examined the differences in health and fitness indicators among individuals with different severities of ID who completed a health and fitness screening.

Method: The participants included 215 individuals with ID (32.6% female) who completed a health and fitness screening for sport camp programs. The sample consisted of individuals with mild (26.1%), moderate

(37.2%), and severe (36.7%) ID. The health screening included blood pressure and vital capacity that were conducted by certified healthcare professionals as well as fitness measures of body fat percentage, balance, and strength. Body fat percentage was extrapolated through body height and weight, balance was measured through stork stand test, and strength by handgrip. To examine the cross-sectional differences in these variables among different severities of ID, we conducted multivariate analysis of covariance (MANCOVA), controlling for individual age and sex.

Analysis/Results: Prior to conducting MANCOVA, we checked Mahalanobis distance and P-P plot for normality, scatterplot for linearity, and residual Q-Q plot for homoscedasticity. The result showed that the severity of ID had a significant impact on the health and physical fitness indicators, Wilks' $\lambda = .46$, $F_{18,388} = 10.35$, $\eta^2 = .32$, $p < .01$. Subsequent univariate analyses showed significant differences in vital capacity ($\eta^2 = .25$, $p < .01$), body fat percentage ($\eta^2 = .04$, $p < .05$), balance ($\eta^2 = .32$, $p < .01$), and strength ($\eta^2 = .26$, $p < .01$); but there was no significant difference in systolic or diastolic pressure ($p > .05$).

Conclusions: The results showed that individuals with severe ID had significantly lower vital capacity than those with moderate ID, who had lower than those with mild disabilities. While those with severe ID had lower blood pressure than those with moderate and mild ID, the difference was not statistically significant. For physical fitness measures, while there was no significant difference between individuals with mild and moderate ID, those with severe ID had significantly higher body fat percentage than either of these two groups. Individuals with mild ID had significantly better balance performance than those with severe and moderate ID. Individuals with mild ID had significantly greater hand grip strength than those with moderate ID, who in turn had significantly higher strength than those with severe ID. Vital capacity and hand grip are sensitive health and physical fitness markers for severity of ID, controlling for individual age and sex.

How I Move: Girls' Movement Experiences in Their Daily Lives

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Background/Purpose: There is agreement in the literature that adolescent girls are often disengaged and marginalized from physical education. Although physical educators have made progress in creating physical

education curriculum that is appealing for girls, there is still a disconnect between physical education practices and the growing and diverse movement culture outside of school. This study explored adolescent girls' movement experiences as embedded in the social, cultural, and physical contexts of their daily lives. Particularly, this study aimed to explore how adolescent girls living in a rural area of northern California perceive and navigate movement within their sociocultural and physical environments.

Method: This qualitative study employed a visual methodology. Participants were 12 girls enrolled in a public high school in northern California. Data sources included participant-generated visual diaries and photo-elicitation interviews designed to capture girls' thoughts, feelings, and perspectives about movement in the context of their daily lives.

Analysis/Results: An inductive content analysis was used to analyze data from the visual diaries and interviews. Findings revealed that girls enjoy participating in a wide variety of physical activities, most predominantly dance, walking, outdoor pursuits, and team sports. Participant girls seemed to be heavily influenced by their families' physical activity habits and value being active with their peers. Finally, girls indicated feeling most comfortable being active at home, within their neighborhoods and outdoors.

Conclusions: Findings from this study provide valuable information about adolescent girls' perspectives on physical movement that can be integrated in the design of culturally and geographically relevant physical education curricula.

Impact of a Commercial Exergamer on Reducing Stereotypical Hand Movements of Children With Autism Spectrum Disorders

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Background/Purpose: Research demonstrates significant benefits of physical exercise and games; especially moderate to vigorous levels of activities. Numerous studies suggest such activity may be specifically useful to children with autism spectrum disorders (ASD). Recent reviews provide empirical support of benefits primarily among 'children' with ASD; which may be understandable since greater emphasis is given to early intervention. However, 'adolescence' is a critical period for establishing self-motivation toward a physically

active lifestyle for all populations. This intervention study is an attempt to provide support in filling that void with the direction of behavioral and self-determination theories.

Method: Low to moderate functioning adolescents with ASD (N=8), attending a local sports club participated in the study. Sex distribution was equal. Ages ranged from 11 to 18 (Mean ages: f=15.5; m=15). Participant families were from middle to high socio-economic status and were residing in an urban area. ABAB single-case research design was implemented. The independent variable was moderate to vigorous exercise that was conducted using commercial exergamers. Two participants were randomly assigned to intervention group each week. After the baseline program, all participants received intervention program (by week 4). Withdrawal applied for 2 weeks (9 & 10). Independent variable was tested once again on weeks 11 through 14.

For every week, 3 sets of 40-minute exergaming activities were recorded. Practice intensities were individually determined by MaxVO₂ capacities. As an operational definition, 30-59% of MaxVO₂ were considered moderate, and 60-100% were considered vigorous. From a pool of 300 games, 11 commercial games were picked by researchers after consultation with local coaches at the sports club; considering the stereotypical movements of each participant. Each student kept working with their individual coach under supervision of 2nd researcher and a research/activity coordinator.

Upper body stereotypical and repetitive movements were documented in frequency counts using video recordings. The movement forms included head/face, torso, arms and hands. They included a wide range of movements like rocking, mouth slap, etc.). 2nd researcher and research/activity coordinator gained 85% reliability on 10% of the overall video recordings before researcher, individual coaches and coordinator started full-coding. Individual coaches and coordinator reached a minimum of 80% reliability over all video recordings. To determine the impact on gross motor functioning and fitness levels, Bruininks Oseretsky (BOT2) and Eurofit was used (pre & post test differences).

Analysis/Results: Average stereotypical movement scores (female and male): A/Baseline: 72.62 & 48.66; B/Intervention: 29.61 & 28.96; A/Intervention withdrawal: 41.58 & 41.71; B/Reinstated intervention: 17.39 & 40.33 (20.27 if 1 outlier is excluded). Effect sizes are investigated using 3 nonoverlap methods: PND, PEM, PAND. Calculations supported the view that intervention is very efficient in reducing stereotypical movements; especially vigorous exercises. Motor and fitness improvements were negligible. Preliminary findings of

semi structured, in-depth interviews with families/coaches reveal increased exercise interest of participants.

Conclusions: This study endures the hypothetical premise that exercise using commercial exergamers may reduce the incidence of ASD stereotypical behaviors in the upper body and head.

Motives of Taekwondo Students' Parents for Taekwondo Training and Their Satisfaction With Taekwondo Training

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Background/Purpose: Taekwondo (TKD) is one of the most popular sports in many countries. Gleaning popularity from Olympic competition, action films, and mixed martial arts, TKD attracts a high number of people, regardless of age, gender, and nationality. According to the World Taekwondo Headquarters (Kukkiwon, 2017), approximately 9.9 million people all around the world have trained TKD, and its number has been growing continuously. Several researchers have discovered a number of positive effects of TKD training, which include improved self-concept and self-regulation (Duthie, Hope, & Barker, 1978; Lake & Hoyt, 2004) and decreased fighting, bullying and aggressiveness (Lakes & Hoyt, 2004; Turlson, 1986). TKD training is primarily provided in private Taekwondo schools so that parents' decision plays an important role for child's Taekwondo training. However, to date, there is a lack of understanding as to why parents want their child to learn Taekwondo and whether TKD education met the parents' expectations. Therefore, the purpose of this current study was twofold: a) to understand parents' motives in their child TKD training and b) to understand their satisfaction with TKD training.

Method: Six parents whose child (5 boys and 1 girl) has trained Taekwondo were recruited from a private Taekwondo school in Korea. The average age of the child was eleven years old, and the average years of TKD training were six years. All six parents participated in an individual audio-recorded semi-structured interview. All interviews were transcribed verbatim and analyzed by inductive content analysis to identify patterns or themes emergent from the data (Elo & Kyngas,

2008). Trustworthiness of the data was performed through member check, investigator triangulation, and peer debriefing.

Analysis/Results: In terms of parents' motives for their child's TKD training, two themes emerged from the interview data: a) physical strength development, b) confidence enhancement, c) parents' own experience. Inductive analysis revealed that parents wanted their child to learn TKD to enhance their child's physical strength and confidence. Another interesting finding was that many of parents wanted their child to learn TKD due to their personal experience with TKD. Since they learned TKD when they were young and experienced positive effects, they wanted their child to learn TKD. Regarding their satisfaction with their child's TKD training, two themes emerged from the data: a) enhanced physical strength, b) improved self-control, and c) enhanced social skill. The results found that parents observed their child's physical strength development and improved ability to control behaviors, which satisfied the parents.

Conclusions: This current study found that parents wanted their child to learn TKD for three reasons and are satisfied with their child's TKD training. These findings imply that TKD can be a content which can positively influence child development. However, TKD training, regardless of country, is primarily provided in a private TKD school, rather than PE class in public schools. This does not allow students who are from underprivileged family to receive the same benefits of TKD. Thus, PE teachers should consider to include TKD unit within PE curriculum.

Motor Skills and Levels of Physical Activity in Children With Autism Spectrum Disorders in China

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Background/Purpose: Autism Spectrum Disorders (ASD) is a neurodevelopmental disorder characterized by social and communication impairments as well as a wide range of behavior deficits. For years, motor disturbance reported in ASD has not been treated as a major core deficit because of the overwhelming problems in sociability and communication. Recent studies, however, reveal that motor deficits are fundamental and contribute to the core symptoms of ASD. Motor behaviors are associated with the symptoms of ASD.

Delays and deficits may both contribute to a typical development of movement skills by children with ASD. Enhancing motor skills and physical activity can potentially improve the overall symptoms of this population. However, limited studies have addressed motor behavior of children with ASD, especially in China. The purpose of this study was to evaluate motor skills and physical activity levels of children with ASD who were full-time students attending an autism rehabilitation school. In addition, gender differences on motor skills and physical activity levels were explored.

Method: 28 ASD children (21 boys and 7 girls; mean age of 7.25 ± 1.69) were recruited from one autism school in a large metropolitan area of Wuhan in China. Besides confirmed ASD diagnosis with Autism Diagnostic Interview-R (ADI-R), the included participants had no known physical disability and intellectual disability. Physical activity during 3 consecutive school days was measured with ActiGraph GT3X-BT accelerometer (Pensacola, FL). Fundamental motor skills were assessed with the Test of Gross Motor Development (TGMD-3). Descriptive, correlational analyses, and independent t-tests were conducted for the purpose of this study.

Analysis/Results: Based on age-specific cutoffs (Pate et al., 2006), we found that the children with ASD spent most of their time in sedentary activity ($M=42.25$ minutes/hour, $SD=2.79$ minutes) and light physical activity ($M=15.86$ minutes/hour, $SD=1.94$ minutes). Their participation in moderate to vigorous physical activity (MVPA) was very limited ($M=1.89$ minutes/hour, $SD=.77$ minutes). In terms of TGMD, both of their locomotor skills (raw score=16.82) and ball skills (raw score=15.20) exhibited much lower percentile scores compared to peers with typical development. The influence of TGMD on physical activity levels was not significant. Comparisons between boys and girls did not demonstrate any differences either.

Conclusions: Our findings demonstrated that the physical activity levels of children with ASD are much lower than the National guidelines. Their motor skills are also of concerns. Given the lack of safe, structured or unstructured sports and physical play outside school for this population, adding a physical education program into ASD schools can be an important component of intervention.

Perceived Motor Competence Mediates Motor Competence-Physical Activity Pathway for Children With Visual Impairments

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Background/Purpose: Children with visual impairments (VI) often report low levels of physical activity (PA) and motor competence (MC). Children with VI are also more likely to become overweight/obese. Greater understandings of factors which relate with PA for those with VI are needed. Perceived motor competence (PMC) is purported to mediate the relationship between MC and PA for children without VI. However, this mediational relationship has never been tested within children with VI. The purpose of this study is to test the hypothesized mediational relationship of PMC between the MC-PA pathway for children with VI.

Method: Children, ages 9-18 years, with VI self-reported demographics and completed the locomotor subscale of the Test of Gross Motor Development-3 for MC, the Self-Perception Profile for Children for PMC, and the Physical Activity Questionnaire for Children/Adolescents for PA.

Analysis/Results: Regression analyses followed the stepwise procedure as described by Baron and Kenny. MC was a significant predictor of PMC ($b = .018$, $SE = .006$, $t [117] = 2.918$, $p = .004$). With PMC as the mediator, the relationship between MC and PA was no longer significant ($\tau' = .123$, $p = .180$), indicating the (partial) mediating effect of PMC between MC and PA ($\alpha\beta = .005$, $z_{\text{Sobel test}} = 2.999$, $p = .003$; 38.3% mediation).

Conclusions: PMC is a significant mediator between MC and PA for children with VI. To improve PA of those with VI, future interventions should take an integrated approach to influence MC and PMC.

Perceptions of Universally Designed Adventure Education

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Background/Purpose: Substantial research regarding the social benefits of participating in Adventure Education (AE) exists. However, little to no research exists regarding the benefits of students with disabilities (SWD) and their nondisabled peers participating in this curricular model together. Therefore, the purpose of this study was to investigate the effects of a universally designed adventure education program on students of varying ability levels.

Method: Five qualitative data collection techniques were employed to gain a rich understanding of the long term benefits of SWD and their nondisabled peers participating in a high school adventure education program. Data collection included semi-structured formal interviews, informal follow-up interviews, observations of a current program taking place, document analysis of reflection journals written by participants, and narrative descriptions written by former participants. Participants included alumni of a universally designed adventure education (UDAE) program, parents SWD who engaged in the program, and faculty members of a school district who initiated or supported the implementation of the program. To ensure trustworthiness and credibility, the author employed member checking following the completion of formal interviews, peer review of interview questions, searching for discrepant and negative cases, and triangulation of data collection sources.

Analysis/Results: Analysis of data was ongoing throughout the study taking place. Data analysis began with open coding of all data identifying the long term benefits of participating in UDAE followed by inductive analysis and constant comparison to develop categories. After the development of categories, the author collapsed them into three themes. A thematic coding manual was developed and distributed to two university professors with expertise in qualitative research for feedback and clarification. Themes developed included Generalization of Teachable Moments; Sense of Community; and Changing Life Perspectives. Findings from multiple data sources depicted long-term engagement involving physical activity (PA), Special Education, Adapted Physical Education, and Adventure Education/Outdoor Pursuits amongst multiple populations of individuals. Altered perceptions were frequently echoed throughout the results and described positive feelings between SWD and their nondisabled peers.

Conclusions: Participation in UDAE programming during high school Physical Education can enhance positive feelings between individuals of varying populations that transition into life after graduation. This includes involvement in supporting SWD as a career, maintaining a physically active lifestyle, and the ability to communicate and interact with people of different backgrounds within multiple environments.

Psychometric Properties of the BREQ-3 in College PA Classes

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Background/Purpose: In self-determination theory (SDT; Deci & Ryan, 1985, 2000), motivational regulations represent different motives that define the reasons why individuals practice and sustain their participation in exercise and physical activity (PA) (Hellin, Moreno, & Rodriguez, 2004). Six motivational regulations are conceptualized as a continuum ranging from nonself-determined regulation to completely self-determined regulation, and they are amotivation (AMO), external regulation (EXT), introjected regulation (ITO), identified regulation (IDN), integrated regulation (ITG), and intrinsic regulation (INT), respectively. The Behavioral Regulation in Exercise Questionnaire-3 (BREQ-3; Wilson, Rodgers, Loitz, & Scime, 2006) has emerged as a primary measure assessing them. However, BREQ-3 has not been validated in college physical activity settings. This is a gap we must address in our effort to promote physical activity among college students. Therefore, this study examined the psychometric properties of BREQ-3 in a college physical activity setting. Results of the study can advance research on motivational regulations and physical activity behaviors.

Method: Participants were 517 undergraduate students aged 17-26 years ($M = 20.31$ years, $SD = 1.33$) enrolled in PA classes at a large research university. They were 47 (9.1%) freshmen, 126 (24.4%) sophomores, 121 (23.4%) juniors, 214 (41.4%) seniors, and 9 (1.7%) 5th year students. Ethnically, the sample consisted of 340 (65.8%) Caucasian American, 100 (19.3%) Hispanic American, 33 (6.4%) Asian American, 20 (3.9%) African American, and 20 (3.8%) others. The BREQ-3 (Wilson et al., 2006) consisted of 24 items with four items assessing each of the six motivational regulations. During regularly scheduled physical activity classes, students completed BREQ-3, responding to all items on a 7-point Likert scale, ranging from 1 (*Not at all true of me*) to 7 (*Extremely true of me*).

Analysis/Results: Initial confirmatory factor analysis (CFA) of the BREQ-3 revealed a marginal fit of the 6-factor model and data ($\chi^2_{(237)} = 763.320$, CFI = .895, TLI = .878, RMSEA = .066, SRMR = .065). Factor loadings ranged from .516 to .917 and factor correlations ranged from -.406 to .853. Modification indices suggested removal of the IDN item "I get restless if I don't participate regularly." and path additions among three remaining IDN items. The second CFA with remaining 23 items was conducted and results revealed a good fit between the model and data ($\chi^2_{(213)} = 475.957$, CFI = .945, TLI = .934, RMSEA = .049, SRMR = .051). Cronbach's *alpha coefficients* for the AMO, EXT, ITO, IDN, ITG and INT scores were .813, .786, .779, .678, .848, and .848, respectively.

Considered together, the modified BREQ-3 demonstrated acceptable psychometric properties.

Conclusions: Similar to previous research (Liu, Chung, Zang, & Si, 2015; Markland & Tobin, 2004), one IDN item was found problematic in this study. After the removal of this item, both CFA and Cronbach's internal consistency analysis supported the validity and reliability of the modified BREQ-3 among this group of college students. Based on this finding, we recommend that the modified BREQ-3 be used for future SDT research on college students in physical activity settings.

Reconstruction of ERS for High School Students Utilizing Rasch Model: Known Group Difference Validity as Physical Education Classes Participation

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Background/Purpose: Ego-resilience scale (ERS) was developed by Block and Kremen (1996) to investigate how well people recover from the environmental change or difficult situations. Studies indicated participation in physical activities and exercise can be the positive prediction of ego-resilience. More specifically, active participation in physical education classes among youth affected ego-resilience positively. (Han & Heo, 2013). However, little studies have been aimed that ERS would be the appropriated questionnaire to utilize for high school students. Furthermore, the purpose of this study was to calibrate the ego-resilience scale (ERS) for high-school students by known group difference validity as the active participation in physical education classes or not. It would be the reasonable evidence of the know group difference validity if the ERS has the significant difference between categorized physical activity group. The Rasch partial credit model calibration was applied to examine: (1) rating scale fit, (2) item fit, (3) differential item functioning (DIF), and (4) dimensionality.

Method: ERS is composed of the 14 ego-resilience items on a 4-point Likert scale. The scale was administered to total 2011 (men: 1014, women: 997) high school students in Korea. (1) The rating scale fit was determined by step calibration index that increased step by step in each item. (2) Item fit was determined by Infit and Outfit statistics (≥ 0.60 and ≤ 1.40). (3) The

DIF was applied to examine the variation between male and female students by using DIF contrast index statistics (≥ 0.43) (4) The dimensionality of scale was determined by the Principal Component Analysis of Rasch residuals (Rasch PCA) that show unidimensionality as the unexplained variance in 1st contrast index (≤ 3.00). One-way ANOVA was used to establish the known group difference validity evidence of the ERS through SPSS 22.0 statistical software. Alpha level was set at 0.05. A statistically significant mean difference in ESR developed between the active and passive participation groups of physical education classes would provide the known group difference validity evidence for the ESR.

Analysis/Results: The results provided that the current 4-point Likert scale was appropriated survey methodology for the ERS's all items. One item had over standard item fit (infit=1.40, outfit=1.47). No item was selected as the DIF between sex. Furthermore, the results indicated that 13 items were finally selected for the EPS for high-school students. The Rasch PCA provided evidence that the items had unidimensionality (unexplained variance in 1st contrast index = 2.26). There was a statistically significant mean difference in the ESR score between categorized the group, $F [(1, 2009) = 48.210, p < 0.001]$. This result supported the known group difference validity evidence of the EPS.

Conclusions: Based on the results of Rasch partial credit model calibration, this study suggests the EPS with 13 items for high-school students in Korea. This EPS can be utilized to assess the ego-resilience and provide health information to high-school students. In addition, the newly constructed EPS for high-school students should be validated with another sample to increase external validity.

Relationship Between Fitbits and Pedometers in Monitoring Elementary Students' Activity

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Background/Purpose: The purpose of this study was to determine if there is a significant ($p \leq .05$) relationship between Fitbit Charge HR and New-Lifestyles (Yamax) Digi-Walker SW-200 activity trackers' step data worn by elementary students. A secondary purpose was to determine which type of tracker is best for elementary students to use for tracking steps and their

administrative feasibility. This study is one of several from the project, Enhancing the Fitness and Academics of Children using Technology in the Schools (Enhancing the FACTS).

Method: Seventy fourth grade students from a rural elementary school whose parent/s or guardian/s gave consent participated in the study. The students wore both activity trackers once a week during the day they had physical education. We met the students at their homeroom at 8:00 a.m. the days that class was scheduled to have physical education to help the students put on the Fitbits and Digi-Walkers and then again during physical education to help them take off the activity trackers. By the second week, the students no longer had to have assistance to put on the Digi-Walkers; however, all but two students had to have assistance to put on the Fitbits throughout the study, and many needed assistance in taking off the Fitbits. Ten Digi-Walkers were replaced when the plastic backing cracked or broke off. The students were encouraged to look at, compare, and monitor their steps, heart rate, calories, etc. during recess and physical education but warned about doing so during class. Three Fitbits were taken away from students during the first two weeks of the study, but once the “novelty” wore off, the classroom teachers reported no problems. Although asked not to push the Digi-Walker reset button, 168 samples could not be used because students pushed the reset button at some point during the day. Over the course of 12 weeks, we collected 593 paired samples.

Analysis/Results: At the end of 12 weeks, we applied the step data from the 593 paired samples to an Intra Class Correlation and found a significant relationship ($r = .923, p < .001$) between the activity trackers.

Conclusions: There is a very high and significant direct correlation ($r = .923, p < .001$) between steps recorded by the Fitbit Charge HR and New-Lifestyles Digi-Walker SW-200. Even though none of the Fitbits broke during the study and none of the step data gathered by the Fitbits were lost, because the Fitbit Charge HR is six times more expensive than the New-Lifestyles Digi-Walker SW-200 and, for the most part, requires an adult to put it on and off a child, its administrative feasibility in these respects is less than the Digi-Walker. The administrative feasibility of the Fitbit is also lessened by the time and equipment it takes to download and charge the Fitbits. These are most likely some of the reasons Fitbit does not recommend their product for children.

School Sports Participation in Children With Disabilities

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Background/Purpose: School sports participation is beneficial for children (Martin, Balderson, Hawkins, Wilson, & Bruner, 2018) including an increase in commitment to school-related work (Marsh & Kleitman, 2003) and lower depression and stress (Jewett et al., 2014). The United States Government Accountability Office (GAO) found that schools did not provide their students with disabilities with equal opportunity to be involved in school sports participation (GAO, 2010). In the response to the report, US Department of Education released a policy statement that ensures schools provide children with disability with an equal opportunity for extracurricular activity participation in 2013. It is important to understand how the policy has affected in sports participation among children with disabilities. Therefore, the aims of this study was to investigate the prevalence of sports participation among children with disabilities since 2013. As a secondary purpose, the relationship between sports participation and gender was also examined to understand the influence of the title IX.

Method: Secondary data analysis was conducted using 2013 - 2014 and 2015 - 2016 National Health and Nutrition Examination Survey. The surveys included a stratified random sample of 20134 individuals from US population. This study exacted 4416 children (aged 5 to 15 years; 2267 boys and 2149 girls) using two questions: (a) participating in school sports and (b) receiving special education service. Of the sample, 509 children with disabilities were identified. Variables extracted from data were age, gender, and participation in school sports. Descriptive statistics including confidence intervals were used. Binary logistic regression employed to answer the research questions.

Analysis/Results: Overall, 36.9% children (95% CI = .36 to .38) participated in school sports. About 30% children with disabilities (30.1%; 95% CI = .26 - .34) participated in school sports while near 38% of children without disabilities (37.8%; 95% CI = .36 - .39) participated in school sports. A chi-square test result indicated that children with and without disabilities did not equally participated in school sports, $X^2(1) = 11.60, p < .01$. In addition, girls were less likely to participated in

school sports than boys, $X^2(1) = 6.94, p < .01$. The result of logistic regression revealed that children with disabilities were 1.49 times less likely to participate in school sports than children without disabilities (OR = 1.49; 95% CI = 1.22 – 1.83) after adjusting gender and age effect. Also gender differences were still observed. Boys participated school sports more than girls, 38.8% (95% CI = .37 - .41) and 34.9% (95% CI = .33 - .37), respectively. Girls were 1.23 times less likely to participate in school sports than boys (OR = 1.23; 95% CI = 1.08 – 1.39) after adjusting disabilities status and age effect.

Conclusions: Despite government policies to promote school sport participation, our finding suggested that there is discrepancy of school sports participation between children with and without disabilities. Furthermore, girls are less likely to engage in school sports compared to boys. Efforts to promote school sports participation targeting children with disabilities and girls should be warranted.

The Influence of a Developmental Kicking Intervention for Young Children With Autism

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Background/Purpose: Children with autism spectrum disorder (ASD) face many challenges in physical education that include lower levels of motor skill development/motor coordination compared to typical peers without disabilities (Berkeley, Zittel, Pitney, & Nichols, 2001; Fournier, Hass, Naik, Lodha & Cauraugh, 2010). The combination of inadequate motor and social/communication skills make it difficult for children with ASD to fully participate in physical education and sport activities with peers without ASD (Schwartz, Billingsley, & McBride, 2005). The development of FMS in the early childhood years are critical to a child's development as they form "the base camp" to the mountain of motor development (Clark & Metcalfe, 2002) and FMS are also considered "the ABCs of movement" (Gallahue et al., 2012). Thus, it is particularly concerning that children with ASD demonstrate low FMS and seem to struggle with traditional instructional approaches in physical education (Sherrill, 2004).

The purpose of this study was to examine the influence of a developmentally aligned kicking intervention on the kicking skills of young children with ASD as compared to an activity-based kicking approach condition.

Method: This single subject, multiple baseline across participants study involved five 1st to 2nd grade

children with ASD. There were two phases: Baseline consisted of general kicking activities taken from elementary methods textbooks, and Intervention involved a Developmentally Aligned Kicking instruction. All participants started with Baseline activities, then Participant 1 was moved to Intervention, followed by Participants 2 & 3, and finally 4 & 5. To measure student kicking performance, there were three dependent measures including (a) percentage of correct trials in critical elements (the primary dependent measured as daily basis) and (b) two outcome dependent measures (TGMD-2 kicking subtest and stage level of kicking developmental sequence). Data for these measures were collected four times: 1) *Pretest*, 2) *End of Baseline*, 3) *Post Intervention*, and 4) *Retention Test*.

Analysis/Results: These data were plotted and analyzed according to single subject procedures with visual analysis including level, trend and variability. Both the inter-observer agreement and the fidelity checklist showed more than 90% agreement. The results showed that there was an immediate change once the intervention was introduced across all the study participants.

The study demonstrated an improved level of kicking performance during the intervention and that performance was stable or increasing over time. Additionally, the two outcome measures captured qualitative improvements in kicking performance of participants across pretest, end of the baseline, post-intervention, with a slight drop in kicking performance at the retention test 3 weeks following the intervention. Overall, the results suggest that Developmentally Aligned Kicking instruction bring about improvements in kicking performance for young children with ASD.

Conclusions: Developmentally Aligned Kicking instruction is a valuable pedagogical approach to improve the kicking performance of young children with autism.

Use Deep Learning to Classify Outdoor Terrain Categories During Walking Task

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Background/Purpose: Falling is the one of the leading causes of nonfatal injuries. Although majority of indoor built environments are with flat surfaces, uneven or irregular (icy, slippery, etc.) surfaces are commonly seen in the outdoor and literature shows that irregular

terrains could challenge human motor control system and alter gait performance which induce different level of falling risk. However, results from these laboratory studies are difficult to apply in the real world because the sensing technologies need complex setup. It remains unknown if the influence of real world walking surface irregularity on human gait can be detected with wearable devices such as Inertial Measurement Unit (IMU) sensors and artificial deep neural network (DNN). Also, in a real-world context in which only a single-sensor may be available, the optimal sensor placement location for this application is still unknown. **Method:** Ten young healthy adults volunteered for this pilot study. Participants walked six times on flat even ground, flat uneven cobble stone ground and grass field (i.e. 18 trials in total) wearing 2 IMU sensors (sensor 1: lower back; sensor 2: right ankle). These surfaces were presented in a randomized order. Next, all data were scaled and segmented to same size, because DNN models require the inputs of same dimension. Specifically, all time series were 2 seconds long that could capture 1-2 full gait cycles. Among all 1136 time series, 907 were randomly selected to train the DNN model which the remaining 229 were saved as testing set.

Next, DNN models with double convolutional layers, a max pooling layer and fully connect layer were trained with TensorFlow and Keras using Python programming language. Models were trained in a fully-supervised way and categorical cross-entropy function was applied as the loss function. Adam was applied as the update rule. Two DNN models were trained in total: model 1 was using outputs from the lower back sensor while model 2 was using outputs from the right ankle sensor.

The performance of the models was evaluated with the testing data set. Specifically, prediction accuracy, precision, recall and f1-score were calculated and compared.

Analysis/Results: Both two DNN models can predict the irregular walking surfaces with good accuracy while model 2 performs (i.e. sensor was placed on right ankle) better than model 1. Specifically, DNN model 2 reported an accuracy of 97.8% (224/229 trials correctly classified), precision and recall of 97.9% and 97.6%, and an f1-score of 97.8%. DNN model 1 reported an accuracy of 88.2%, precision and recall of 88.5% and 88.3%, and an f1-score of 88.4%. The lower extremities mainly absorb the effects of ground irregularity and keep the upper body relatively stable. Therefore, sensor on the ankle in this study is easier to detect the gait alteration when walking on irregular surfaces.

Conclusions: Results from this pilot study demonstrate the strong strengths of DNN models and show their

promising potential for future implementation in human gait analysis. In addition, a more distal sensor location may induce higher possibility of recognizing gait alteration caused by walking surfaces.

Validation and Invariance of Two Shortened Physical Activity Enjoyment Scales

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Background/Purpose: Enjoyment is important to physical activity (PA) as it is the most frequently reported reason why youngsters participate in activity. PA enjoyment was also found either directly related to or mediated the intervention effects on PA engagement. There are, however, some inconsistent findings, which may partially due to the measurement issues in PA enjoyment. For example, a popular PA enjoyment scale (PACES), is a unidimensional scale including nine positively and seven negatively worded items. The major limitation of this bipolar instrument is related to the method effect which can be resolved by excluding either positively or negatively worded items. Several studies have validated the shortened scale (S-PACES) including only the negatively worded items. Comparisons between the two shortened versions (positively worded only versus negatively only items), however, have not been conducted elsewhere. Thus, the purposes of this study were to (a) validate the two shortened PACES; (b) examine the measurement invariance of both scales across gender; and (c) test the predictive validity of both scales.

Method: The participants were 6th to 12th grade students who enrolled in either middle or high schools located in the South Georgia region ($N = 505$; 44.4% for boys; mean age = 14.5 years, SD = 2.5 years). PA enjoyment was measured using the revised PACES. Two shortened PACES were then analyzed independently with each one includes either positively or negatively worded items. The participants were assessed on weekly moderate to vigorous PA (MVPA) using the International Physical Activity Questionnaire – short form (IPAQ-S).

Analysis/Results: Confirmatory factor analysis (CFA) was used to examine the validity of both scales. Measurement invariance across genders was tested at configural, metric, and scalar levels. The direct effects of PA enjoyment on weekly MVPA was examined for both scales using structural equation modeling (SEM).

CFA tests revealed one-factor model for both scales with good model fit (GFI, TLI, and CFI > .90; RMSEA < .06; SRMR < .08). All items' standardized factor loadings from both scalars were larger than .60 and statistically significant. The shortened PACES with seven negatively worded items was found invariant across genders at configural, metric, and scalar levels ($\Delta\text{CFI} < .01$). The shorten PACES with nine positively worded items was invariant across genders at configural and metric ($\Delta\text{CFI} < .01$), but not scalar levels ($\Delta\text{CFI} > .01$). Finally, both scales were significantly related to weekly MVPA (standardized regression coefficients = .35 to .37).

Conclusions: Both shortened PACES are unidimensional and demonstrate good model fit. In addition, findings support the predictive validity of both scales. Finally, researchers need to be cautious when using the shortened PACES with only positively worded items for mean comparisons between genders.

Exercise Science

Body Fat, Weight Training, and Mental Wellness Among College Students

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Background/Purpose: Physical activity (PA) and sedentary behavior (SB) have strong associations with physical and psychological wellness. Research shows college and university students experience undesirable mental and physical health changes, including increased depression, anxiety, stress, and percentage body fat (BF%) (Nelson et al., 2008). College-age individuals are an important but understudied group relative to health outcomes, as increased adverse health conditions in early adulthood result in increased risks of negative health conditions throughout the lifespan (Ng et al., 2014). It is important to study the relationship between psychological and physical well-being in this group so that a well-rounded understanding of wellness can be developed.

Method: The Leisure and Physical Activity (LPA) survey was administered to 65 college-aged students (39 female) who also completed the Profile of Mood State (POMS-C), Depression Anxiety Stress Scale (DASS-21), and body composition testing via air displacement plethysmography. The LPA is a valid and reliable (Bellar, 2014) self-report instrument measuring the frequency and duration of PA, including days/week and

about durations of aerobic, weight training exercise, and leisure behaviors such as video gaming. Participants reported to the laboratory in the morning hours after an overnight fast, then completed the LPA, DASS-21 and POMS-C surveys and body composition testing. Differences in depression, stress, anxiety and total mood disturbances were examined via ANOVA and compared by PA/leisure behaviors reported on the LPA. Tukey's HSD post-hoc tests were conducted to determine between group differences. Associations between body composition and psychological variables were evaluated by Pearson's *r* correlations. Statistical significance was set a priori at $p < 0.05$.

Analysis/Results: When reported stress was examined by LPA survey responses, significant differences were noted for the number of days of weight training reported per week ($F=5.22$, $p < 0.001$). Post-hoc testing revealed significant differences with 0-2 days of weight training being associated with higher stress than 3-5 days ($p < 0.001$), but not different than 6-7 days ($p = 0.693$). Total mood disturbances (POMS-C) were significantly different by reported minutes of video gaming per session ($F=4.65$, $p < 0.001$), with significant differences observed between those reporting more than 30 minutes per session and those reporting 16-30 minutes ($p = 0.019$). Participants' BF% was significantly different for the number of days of weight training ($F=3.56$, $p = 0.035$) and duration of training sessions ($F=6.11$, $p = 0.003$), with those reporting >30 minutes per weight training session having significantly lower BF% than those reporting 16-30 min ($p = 0.013$) and 0-15 min ($p = 0.025$), respectively. Participant BF% was also significantly correlated to age ($r = -0.265$, $p = 0.037$) and stress ($r = 0.300$, $p = 0.018$), and age was also significantly associated with depression ($r = 0.344$, $p < 0.001$).

Conclusions: The results of this study suggest that colleges and universities should increase stakeholders' awareness of the potential positive benefits of activities such as weight training on psychological and physical wellness. With a large number of colleges and universities investing in recreation centers, it is important to also include programming highlighting the numerous benefits of resistance exercise on body composition management, especially given the associations between age of college students, body fat percentage and depression.

Brisk Walking: Body Fat Percent and Absolute Versus Relative Intensity

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Background/Purpose: Walking at a speed of 3.5 mph is brisk walking (Ainsworth, 2003), which is a popular type of exercise among young adults. This study examined (a) how %BF would be related to heart rate (HR), maximal HR% (%HRmax) and HR reserve% (%HRR) and (b) the relationship between absolute intensity and relative intensity in brisk walking (3.5 mph) among university students.

Method: The three-site skinfold measure was administered to 176 university students (mean age: 20.82±1.49; 102 males and 74 females) in the US and converted to %BF using the conversion tables by Jackson et al. (1985). The ACSM %BF satisfactory ranges (2014, 10%-22%BF for men and 20%-32%BF for women) were used to divide participants into three %BF categories: Normal, Lean, and Obese. In addition, resting HR (after lying on the floor for five minutes) was measured with HR monitors (Sigma PC26.14) to calculate HRR. All participants then walked on treadmills for three minutes at the speed of 3.5 mph while wearing their HR monitors, and their HRs at the end of the three-minute walking were recorded and used to calculate %HRmax and %HRR. One-way MANOVA was used to examine differences in HR, %HRmax, and %HRR in the three-minute walking among the three %BF groups. Also, ACSM intensity classifications based on %HRmax and %HRR (ACSM, 2014) were used to determine the relative intensity in the 3.5-mph walking.

Analysis/Results: There were 90 participants in Normal, 64 in Lean, and 22 in Obese group. No age difference ($p > .70$) was found among the three %BF groups (Normal 20.71±.90, Lean 20.94±2.79, Obese 20.95±1.50). However, significant differences (p values ranged from .000 to .005) were observed in HR, %HRmax, and %HRR at the end of the three-minute walking in all the three pairwise comparisons: (a) in HR: Lean (102.72±10.04) versus Obese (122.23±9.21), Lean versus Normal (113.07±11.95), and Normal versus Obese; (b) in %HRmax: Lean (51.62±5.15) versus Obese (61.40±4.54), Lean versus Normal (56.73±5.99), and Normal versus Obese; and (c) in %HRR: Lean (28.13±7.52) versus Obese (38.38±5.18), Lean versus Normal (33.47±7.40), and Normal versus Obese. In addition, when compared with %HRmax intensity classification, the 3.5-mph walking was a very light-intensity PA ($< 57\%$ HRmax) for the Lean and Normal, and a light-intensity PA for the Obese ($< 64\%$ HRmax). As for %HRR classification, the 3.5-mph walking was a very light-intensity PA ($< 30\%$ HRR) for the Lean and a light-intensity PA ($< 40\%$ HRR) for the Normal and Obese.

Conclusions: During brisk walking at the speed of 3.5 mph, lean individuals demonstrate significantly lower

HR, %HRmax, and %HRR than normal and obese individuals; and normal individuals show significantly lower HR, %HRmax, and %HRR than obese individuals. The %BF classified with ACSM %BF ranges has significant impact on relative intensity experienced among university students in brisk walking. Further, while the 3.5-mph walking is a moderate-intensity PA in terms of absolute intensity (a 4.3-MET PA), it is a very light-intensity or light-intensity PA for young adults in terms of relative intensity classified by ACSM %HRmax or %HRR intensity category.

Comparison of Three Energy Expenditure Measures: Correlations and Differences

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Background/Purpose: While complicated and expensive equipment and apparatuses are used in lab settings to measure energy expenditure (EE) associated with physical activity (PA) for research purpose, the convenient tools such as smartphone apps and pedometers are widely used among exercisers to monitor their daily EE of PA for health purpose. This study examined correlations and differences in measuring EE of PA among three convenient approaches.

Method: Participants were 150 university students (mean age: 20.92±1.20; 90 males) who walked on treadmills for 30 minutes at a speed of 3.0 mph. Each participant wore a pedometer (Yamax SW-200) and a heart rate monitor (Sigma PC26.14) while walking. The pedometer and heart rate monitor were set to measure EE of PA, including the entry of the newly-measured body weight. At the end of the 30-minute walking, the EE in calories indicated in the pedometer and heart rate monitor were recorded. In addition, the formula, METs × PA hours × body weight in kg (Ainsworth, 2003), was used as a third tool to calculate EE. Given the 30-minute walking at the speed of 3.0 mph (a 3.5-MET PA) in this study, the specific formula used was $3.5 \times 0.5 \times$ body weight in kg. Correlations and differences in EE (calories) among the three EE measures were examined with bivariate correlation and one-way within-subjects ANOVA respectively. Given that EE of PA is mainly determined by PA intensity, PA duration, and body weight, data analysis was conducted with sexes combined.

Analysis/Results: The significant correlations ($p < .001$) were identified with medium to large correlation coefficients in each of the three bivariate

correlations in EE. Specifically, the r value for EE measure was .669 between the heart rate monitor and the pedometer, .418 between the heart rate monitor and the formula, and .534 between the pedometer and the formula. With respect to the ANOVA results, the overall test indicated a significant difference among the three measures, with $F(2, 148) = 22.86$, $p < .001$, and $\eta^2 = .236$. The follow-up paired-samples t -test showed significant differences ($p < .001$) in EE in all the three pairwise comparisons: heart rate monitor (159.59 ± 50.03) versus pedometer (144.39 ± 37.01), heart rate monitor versus formula (133.92 ± 29.87), and pedometer versus formula. When the Bonferroni procedure was used to control for family-wise Type I error across the three pairwise comparisons at the .05 level, the p value of .001 is less than $\alpha = .05/3 = .017$.

Conclusions: While correlations are significant among the three different tools, significant difference exists between any of the two tools in measuring EE. For the exerciser who enjoys monitoring his/her EE of PA, it is wise to use one tool consistently to better understand day-to-day variation of EE of PA within the individual. When EE is compared between individuals, the comparison should be made with the same tools.

Effects of RPE Training and Fitness on Adolescents Estimating Intensity

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Background/Purpose: It is human nature to moderate exercise intensity according to how one “feels.” Too hard, slow down. Too easy, pick it up. The validity of perceptions of intensity and application of them to adjust exercise to stay in a training zone has been studied in adults and to a lesser extent children and adolescents. In this study, feelings (perceptions) were captured and quantified using the Borg scale of ratings of perceived exertion (RPE) which anchors word descriptors to numbers. Heart rate has traditionally been used as a physiological marker of exercise intensity; in this study both HR and RPE were used to train subjects to recognize the “feeling” of exercise intensities. The central purpose of this research was to investigate the effects of instruction (RPE and HR) on the ability of adolescents to correctly estimate six exercise intensities while cycling at regularly increasing workloads. Two

secondary purposes were to investigate the relationship of RPE and HR in adolescents, and to investigate differences in RPE in adolescents of different fitness levels. Gender was also considered.

Method: Adolescent subjects (26 female, 22 male) wearing a heart rate monitor (HRM) pedaled a bicycle ergometer at 80 rpm at workloads that elicited heart rates of 40, 50, 60, 70, 80 and 85% of HR reserve. During three training sessions, subjects assessed their exercise intensity by estimating their heart rate (without palpating it or looking at a device) at periodic intervals. One half the group also used RPE to assist them in estimating exercise intensity. Subjects received immediate heart rate knowledge of results (KR) and were shown on a chart their position in relation to their aerobic target zone. During the fourth session, a criterion test based on set workloads rather than percentages of HR reserve was given. The dependent variable was the difference between stated HR and actual HR at workloads that elicited heart rates of 40 – 85% of HR reserve. Fitness level was determined using the one mile run.

Analysis/Results: A 2×2 ANOVA for RPE training and fitness level revealed a significant main effect for training only at 70% intensity. The heart rate only group made less error than the RPE-HR group. No fitness level main effect or interactions occurred. Correlations between HR and RPE were low to moderate.

Conclusions: With or without RPE instruction, after three trials subjects were able to make fairly accurate heart rate estimates. RPE instruction did not affect the subjects’ ability to estimate intensity using heart rates. It may be that both trying to select a heart rate and a rating of perceived exertion required subjects to consider how they felt. This might explain why subjects who received the additional RPE instruction did not perform better than those receiving only HR instruction. This study found that intentional training increased the ability of adolescents to estimate exercise intensity; information useful for adjusting intensity to stay within a training zone. A follow-up could examine whether feedback from popular fitness bands would act like intentional training.

Examination of Cardiovascular Endurance Performance of Homeschool Students: An Exploratory Study

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Background/Purpose: Cardiovascular endurance is an important part of health related physical fitness. The level of cardiovascular endurance is a good indicator of cardiorespiratory function. High level of cardiovascular endurance leads to reduction in risk of cardiovascular disease. School aged students should have appropriate age-related level of cardiovascular endurance. The purpose of this study was to examine cardiovascular endurance performance of homeschool students ages 8-17.

Method: Participants of the present study included 62 homeschool students ages 8-17 from a city located in the Northeastern region of the country. All participants were volunteered to participate in the study, and a written permission was obtained from the parents of the participants prior to the beginning of the study. A standard pacer test was administered to homeschool students ages 8-11 ($n=31$) and 12-17 ($n=31$), respectively. The Pacer test was conducted at the end of a regular physical education class on a fieldhouse basketball court with cones set up 20 m apart. Participants continuously ran between two lines (20 m) in time to recorded beeps. Data were collected following a standard Pacer test procedure.

Analysis/Results: Two separate One-Sample t tests were conducted to examine differences in mean Pacer test lap score of each age group with that of the national norm, respectively. The results of the tests revealed a significant ($p=.001$) difference in mean Pacer test lap score between the homeschool students ages 8-11 ($M=33$, $SD=18.62$) and that of the national norm. In addition, a significant ($p=.0001$) difference in mean Pacer test lap score was also found between the homeschool students ages 12-17 ($M=42$, $SD=10.81$) and that of the national norm.

Conclusions: Both age groups of the homeschool students demonstrated a lower level of cardiovascular endurance performance than their respective national norm. The findings of the present study suggest that homeschool students involved in this study have a lower level of cardiorespiratory function and a higher risk of cardiovascular disease in comparison to the suggested national standard. While the findings of the present study are preliminary, more attention should be directed to helping homeschool students develop appropriate level of cardiovascular endurance.

Interrelationships Among Various Test Performances for Upper Extremity Strength

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Background/Purpose: While program effectiveness studies on strength abilities are widely available, there is limited data on the relationship and transferability among maximal strength, muscular endurance, and muscular power of the upper extremities. The purpose of this study was to examine the relationship among commonly used test exercises that measure various strength-related abilities in a pushing movement. In addition, the study also aimed to discover whether body-weight strength training causes any changes in the relationships among the test exercises.

Method: A six-week, three training session per week protocol was administered to 46 college-aged individuals (mean age: 21.36 ± 1.67 ; 28 males and 18 females) who were randomly assigned to either muscular endurance- or muscular power-based push-up training programs. Participants performed six sets of push-ups per training session that were designed using fundamental training principles such as progressive overloading, specificity, recuperation, and individualization. Pre and post-tests were administered for six test exercises: 1RM bench press (BP), relative strength index (BP divided by body weight) (RSI), medicine ball chest throw from incline sitting position for distance (MB), single ballistic push-up for height (PU_{B1}), four consecutive ballistic push-ups for average height (PU_{B4}), and maximum push-up repetition test (PU_{MAX}). Correlations matrix was created and a factor analysis (principle component analysis) was conducted for the six test measures to examine the interrelationship among the test exercises for each gender group during both pre and post-tests.

Analysis/Results: Out of the fifteen possible paired correlations among the test exercises, 7 to 10 significant correlations were found in all test scenarios. The principle factor analysis highlighted the main relationships among the exercises. During female participant's pretest, only one component was detected, and all variables (test exercises) loaded into this component. The strongest variable was the RSI with a 0.922 load. For males' pretest, two components were found. The first one corresponded with the four variables related to relative strength (where body weight is a factor in performance): RSI, PU_{B1} , PU_{B4} , and PU_{MAX} . The strongest variable was the PU_{B4} with a 0.914 load. The second component corresponded with the two tests related to absolute strength (where body weight is a factor in performance): BP and MB, with latter being the dominant variable with a 0.883 load. During the post-test, female participants' tests resulted in separation into two components. The two ballistic pushup exercise loaded into one component, while the remaining four variables

into the second component. However, the two major components were correlated to each other. During the males' post-test, the two components observed during pretest remained detectable.

Conclusions: This study showed that test exercises for muscular endurance, maximal strength, and muscular power did not distinctively show separation during upper body muscular fitness testing. In female participants, strength abilities generally correlated to each other more than for male participants, where relative versus absolute strength were contrasted. Six weeks of training did not cause major shift in pattern of inter-relationships among the abilities in the upper extremities in the present participation group.

Research on the Status Quo of Prepregnancy Physical Exercise and the Effect on Parents and Fetuses

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Background/Purpose: The research is to explore the effect of prepregnancy physical exercise on parental health, fetal health, pregnancy success rate and fetal gender, and promote the healthy generation of human. **Method:** There were 2,400 married participants (1,200 males, 1,200 females) from 16 provinces (Shaanxi, Shanxi, Tianjin, Chongqing, Guangdong, Sichuan, Henan, Gansu, Jiangxi, Yunnan, Liaoning, Inner Mongolia, Ningxia, Anhui, Hunan, Tibet) who completed 2,400 valid questionnaires about the effects of prepregnancy physical exercise to infants. The Cronbach α of the questionnaire =0.869, which shows that the questionnaire has good internal consistency. After evaluated by 10 experts by 5 classes of Likert on the content validity, more than 80% experts thought that the questionnaire design is reasonable and its content validity is high. SPSS was used to conduct statistical analyses, including the descriptive, and Chi-square for the study.

Analysis/Results: (1) Among participants, 38.33% (460) of fathers and 40.83% (490) of mothers had physical exercise before pregnancy; 61.67% (740) of fathers and 59.17% (710) of mothers did not keep exercise. As for fetuses, 16.67% of boys and 10.00% of girls' parents kept doing exercise before pregnancy.

5.83% of boys and girls' fathers kept exercising but their mothers did not; 9.17% of boys and 5.00% of girls' mothers kept exercising but their fathers did not. There are also 30.00% of boys and 17.50% of girls, whose parents did not do prepregnancy physical exercise. (2) 10.83% of participants believe that prepregnancy physical exercise can affect fetal sex, but 57.50% disagree. 31.67% of participants are not aware of the impact. (3) Participants think that prepregnancy physical exercise can promote the health of parents and fetuses and it is also beneficial to pregnancy. However, 2.50% of participants believed in parents keeping in physical exercise helps fetus gender, but the results of Chi-square tests showed that was not significantly related to fetus gender ($\alpha^2_{\text{father}}=0.279$, $P=0.598>0.05$; $\alpha^2_{\text{mother}}=0.003$, $P=0.959>0.05$).

Conclusions: (1) There were more parents did not exercise than those who did, and there are more boys than girls in proportion. (2) The participants' views on the influence of prepregnancy physical exercise on the sex of the fetuses are different, and further investigation is needed. (3) Prepregnancy physical exercise has many benefits for successful pregnancy, childbirth, fetal and parental health etc.

Successful Interventions to Increase Functional Capacity in a Continuum of Care Facility

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Background/Purpose: Functional ability has been inversely correlated with short-term morbidity and the need for assisted living among older adults. As the aging population increases in number, it is imperative to devise measures which enable them to maintain high levels of physical function. The purpose of this study was to evaluate the effect of two different training methods on functional performance in elderly women living in a continuum of care facility.

Method: Three-hundred residents of a long-term care facility were asked to participate in this study. Two hundred volunteered and thirty of those did not meet the inclusion criteria largely due to inability to ambulate even with an assistive device. Of the 170 who remained, all but 10 completed the intervention. Participants were randomly assigned to either a strength training group (ST; $n = 65$); an activities of daily living group (ADL; $n = 65$); or a nonintervention control group (C; $n = 40$). The C group was instructed to maintain normal levels of

activity; the exercise groups completed 3 sessions of exercise per week for 24 weeks. The ST group completed 3 sets of 15, bilateral repetitions, of 13 different strength training exercises using resistance bands and hand weights while the ADL group completed a battery of ADL's and flexibility exercises. Physical outcome measures were taken from the Senior Fitness test: 30-second chair stand, 30 second arm curl, chair sit-and-reach, get-up-and-go and the 6-minute walk. Other self-reported measures included Self-perceived Function (SF36) and Instrumental Activities of Daily Living (IADL).

Analysis/Results: Each test was analyzed separately using a 3 (Groups: C v. ST v. ADL) X 2 (Time: baseline v. post) Analysis of Variance (ANOVA). All p values of .05 or less were considered statistically significant and follow-up analyses on significant main effects were performed using simple effects and the modified Bonferroni post-hoc procedure. The statistical package used to run all analysis was SPSS (Ver. 22.0), Chicago, IL. There was a significant main effect of group or time and a significant interaction on every measure. For example: 30-second chair stand, $F(2,167) = 15.617$, $p < .000$ with a large effect size (.223) as well as a significant Group x Time interaction, $F(2,167) = 5.998$, $p = .002$ with a large effect size (.305). Post-hoc analysis revealed that both training groups increased in measures from the Senior Fitness Test, SF36 and IADL, compared to the controls. The ADL group was significantly higher than the RT group at post in sit-and-reach, while the ST group was significantly higher than ADL in arm curl and 30-second chair stand.

Conclusions: This research describes an intervention designed to increase functional capacity of women residing in a continuum of care facility.

The Effects of Specific Artistic Gymnastic Training Program on PETE Students' Balance, Strength, and Flexibility Abilities

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Background/Purpose: In Turkey, Institution of Higher Education (YÖK) requires physical activity courses which are taught as part of PETE program (Bulca et al, 2012; YÖK, 2006). Artistic Gymnastic (AG) course is one of these compulsory courses. Students attending this course need some important motor skill

competence. If students don't have these skill competences, they are not efficient and productive through course term, even they get injured seriously (Sevim, 2007). Specific training program should be used to prevent injuries and improve their motor skills (Fink, 1985). Aim of this study was to examine effects of specific AG training focused on strength, balance and flexibility variables on PETE students.

Method: Participants enrolled one of mid-anatolia public universities and they accepted to attend this study voluntarily. They were totally 72 students who were divided two groups randomly. Participants of this study consisted of 36 (22 male and 14 female) students for experimental group and 36 (22 male and 14 female) students for control group. Average age ($M_{age}=20.49$, $SD=.99$), height ($M_{height}=1.71$, $SD=.09$) and weight ($M_{weight}=66.41$, $SD=9.46$) were determined for experimental group participants. Control group participants had 22.36 ($SD= 1.15$) mean age, 1.72 ($SD=.08$) mean height and 64.58 ($SD=10.25$) mean weight. Flamingo balance test, sit and reach test and abdominal plank test (both sides) were used as data collection tools before and after training program. AG specific training program was designed for experimental group as twice a week and duration was one hour. Program includes warm-up, stretching, bear and rabbit walks, push-up, parallel bar and dips exercises. Control group continued regular AG course.

Analysis/Results: Mixed ANOVA analysis was used for statistical calculations. Before applying it, normality, homogeneity of variance and independent observation assumptions were checked. All assumptions were not violated and Greenhouse-Geisser correction was used. Results of ANOVA showed that there were significant differences between pre and post test balance ($F_{(2.44, 173.31)} = 6.18$, $\eta^2 = .08$, $p < .05$) and strength ($F_{(1.34, 95.46)} = 40.69$, $\eta^2 = .36$, $p < .05$) variables. There were no statistical significant flexibility gain pre and post test results of both group ($F_{(1, 71.00)} = 1.18$, $\eta^2 = .02$, $p > .05$). Moreover, post test results showed that flexibility ($F_{(1, 71)} = 7.81$, $\eta^2 = .10$, $p < .05$) and balance ($F_{(1, 71)} = 4.93$, $\eta^2 = .07$, $p < .05$) gains of experimental group were higher than control group. On the other hand, there were no significant difference between experimental and control groups for strength ($F_{(1, 71)} = 3.38$, $\eta^2 = .05$, $p > .05$) variable.

Conclusion: As a conclusion, specific AG training program increased balance and flexibility abilities of PETE student. That program did not statistically increase strength ability of experimental group. Developing specific training programs for different physical activity courses in PETE are highly recommended.

The Use of GPS to Evaluate the Effect of Protein and Carbohydrate Supplementation on Collegiate Soccer Performance

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Background/Purpose: This study aimed to identify the effect of concurrent nutritional supplementation on soccer performance as players ingested either carbohydrate CHO (52 g of Cytocarb Maltodextrin) or a combined carbohydrate and protein PRO (Muscle Milk Pro Series 17g CHO + 50 g PRO liquid) supplement.

Method: Twelve male, junior college soccer players (age: 18 ± 6 years, wt. 73.3 ± 8.6 kg) completed three trials wearing global positioning systems (GPS) to measure total running distance and sprinting distance during soccer simulation games. The first match simulation was a baseline match with no supplementation. One hour prior to the second match, simulation players were randomly assigned to one of two supplemental groups CHO or CHO + PRO.

Analysis/Results: A repeated measures ANOVA with a Greenhouse-Geisser correction revealed a statistically significant increase in total distance run for the CHO supplementation group in comparison to the CHO + PRO group ($10.19 \pm .200$ km versus $9.77 \pm .194$ km, $p=.035$). Although total running distance was meaningfully influenced by the supplementation, the pattern of response for total sprinting distance was not influenced by supplementation. There was a decline in sprinting distance and total running distance from first half to second half, both for the control ($M=-0.01$ km, $SD=0.17$) and CHO supplementation group (-0.04 km, $SD=.19$), although these differences were not statistically meaningful. There was a positive correlation between sprinting distance and total distance, which was statistically significant ($r = -.514$, $n = 36$, $p = .01$).

Conclusions: Supplementation influenced the pattern of activity and demonstrated between-trial differences.

Validation of the Dynamic Strength of Knee Extension for Sarcopenics

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Background/Purpose: Sarcopenia (Sc) is a disease associated with aging, characterized by reduced muscle mass and muscle strength (MS), and can be influenced by other factors such as malnutrition and pathologies. Sc has several consequences, including falls, loss of independence and premature death in the elderly (Beaudart et al., 2014). Thus, early diagnosis can be vital for the health of the elderly. The handgrip strength measure is the most commonly used in the proposition of MS cut-off points for Sc (Cruz-Jentoft et al., 2010). However, this measure is not sensitive regarding the adaptations promoted by strength exercises in the elderly with Sc, especially for changes promoted by exercise to MS of the lower limb (Arai et al., 2018), which has greater association with functional capacity and mobility in the elderly (Samuel & Rowe, 2012). Current literature proposes cut-off points of isometric MS knee extension (Assantachai, 2014; Martien et al., 2015) for Sc. However, this measure underestimates the reference isokinetic MS (Martien et al., 2015). The dynamic force of knee extension is a valid measure in healthy elderly (Verdijk et al., 2009), but it has not yet been tested in the elderly with Sc. Therefore, the objective of this study was to test the validity of the MS maximum repetition protocol of knee extension in the elderly with and without Sc.

Method: Twenty-nine males and 65 females ($n=94$) over the age of 60 (70.2 ± 6.4 years) who were physically independent from a large city in southeastern Brazil participated in this study. Criteria for inclusion were the ability to walk independently and without unstable cardiovascular conditions, acute infections or tumors. The Sc was classified according to the criteria of the European Working Group on Sc in Older People (Cruz-Jentoft et al., 2010). The isokinetic knee extension MS, considered as a reference, was determined at $60^\circ/s$ ($MSKE_{PeakTork-60^\circ/s}$) in Newtons-meter (Nm) on Biodex, System 4 Pro. Estimated MS of knee extension was determined on extensor chair (${}_{1RM-Est}MSKE_{Ext-Chair}$) in kilograms (kg); by maximum repetition protocol (Brzycki, 1993), considering the compromise of the safety of the test if the maximum load protocol (1RM) was performed with sarcopenic elderly.

Analysis/Results: Validation of ${}_{1RM-Est}MSKE_{Ext-Chair}$ was tested by Pearson's correlation (r) with $MSKE_{PeakTork-60^\circ/s}$. The Sc had a frequency of 11.7% ($n=11$). The means and standard deviations for the MS tests were: $MSKE_{PeakTork-60^\circ/s}$ (82.0 ± 29.4 versus 88.3 ± 40.7) and

${}_{1RM-Est}MSKE_{Ext-Chair}$ (37.6 ± 15.2 versus 50.3 ± 23.3) for elderly with and without Sc, respectively. There was a high correlation between $MSKE_{PeakTork-60^\circ/s}$ and ${}_{1RM-Est}MSKE_{Ext-Chair}$ ($r=0.81$; $p<0.001$), even considering the presence ($r=0.72$; $p=0.012$) or absence of Sc (0.82 ; $p<0.001$).

Conclusions: The validity of the maximal repetition protocol of knee extension was confirmed for both sarcopenic and nonsarcopenic individuals. Thus, the ${}_{1RM-Est}MSKE_{Ext-Chair}$ measure can be used to monitor the adaptations promoted by the intervention of physical exercise professionals, even with debilitated elderly individuals. However, it is necessary to propose cut-off points of the dynamic and estimated MS of knee extension to identify Sc.

Motivation and Psychology

Examining of Youth Basketball Players' Motivations and Health-Related Behaviors

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Background/Purpose: As Youth Olympic Games becoming a global sports held event every four years, research studies in various aspects of youth sports have become increasingly broader and deeper. This study aims at: exploring the essential factors that actually motivated youth basketball players (YBPs) engaging in practices and competitions; and examining the participants' health relate behaviors.

Method: Participants were 253 YBPs (age 15-18; 136 males, 117 females). Data collection was through an Adapt Youth Basketball Players' Motivations and Health Relate Behaviors Questionnaire (ABPMHRBQ, Zeng, 2017); the ABPMHRBQ consists of 53 items wherein seven items in Part I asked participant's general information. Nineteen items in Part II examine what reasons/factors (RF) motivated you engaging in basketball practices and competitions; each RF allowed the participant to respond in a five-point Likert-type scale (5 represents "Strongly fit", and 1 represents "Little-fit"). There are 27 items in part III check participant's "Health Relate Behaviors" participant can choose the one is best fit his/her situation from the options provided. Data records in Part III are frequency and percentage.

Analysis/Results: The data analysis was done by a $2 \times 2 \times 2$ [Gender (male, female) \times Supports (by- parents, by-School) \times Goal-settings (for-Professional, for-none-

professional)] factorial multivariate analysis of variance (MANOVA)]. Descriptive statistics reflected the general features of how these YBPs were motivated participating in youth basketball practices and competition. After the significant differences were found in 'Supports' and 'Goal-settings'; a 2×2 follow up MANOVA test were operated for determining what/ where differences exactly exist among the two independent variables and the 19 dependent variables. Results showed: top five mean scores among the 19 RFs are: RF1 "unique value" $M = 4.491 \pm .795$; RF17 "distinctive skill" $M = 4.146 \pm .975$; RF3 "healthier body" $M = 4.114 \pm .867$; RF4 "for enjoyments" $M = 3.897 \pm .974$; and RF12 "improve reputation" $M = 3.703 \pm 1.051$. (b) The MANOVA revealed: 'Gender' did not reach significant different level ($\Lambda = .906$, $F = 1.240$, $P > 0.5$) but the 'Supports' ($\Lambda = .859$, $F = 1.959$, $P < 0.5$) and 'Goals-setting' ($\Lambda = .769$, $F = 3.594$, $P < 0.5$) did. (c) The follow-up MANOVA for 'Supports' and 'Goals-setting' discovered: six out of 19 comparisons showed significant differences ($p < .05$) level in 'Supports' aspect with 'support by-parents' over 'support by-school'. Within 'Goal-settings' aspect, ten out of 19 comparisons reached significant differences, wherein eight at $p < .05$ level and two at $p < .01$ levels with "for-Professional" over "for-none-professional".

Conclusions: In conclusion, when comparing the YBPs' motivations, 'Gender (male, female)' is not the determinate aspect but 'Supports (by-parents, by-School)' and 'Goal-settings (for-Professional, for-none-professional)' aspects are. The findings of this study provided fresh data/information regarding the essential RFs that motivated the YBPs and their health relate behaviors who regularly engaging in practices and competitions. Meaningful analyses and suggestions are provided for the youth basketball community that they might use for improving their teaching/coaching. More details and reasons behind of the findings were also analyzed and discussed.

Examining of Youth Tennis Players' Motivations and Health-Related Behaviors

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Background/Purpose: With Youth Olympics becoming a regular global sports event every four years, research studies in all relative aspects of youth athletes have

become more and more deeper and popular. This study aim at: examining the essential factors that truly motivated youth tennis players (YTPs) engaging in practices and competitions; and the fundamental features of participants' health relate behaviors.

Method: Participants were 122 YTPs (age 13-18; 65 boys, 57 Girls; 69 Chinese, 53 American). Youth Sports Athlete's Motivations and Health Relate Behaviors Questionnaire (YSAMHRBQ, Zeng, 2016) was employed for data collection; the YSAMHRBQ consists of 53 items wherein seven items in Part I ask participant's general information. Nineteen items in Part II examine what reasons/factors (RF) motivated you engaging in tennis practices and competition? Each RF allowed the participant to respond in a five-point Likert-type scale (5 represents "Strongly fit", and 1 represents "Somewhat fit"). The rest 27 items in part III checked participant's 'Health Relate Behaviors' by determining which one is best fit his/her situation from the options provided. Data records in Part III are frequency and percentage.

Analysis/Results: Data analysis was done by $A 2 \times 2 \times 2 \times 2$ [Gender (boy, girl) x Supports (by-parents, by-school) x Goal-settings (for-Professional, for-none-professional) x Countries (PRC, USA)] factorial multivariate analysis of variance (MANOVA). Descriptive statistics reflected the general features of how these participants were motivated participating in tennis practices and competition. After significant differences were found in 'Supports' and 'Goal-settings', a 2×2 MANOVA follow-up test was operated to determine what/where differences exactly exist among the two independent variables and the 19 dependent variables. Key findings including: the top five mean scores from the 19 RFs are: RF1 "Unique value" $M = 4.491 \pm .795$; RF3 "for healthier body" $M = 4.418 \pm .969$; RF11 "for self-esteem" $M = 4.065 \pm 1.042$; RF4 "for enjoyments" $M = 3.391 \pm 1.291$; and RF10 "for professional player" $M = 3.639 \pm 1.213$; RF2 "for having fun" $M = 3.951 \pm 1.043$. The MANOVA discovered: 'Gender' ($\Lambda = .777$); and 'Countries' ($\Lambda = .924$) did not reach significant different ($p < .5$) levels but the 'Supports' and 'Goals-setting' did. The follow-up MANOVA for 'Supports' and 'Goals-setting' revealed: eight out of 19 comparisons showed significant differences in 'Supports' aspect; wherein 5 comparisons reached $p < .05$ Level and 3 comparisons reached $p < .01$ level with 'by-parents' over 'by-school'. 2) Within 'Goal-settings' aspect, nine out of 19 comparisons showed significant differences wherein seven at $p < .05$ level and two at $p < .01$ levels with "for-Professional" over "for-none-professional".

Conclusions: In conclusion, when examining YTPs' motivations, 'Gender' and 'Countries' are not the

determinate aspects but 'Supports' and 'Goal-settings' aspects are. The results of this study provided meaningful data/information regarding the essential RFs that motivated the YTPs engaging in practices and competitions, and their health relate behaviors as well. Detail analyses and suggestions are made for the international youth tennis community that can be used for improving their teaching/coaching. Many reasons behind of the findings were also illustrated and discussed.

Examining of Youth Volleyball Players' Motivations and Health-Related Behaviors

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Background/Purpose: Since Youth Olympic Games becoming a global sports event in the year of 2010, research studies demanding about youth volleyball players (YVPs) have become increasingly broader and deeper. This study examined the essential factors that actually motivated YVPs engaging in volleyball practices and competitions and the features of their health relate behaviors as well.

Method: Participants were 129 YVPs (age 15-18; 84 males, 45 females; 76 Chinese, 53 American). Adapted Youth Sports Athlete's Motivations and Health Relate Behaviors Questionnaire (YSAMHRBQ) was employed for data collection. The YSAMHRBQ consists of 53 items wherein seven items in Part I requested participant's general information. Nineteen items in Part II examined what reasons/factors (RF) motivated YVPs engaging in volleyball practices and competitions; each RF allowed the participant to respond in a five-point Likert-type scale (5 represents "Very strongly-fit", and 1 represents "Little-fit"). The rest 27 items in part III checked participant's 'Health Relate Behaviors' by determining which one is best fit his/her situation from the options provided. Data records in Part III are frequency and percentage.

Analysis/Results: Data analysis was done by $A 2 \times 2 \times 2 \times 2$ [Gender (male, female) x Supports (by-parents, by-School) x Goal-settings (for-Professional, for-none-professional) x Countries (PRC, USA)] factorial multivariate analysis of variance (MANOVA). Descriptive statistics reflected the general features of how the participants were motivated participating in volleyball practices and competition. After significant differences were found in 'Supports' and 'Countries'; a follow-up MANOVA test were operated to determine what/where differences exist when comparing

the scores between the two independent variables with the 19 dependent variables. Results showed: (a) top five mean scores among the 19 RFs are: RF1 “Unique value” $M = 4.379 \pm .792$; RF3 “healthier body” $M = 4.302 \pm .973$; RF11 “foster self-esteem” $M = 4.212 \pm .878$, RF4 “for enjoyments” $M = 4.209 \pm .844$; and RF10 “to become a professional-player” $M = 4.194 \pm .984$. (b) The MANOVA revealed: ‘Gender’ ($\Lambda = .762, F = 1.591$) and ‘Goals-setting’ ($\Lambda = .799, F = 1.281$) did not reach significant different 0.5 level but the ‘Supports’ ($\Lambda = .731; F = 1.880$) and ‘Countries’ ($\Lambda = .741; F = 1.781$) did. (c) The follow-up MANOVA for ‘Supports’ and ‘Countries’ discovered: 1) in ‘Supports’ aspect, 5 out of 19 comparisons showed significant differences ($p < .05$) level with ‘support by-parents’ over ‘support by-school’. 2) In ‘Countries’ aspect, four out of 19 comparisons reached significant differences ($p < .05$) level with Chinese YVPs over American YVPs.

Conclusions: In conclusion, when examining the YVPs’ motivations, ‘Gender (male, female)’ and Goal-settings (for-Professional, for-none-professional) are not the determinate aspects but ‘Supports (by-parents, by-School)’ and Countries (PRC, USA) aspects are. The results of this study provided fresh data/information regarding the essential RFs that motivated the YVPs and their health relate behaviors whom regularly engaging in practices and competitions. Meaningful analyses and suggestions are made for international youth volleyball community that can be used for improving their teaching/coaching. Much details and reasons behind the findings were analyzed and discussed.

Relationship Between Attitude and Discrete Emotions in Physical Education

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Background/Purpose: SHAPE America has identified enjoyment as a crucial student outcome associated with quality physical education (PE) programs. Enjoyment is a positive and activating emotion that enhances students’ cognition, engagement, and behavior. However, students hold numerous emotions toward PE yet there is currently limited understanding about negative emotions that are activating such as anger or deactivating such as boredom. Negative emotions such as anger and boredom in PE may cause class disruptions or student

disengagement. Previous research outside of PE suggests that discrete emotions such as enjoyment, anger, and boredom are influential aspects of student motivation that enhance or inhibit study behaviors, achievement, and learning. More research is needed to expand understanding about student emotions in PE. Student attitudes toward PE is one area that has contributed to understanding about motivation. Attitude research appears well suited to investigate student emotions because it uses a dual process model that includes both cognitive and affective components. Therefore, the purpose of this study was to examine relationships between middle school students’ attitudes and enjoyment, anger, and boredom toward PE.

Method: PE students ($N = 273$) in grades five through eight, from four schools in the northeast United States completed two surveys. One survey assessed attitudes and one assessed discrete emotions of enjoyment, boredom, and anger. Surveys were completed during physical education classes. Survey data were only included in the analysis if the participant completed both surveys. Descriptive statistics and reliability evaluations were calculated for all variables. Structural equation modeling (SEM) evaluated relationships between students’ attitude and enjoyment, boredom, and anger toward PE.

Analysis/Results: Reliability analysis for attitude and the emotions showed acceptable levels (range: $\alpha = .79-.95$). The four factor SEM measurement model also showed an acceptable fit, $\chi^2(98) = 253.941, p < .01$; CFI = .939; TLI = .926; RMSEA = .079. The structural model revealed significant relationships ($p < .001$) from attitude to each of the emotions (enjoyment, $\beta = .286$; boredom, $\beta = -.314$; anger, $\beta = -.337$). Student attitude toward PE explained 8.2%, 9.9%, and 11.4% of the variance for each emotion, respectively.

Conclusions: Results from this study support a relationship between student attitude and emotions toward PE. Attitude toward PE explained approximately 10% of the variance to student emotions, which as a single predictor is meaningful. Positive attitudes appear to provide a buffer for experiencing boredom and anger. Further research on environmental factors that enhance positive attitudes could optimize positive and reduce negative emotions. Although, these preliminary results are promising more rigorous research designs are needed to confirm these results. Enhancing student’s attitudes may occur by providing structured curriculum choices. Teachers may also improve students’ attitudes regarding PE by developing personal and positive relationships through identifying students’ PA interests in and outside of school.

Motor Behavior and Measurement

Fitness Literacy: What, Why, and How?

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Background/Purpose: To provide an overview what fitness literacy is, why it is so important and how it should be assessed.

Method: A comprehensive literature review was conducted.

Analysis/Results: As a part of health literacy, fitness literacy is the degree to which individuals are able to access and process basic fitness-related information and services and thereby participate in fitness-related decisions. While fitness itself has been proved an important attribute relevant to health, the relationship between fitness literacy and health has not been well studied and documented, and what and how much a physically educated individual should competent in fitness literacy has not been clearly defined. The need for assessing fitness literacy tool is also well recognized. As an example, developed almost 20 years ago, *FitSmart* (Zhu, Safrit, & Cohen, 1999) was the first and only test constructed based on the modern testing theory (i.e., item response theory) to accurately measure students' knowledge of basic fitness concepts at the high school level was developed. There is an urgent need to develop new generation assessment tools to accurately measure the general public's fitness literacy.

Conclusions: As a part of health literacy, fitness literacy is the degree to access and process basic fitness-related information and services and thereby participate in fitness-related decisions. While fitness itself has been demonstrated a key attribute to an individual's health, the relationship between fitness literacy and health has not been well studied and documented. There is an urgent need to develop assessment tools for fitness literacy.

"Aerobic Capacity" in Fitness Literacy: A Review

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Background/Purpose: To provide a review on aerobic capacity or fitness, one of the most important fitness components, under the fitness literacy framework.

Method: A comprehensive literature review was conducted.

Analysis/Results: Aerobic capacity is described as the maximal capacity to take in, transport, and utilize

oxygen. It denotes the functional capacity of the respiratory system (take in oxygen), the circulatory system (transport oxygen), and the muscles (utilize oxygen). Maximal volume of oxygen consume per unit time VO_{2max} is accepted as the criterion measure of aerobics capacity. This variable is typically expressed in relative ($mLkg^{-1}min^{-1}$) as opposed to absolute ($mLkg^{-1}$) terms. Open circuit spirometry is used to measure VO_{2max} during a graded incremental or ramp exercise test to exhaustion as direct measure. Maximal and submaximal exercise test, based on the risk level of the clients, can be used to estimate VO_{2max} as indirect measure. Commonly used modes for exercise testing include treadmills (Balke treadmill protocol, Bruce Treadmill protocol), ergometers (Astrand cycle ergometer), steps test (Astrand-Ryhming, Queens College) and field test (1.5-mile run/walk, 1-mile run/walk, 12 minutes run, 20-meter shuttle run). Aerobic capacity is one of the most important components of any fitness program. Accumulating evidence has determinedly established that low levels of aerobic capacity are associated with a high risk of cardiovascular disease (CVD), all-cause mortality, and mortality rates attributable to various cancers. It was become of one of the clinical vital signs for human beings nowadays (American Heart Association, 2016). METS (Metabolic Equivalent) are commonly used in health care to determine the intensity of various activities. One MET is defined as the amount of oxygen consumed while sitting at rest and is equal to 3.5 mL/kg/min. Individuals with an aerobic capacity level <5 METs tend to have a particularly high risk for mortality, whereas many epidemiological studies have observed that aerobic capacity levels >8 to 10 METs are associated with relative protection (Kokkinos & Myers, 2010; Kodama et al., 2009). Health literacy has a prominent role in the primary and secondary prevention of CVD, including hypertension, diabetes mellitus, obesity, coronary disease, and etc. (American Heart Association, 2016). Inadequate health literacy and cardiovascular outcomes can be confounded by substantial overlap with other social determinants of health, including social and economic position, educational attainment, access to care, and cultural affiliations. It was highly suggested that aerobic capacity should be measured in clinical practice if it can provide additional information that influences patient management. Indeed, numerous epidemiological studies have now established that more than half the reduction in all cause and CVD mortality generally follows when moving from the least fit group to the next least fit group ((American Heart Association, 2016)). Although the relationship between aerobic capacity and health

outcome has been well developed, additional evidence is required to identify the cut points or thresholds that identify low, moderate, and high aerobic capacity across age, sex, and race.

Conclusions: Aerobic capacity, a key component of fitness, should be an important part of fitness literacy.

“Flexibility” in Fitness Literacy: A Review

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Background/Purpose: To provide a review on flexibility, one of the most important fitness components, under the fitness literacy framework.

Method: A comprehensive literature review was conducted.

Analysis/Results: The American College of Sports Medicine (ACSM, 2010) defines flexibility as the ability of a joint to move through its complete range of motion (ROM). Growing evidence has shown that flexibility is in association with multiple fitness benefits, such as improved joint range of motion and function and enhanced muscular performance. Optimal musculoskeletal function requires maintenance of an adequate range of motion in all joints and maintaining flexibility in the lower back region and the back of the thighs is particularly important because short hamstring muscles are associated with low back pain and lower extremity injuries. Although joint flexibility decreases with aging, flexibility can be improved across all age groups. Joint range of motion is improved transiently after flexibility exercise, chronically after approximately 3–4 weeks of regular stretching at a frequency of at least two to three times a week. Flexibility exercises may enhance postural stability and balance, particularly when combined with resistance exercise. Therefore, preventive exercise programs should include activities that promote flexibility maintenance. The ACSM recommends that exercise programs for elderly people and other populations emphasize proper stretching for all the major joints, especially for areas affected by a reduction in the range of motion, such as the superior and inferior parts of the trunk, the neck and the hips. The sit-and-reach test as a test of back and leg flexibility was first described by Wells and Dillon in 1952 and is now commonly used as a general test of flexibility. In addition, clinicians and sports medicine practitioners routinely assess and monitor the flexibility of the major lower limb muscles as it has been postulated that an inadequate level of flexibility could lead to lower limb muscle injuries and more severe consequences. The passive hip extension

test (PHE), passive hip flexion with knee flexed test (PHF), passive hip abduction test (PHA), passive straight leg raise test (PSLR), modified Thomas test (MTh) and the ankle dorsi-flexion with knee extended (ADFKE) and flexed (ADFKEF) tests are probably the most widely used measurement methods to assess iliopsoas, gluteus, adductor, hamstring, rectus femoris, gastrocnemius and soleus muscle flexibility, respectively. Although the ACSM has published the flexibility training recommendations, there is little evidence to support this recommendation in terms of effectiveness, and which stretching parameters (technique and single stretch duration) are more adequate. Besides, no large-scale studies have been specifically designed to assess the relationship between flexibility and health. Future studies should focus on exploring the health benefits of regular flexibility exercise, such as reduction of musculotendinous injuries as well as prevention of low back pain.

Conclusions: Flexibility, a key component of fitness, should be an important part of fitness literacy.

“Muscular Strength and Endurance” in Fitness Literacy: A Review

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Background/Purpose: To provide a review on muscular strength and endurance, one of the most important fitness components, under the fitness literacy framework.

Method: A comprehensive literature review was conducted.

Analysis/Results: Muscular strength is the ability of muscle or muscle group to exert force (PA guideline, 2008). Muscular endurance is the ability of muscle or muscle group to keep exerting force repetitively. Muscular fitness literacy, the degree to which individuals are able to access and process basic muscular information, is a subset of fitness literacy. Muscular strength is an important predictor of mortality. (Volaklis, Halle, & Meisinger, 2015) That’s why people need a good muscular literacy. Studies also showed that lower muscular strength is associated with higher risk of heart failure (Crump, Sundquist, Winkleby, & Sundquist, 2017) and decrease of dynamic control ability (Karamanidis, Arampatzis, & Mademli, 2008). Musculoskeletal system give human the ability to move their body and muscle provides tension and energy of human body movement. A person with good muscular strength and endurance of fitness literacy is able to make proper exercise prescription to

promote maximum strength and muscle endurance under certain load. Also, they are also capable to utilize muscle correctly of achieving movement tasks, i.e. lift a heavy box, posture control, and complete the techniques in various sports. Muscular strength and endurance and the corresponding muscle exercises are relate with health in the following aspects:

- The better ability of lifting more weight and keeping exerting energy in daily life to improve quality of life;
- As a byproduct of muscle strength and endurance training, muscle mass will be increased therefore blood sugar adjustment ability and basic metabolism will be improved;
- Muscular training can provide better posture control ability to prevent fall.

Conclusions: Muscular strength and endurance, a key component of fitness, should be an important part of fitness literacy.

Physical Activity and Health Promotion

7-Year Overweight and Obesity Trends in a Kentucky University Population

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Background/Purpose: According to The State of Obesity (Segal, Rayburn, & Martin, 2016) Report, obesity rates are appearing to level off for the first time in more than three decades. Kentucky currently ranks 7th in the nation for obesity with an estimated 34.2% of adults with this condition (Segal, Rayburn, & Martin, 2016). The purpose of this research study was to examine the 7-year overweight and obesity trends for a Kentucky university student population. In 2012, 66.2% of adults in Kentucky were overweight and 31.3% were obese (CDC, 2015). That same year, 15.6% of adolescents in Kentucky were overweight and 17.6% were obese (CDC, 2015).

Method: Subjects in this study included 5,230 undergraduate college males and females between the ages of 18-25 who were enrolled in a wellness class at a regional university in eastern Kentucky and participated in a fitness testing event. During the event, fitness assessments including BMI and body fat percentages were measured and recorded using self-reported height and weight along with the use of a handheld

Bioelectrical Impedance Analysis (BIA) instrument. Both body fat percentages along with BMI were entered for all students who participated in the event and statistical comparisons such as means and ANOVA were computed to measure any possible trends.

Analysis/Results: Overall, BMI, body fat percentage and obesity rates did not change significantly ($p > .05$) over the 7-year time period. This is similar to trends in America in which BMI, body fat% and obesity have leveled off for the first time in the past several years. In this study, the average body fat percentage and BMI for males in this study was 14.7% and 25.3 respectively. These results are much lower than the average for men ages 20-39 in America (25%) but somewhat higher than comparable studies of college students (11.6%; Pribis, et al., 2010). The average body fat percentage and BMI for females in this study was 25.3% and 24.1 respectively. These results were much lower than the average for women ages 20-39 in America (36%) but somewhat higher than comparable studies of college students (22.4%; Pribis, et al., 2010).

Conclusions: Fortunately, body fat percentage and BMI trends did not increase, but unfortunately neither body fat nor BMI levels decreased over the 7-year time period either. Importantly, health and fitness opportunities and educational interventions are needed on college campuses to address the overweight and obesity rates that still exist in this population.

A Before/After School PA Program: Program Implementers' Experiences

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Background/Purpose: To increase physical activity (PA) engagement among children and youths, schools are recommended to implement a Comprehensive School Physical Activity Program (CSPAP). In partnership with two universities in the U.S. Northeastern region, a before/after school fitness-based physical activity (PA) program was implemented in two public schools to increase students' PA levels. The purpose of this study was to examine the experiences of the university faculty who collaborated with the schools to implement the before/after school PA program.

Method: Four university faculty members from two universities collaborated with two Physical Education (PE) teachers to implement an 8-week before/after school PA program using the SPARK after school

curriculum in an elementary school and a middle school. The university students assisted the PE teachers in implementing the before/after school PA program as part of the universities' coursework. Qualitative data were gathered using autoethnographic methodology through self-reflections by the university faculty to answer the research question.

Analysis/Results: Self-reflections focused on the process of gaining access to the schools, forming partnerships with the PE teachers, and planning and implementing the before/after school program. Data were inductively analyzed and thematically categorized to answer the research questions. Preliminary results indicated that having a close partnership between the university and the schools facilitated the implementation of the before/after school PA program. The PE teacher served as a key and reliable gatekeeper for the successful planning, design, and implementation of the program. Importantly, the PE teacher paved the way for the administrators' approval of the PA program. Without the support of the PE teacher, it would be challenging for the university faculty to implement the PA programs in the schools. Through the implementation of the PA programs, the university students will benefit in gaining hands-on experience working with the students in the schools.

Conclusions: School-university partnerships are a viable strategy for sustainable implementation of a CSPAP. Supportive PE teachers who believe in the importance of PA programs beyond the school day (i.e., before/after school programs) to increase students' PA, and their willingness to collaborate with the universities are central to the success of such programs. University students providing support in the implementation of PA programs will facilitate the continuance of CSPAPs in schools.

A Comparison of Elementary Physical Education and Physical Activity Classes

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Background/Purpose: Physical education (PE) aims to teach youth skills and develop autonomy leading to becoming physically literate while simultaneously contributing to weekly physical activity (PA). National recommendations suggest that students spend at least 50% of class time in moderate to vigorous physical

activity (MVPA). Unfortunately, elementary school PE is often limited by factors outside a teacher's control. Elementary schools in one southwest U.S. school district that have historically provided one 30-minute PE lesson a week were provided funding from a local healthcare organization to hire noncertified physical activity leaders (PAL) to provide structured lessons that increase number of minutes spent in PA each week. The purpose of this study was to compare lesson context and student PA in lessons taught by PE teachers versus PAL's.

Method: Lessons taught by each PE teacher and PAL (N=10) at each of 5 schools were observed. The System for Observing Fitness Instruction Time (SOFIT) was used for lesson context/content (management, knowledge content, skill practice, game play) and percent time spent in moderate to vigorous physical activity (MVPA-S). Students' (n=217) MVPA was also measured using Actigraph wGTX-BT accelerometers worn around the waist (MVPA-A). Percent time in MVPA-A was calculated using ActiLife software applying Freedson's cutpoints for children (2005).

Analysis/Results: There was a significant correlation between MVPA-S and MVPA-A ($r=.74$, $p=0.006$). A multivariate general linear model was applied with PAL and PE teachers as fixed factors and lesson context, MVPA-S and MVPA-A as dependent variables. Results indicated overall significant differences between classes taught by PAL's and PE teachers ($p=0.046$). PAL's and PE teachers differed significantly in percent of lesson time spent on knowledge content (PAL $10.0 \pm 0.07\%$, PE $23.1 \pm 0.10\%$, $p=0.04$), skill practice (PAL $0.0 \pm 0.0\%$, PE $33.9 \pm 0.20\%$, $p=0.005$), game play (PAL $41.3 \pm 0.27\%$, PE $10.3 \pm 0.08\%$, $p=0.017$) and MVPA-S (56.3 ± 0.07 , PE 38.4 ± 0.126 , $p=0.01$). No statistical differences were observed for percent of time in management, fitness, or MVPA-A.

Conclusions: Students in lessons taught by PAL's had a greater proportion of time in game play and SOFIT observed MVPA-S while PE lessons had more skill practice and knowledge content. SOFIT revealed lessons taught by PAL's exceeded 50% MVPA while PE lessons did not. No significant differences were observed in management or fitness lesson context or objectively measured MVPA using accelerometers. This study supports that PE teachers provide more skill instruction and content. Furthermore, the goal of 50% MVPA during PE may need to be reconsidered since skill practice and instruction may require significant time during PE that adversely impacts the goal of attaining 50% MVPA during PE lessons.

A Cross-Cultural Qualitative Study of Secondary Physical Education Teachers' Job Satisfaction in Japan, South Korea, and the United States

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Background/Purpose: Physical education (PE) teachers have high attrition rates worldwide, yet little cross-cultural research exists exploring the factors contributing to their job satisfaction/dissatisfaction. The purpose of this study was to qualitatively assess cross-cultural factors contributing to job satisfaction/dissatisfaction among secondary school PE teachers in Japan, South Korea, and the United States (U.S.).

Method: Using a purposive sampling, nine secondary school PE teachers, three in each country, were observed during a full day of teaching in their respective schools. Researchers employed methodology triangulation to gather data including field notes during classroom observations, teachers' job satisfaction on an 11-point visual analog scale post every class period, and a semi-structured interview in their native language, consisting of 16 core questions and additional questions relevant to the observed day. All interviews were audio recorded and transcribed in the original language. Korean and Japanese interviews were then translated into English. Five researchers reviewed the satisfaction graphs and transcriptions of the interviews independently to develop emergent themes surrounding job satisfaction and dissatisfaction. Investigator triangulation was completed during the team discussion. Consensus on categorization and coding of the themes were emerged and used for analyses.

Analysis/Results: Four primary themes surrounding job satisfaction emerged: 1) student relations, 2) workload, 3) teaching, and 4) administration relations. The main theme of job dissatisfaction and satisfaction was workload and student relations, respectively in all three countries. The U.S. teachers reported more satisfaction than dissatisfaction in their teaching, whereas the opposite relationship was observed among South Korean and Japanese teachers.

Conclusions: Curricular and value differences in three countries may have influenced participants' perceptions on their job satisfaction and dissatisfaction. The implications of this study for administrators would be to continually evaluate teachers' needs for healthy workload, provide support for their professional development, and advocate for employee wellness to decrease attrition rates and minimize burnout.

A Descriptive Analysis of PETE Master's Programs in the United States, Their Alignment With SHAPE America's Advanced Teaching Standards, and the Advanced Standard's Relevance in Enhancing Existing Masters Curricula

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Background/Purpose: This study provides a descriptive analysis of PETE masters degree programs in the U.S. Curriculum alignment with SHAPE America's advanced teaching standards of professional knowledge, professional practice, and professional leadership, and the four underlying anchors (focus on learning rather than teaching, integrate knowledge base, importance of inquiry, role of leadership) was the focus of this research.

Method: This research utilized a nonexperimental, cross-sectional descriptive research design. The quantitative component analyzed demographics of programs using descriptive analysis. A reflective qualitative component analyzed the programs use of the four anchors established as the guiding framework for SHAPE America's advanced standards using an inductive approach to semi-structured telephone interviews.

Analysis/Results: A two-phase approach was used to collect data. After a survey gathered descriptive demographic profile information about programs, phone-based semi-structured interviews were used to collect data relevant to adherence to advanced PETE standards and underlying anchors.

PETE masters programs are predominantly offered at public masters and doctoral universities. Faculty with earned terminal degrees and K-12 teaching experience instruct in the majority of programs. The method of instructional delivery indicated some online component offered at all universities, with students matriculating through programs in lockstep and nonlockstep fashion. All programs indicated some culminating project, both research and practicum based. Course themes in curricula included adapted PE and hands-on practicum, foundational knowledge, PE technology, field experiences, multiculturalism/diversity, instructional/curricular models, school-based physical activity, standards-based assessments, and supervision, all indicating high priority or essential focus on the advanced standards.

Alignment with SHAPE America's advanced standards ranged from programs intentional alignment directly with standards, to unintentionally aligned (programs met standards through assignments and requirements, though standards were not the primary focus when creating curricula). Four themes emerged from

the qualitative data including leadership development, curriculum mapping, inquiry-based learning, and recruitment and retention. Within inquiry-based learning, interviewees indicated a strong focus on teaching effectiveness through a data-driven approach to analyzing teacher behaviors such as positive and corrective feedback, modeling, and direct instruction. Additionally, the focus on recruitment and retention presented itself as an integral part of this research as it relates to program maintenance and sustainability.

Conclusions: The use of SHAPE America's advanced standards in programs was prevalent. Some programs indicated the availability of initial certification, creating a need to incorporate SHAPE America's initial standards in masters degree programs. Many programs are taking on a significant online/blended format to meet the needs of an ever-changing student population, indicating a need for objectives that may be met via distance learning. Leadership focus presented itself as a primary component in programs. Leadership should be maintained and refined as programs advance and their curriculum. Data-driven teaching effectiveness through evidence-based practice presented itself as integral to producing effective advanced physical education teachers. Data-driven effective teaching is imperative in masters programs as more states continue to move toward objective teacher assessment through edTPA and other subject-specific, performance-based assessments. Lastly, recruitment and retention is the backbone of sustainability and advancement for programs and should continue to be an important focal point for institutions and instructors.

A Diffusion of Innovations Perspective of Physical Educators' CSPAP Adoption

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Background/Purpose: The comprehensive school physical activity program (CSPAP) model uniquely articulates both educational (i.e., physical literacy) and behavioral (i.e., daily engagement in physical activity) goals of school-based physical activity promotion and distills a core set of components that intuitively deserve particular attention when planning and implementing a program to meet these goals. From this perspective, a CSPAP can be viewed as an innovation for

marshaling the resources deemed necessary to ensure all youth receive the education and support they need to be physically active, both now and in the future, and to enjoy and prioritize their participation in physical activity. Recommendations for implementing CSPAPs place emphasis on the role of physical education teachers as potential program leaders. It is generally expected, therefore, that physical education teachers would play a primary role in the adoption of CSPAPs. However, investigation into the factors that may influence physical education teachers' CSPAP adoption has been limited. The present study applied a Diffusion of Innovation Theory (DOIT) perspective to examine physical education teachers' adoption of CSPAPs. Specifically, the role of background/demographic variables and school context in teachers' domain-specific innovativeness and CSPAP adoption was explored.

Method: Physical education teachers (N=407) identified from a nationally representative sample of public schools (K-12) in the United States completed an online survey using established measures. Items assessed background/demographic variables (e.g., CSPAP knowledge, educational level, age, race/ethnicity), perceived school support for a CSPAP (e.g., "Overall, my school administration is supportive of implementing a CSPAP at my school"), domain-specific innovativeness (e.g., "I know more about new educational ideas/practices before more of the other physical education teachers I know"), and CSPAP adoption (yes/no).

Analysis/Results: Descriptive statistics showed the majority of respondents reported adopting a CSPAP (71.2%, n=290) and perceived high levels of school support for a CSPAP. Latent profile analysis was used to identify three groups of teachers who differed based on their reported educational innovativeness: (a) Average Innovativeness (n=313), (b) High Innovativeness (n=51), and (c) Low Innovativeness (n=43). Statistically significant differences were found between groups. The High Innovativeness group perceived the highest level of school support for CSPAPs, reported having the most professional training for CSPAPs, and indicated having the highest level of knowledge about CSPAPs. However, a larger than expected proportion of the High Innovativeness group (41.2%) reported not having adopted a CSPAP.

Conclusions: Physical education teachers who are more innovative in their work as educators perceive they have high levels of support for, and knowledge about, CSPAPs but often may choose not to adopt a CSPAP. Other DOIT variables not investigated in this study (e.g., perceived attributes of a CSPAP) or other theoretical perspectives may provide additional insight into the reasons why some physical education teachers ultimately choose to either adopt or not adopt CSPAPs.

A Needs Assessment to Determine How PETE University Faculty Evaluate Preservice Teacher Competency

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Background/Purpose: There is little research determining how feedback is being provided by a mentor after a performance-based assessment tool is used to evaluate teacher competencies in preservice teacher candidates. Therefore, the purpose of this study is to determine how faculty members at institutions of higher education are currently using performance-based assessment instruments to evaluate competencies of preservice teacher candidates in their PETE preparation programs. First, this study aimed to determine if performance-based assessment instruments are being used in PETE preparation programs and if so which instruments are being used. Secondly, this study aimed to determine how faculty members are providing feedback to preservice teacher candidates after teaching a lesson. Lastly, this study aimed to determine what expectations PETE faculty members have for their preservice teacher candidates in the reflection phase after teaching a lesson.

Method: An online survey was used to gather information from 95 PETE programs in the United States.

Analysis/Results: The results from this study show faculty who have been teaching between 21-25 years have greater odds (OR=43.59, $p<0.05$) of using a performance-based assessment instrument to evaluate preservice teaching competencies. Feedback that is provided by a faculty member in the following ways: immediate, specific, written, and verbal; has a greater odd of being beneficial than receiving no feedback at all. Preservice teachers who self-reflect after a lesson as well as reflect on feedback provided by a mentor have greater odds (OR= .01, $p<0.05$) of benefit from the experience than those preservice teachers who are not expected or encouraged to reflect after teaching a lesson.

Conclusions: Faculty members who have been teaching in PETE programs for sixteen to 21-25 years are more likely to use a performance-based evaluation tool to assess their preservice teacher candidates teaching competencies than those faculty members who have been in the field from zero to five years. Those faculty members who have been teaching for less years are "fresh out the gates" which should imply they have all the resources

necessary to train, mentor, observe, and provide feedback to their teacher candidates. However, this study revealed new faculty members are less likely to use a performance-based evaluation tool to assess teacher competencies. The push for accountability in the field of physical education through assessment apparently was not developed in this group of new (0-5 years teaching) faculty members. Feedback that is provided by a faculty member in the following ways: immediate, specific, written, and verbal; has a greater odd of being beneficial than receiving no feedback at all. Preservice teachers who self-reflect after a lesson as well as reflect on feedback provided by a mentor has a greater odd of benefit than those preservice teachers who are not expected or encouraged to reflect after teaching a lesson.

A Review of Experimental Research in Physical Education From 1998 to 2016

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Background/Purpose: While quantitative nonexperimental research is valuable to physical education (PE), it rarely provides scientifically-rigorous evidence to inform the practice of teaching. Since experimental research examines the causal-effect relationship among variables, it can offer empirical and sound evidence to inform teaching practice and future policy-making in the field of PE. Researchers have conducted studies to review the collective work published in the field of PE. However, no studies have been conducted to review the current status of experimental research in PE. By extending the previous literature, therefore, the purpose of the present study was to review the intervention studies in PE, with a goal of identifying the gaps and future trends in the field of PE.

Method: The first author reviewed all the articles published from 1998 to 2016 in *Journal of Teaching in Physical Education and Research Quarterly for Exercise and Sports*. A total number of 63 quantitative experimental studies were identified. All the studies were coded using a coding template. The major coding categories included theoretical framework, participants, research design, length of interventions, dependent variables, fidelity check, and effect size. The first three authors coded one third of the articles. Interrater reliability was calculated and exceeded 85%.

Analysis/Results: The frequencies and percentages were calculated for each category as appropriate. Eighty seven percent of experimental studies were guided by a theoretical framework. Interventions used various types of research designs. Participants included elementary and secondary students in K-12 physical education, college students in college physical activity program, and preservice and inservice physical education teachers. A variety of dependent variables were measured with the majority of studies focusing on student motivation and psycho motor skills. The intervention length ranged from two 30-minute sessions to 2 years. Forty one percent of studies partially reported or did not report any measures to assess the fidelity of interventions on teacher training and lesson implementations. Forty two percent of studies did not report effect size (Ten studies using a single subject design or only reporting descriptive and interview data).

Conclusions: The limited number of experimental studies had been conducted from 1998 to 2016. The rigor of these experimental studies needs significant improvement. More experimental studies with randomized controlled trial design are needed since it is one of the golden criteria for research findings to be evidence-based.

A Scale Development Study for Physical Activity Awareness Among College Students

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Background/Purpose: College students are a special group of young adults experiencing a critical life transition, faced with a high risk for poor health because of the adoption of unhealthy behaviors. Physical inactivity amongst college students has become a major public health concern given that the continuous endeavor of promoting physical activity (PA) has only achieved marginal success. Awareness of PA seems to emerge to be an important yet understudied piece in our effort to explore effective ways to alter college students' PA behavior. The lack of theoretically sound, valid and reliable instrument for measuring PA awareness, however, has limited the potential to examine the psychological effects on the comprehensive behavior change in PA research. This study aimed to develop an instrument that measures college students' PA awareness on individual and social contextual levels.

Method: Three phases were employed to achieve the goal of the study. Guided by the self-awareness theory

and social ecological model the first phase focused on domain and item construction generating a pool of items with the attempt to assess the internal and external aspects of PA awareness. The second phase was devoted to the content validity that involved items removal and revisions based on expert reviews ($n = 10$). The test of the construct validity and reliability of the PA awareness scale was the final stage of the study using a sample of 994 college students.

Analysis/Results: Confirmatory factor analysis was used to test the construct validity. The model with 17 items embedded in 4 factors indicated an acceptable model fit (i.e., $RMSR = .035$, $RMSEA = .046$, $GFI = .946$, $NFI = .954$, $CFI = .968$). The subdomains were named as intrapersonal awareness, interpersonal awareness, environmental awareness, knowledge awareness based on the content of the items. The scale achieved a good overall internal consistency ($\alpha = .857$), as well as acceptable to excellent consistencies for each factor ranging from .74 to .92. Additionally, the correlations between factors were moderately positive (r ranging from .17 to .33), except for the correlation between knowledge awareness and environmental awareness ($r = .50$).

Conclusions: A set of subscales were included in the instrument including intrapersonal awareness, interpersonal awareness, environmental awareness, and knowledge awareness, which were suggested to be the critical components related to college students' PA awareness in previous studies. The factors supported the proposed structure combining two widely used theories. The scale consisted of 17 items and only needed about 5-10 min. to complete, increasing its feasibility in college students who are busy with their coursework with very limited time for research studies. Overall, the instrument could be used for examining college student PA awareness and the relationship between PA awareness and the corresponding behaviors. To this end, it would eventually help identify effective strategies for PA promotion from personal, psychosocial, and environmental perspectives. Future research is needed to revalidate the scale utilizing various samples of college student in various countries.

A Systematic Review of Active Video Games in Physical Education

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Background/Purpose: In today's technological world, children are being exposed to mobile devices, tablets,

and other electronic devices at very young ages. A recent report showed that 98% of households with children eight and younger have a mobile device. The report also found 28% of children use a mobile device daily and almost half (45%) have their own device. The use of technology, however, is also linked to an increased risk for children and adolescents to develop a sedentary lifestyle. While many intervention strategies are adopted by researchers to address this issue, active video games (AVGs)/exergames have been implemented in school physical education (PE) as an alternative way to promote a physically active lifestyle. The purpose of this systematic review, therefore, was to examine the effects of AVGs in school PE with respect to physical activity intensity, motivation, and psychomotor skill learning.

Method: For this systematic review, we were interested in examining the effects of AVGs and/or Exergames in a PE classroom with a date range of 2005 to 2018. Five initial searches were conducted using the library website. The five searches included the keywords: *Active Video Games and Physical Education*, *Exergames and Physical Education*, *Xbox Kinect and Physical Education*, *Nintendo Wii and Physical Education*, and *Active Games and Physical Education*. The final search resulted in 29 studies meeting our initial criteria.

Analysis/Results: While AVGs may have the ability to increase students' motivation, such as situational motivation, interest, and self-efficacy, the sustainability of students' motivation in AVGs is still questionable. When examining students' energy expenditure (EE), the results are not consistent across all studies. Some studies reported that students experienced a variety of physiological effects including an increase in heart rate, more time spent in light, moderate and vigorous physical activity and also more steps taken than students who did not interact with AVGs. However, it is worth noting that the nonAVG activities varied significantly through our review producing an array of results for EE in students. In addition, our review found that AVGs helped students improve their balance skill.

Conclusions: Finding new ways to motivate and engage students during their PE classes is something all teachers should be invested in. With the rise in mobile technology as well as the use of gaming consoles, introducing these new technologies may be one way in which to motivate students. Adding an AVG to their curriculum can assist the PE teacher in several different areas including the ability to use AVGs such as Dance, Dance, Revolution in a dance unit or including Wii Boxing to a unit on cardiovascular fitness. As this systematic review show, AVGs as part of the PE lesson can increase students' heart rate, motivation, self-

efficacy, situational interest, and raise their levels of PA. Further research into the area of AVGs may include gender differences and ages of students in regard to both motivation and PA. Researchers may also want to examine the use of specific AVG games and its impact on students.

A Systematic Review of Online Instruction in K-12 Physical Education

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Background/Purpose: Appropriate student learning opportunities are essential to quality physical education. In-school instructional physical education time, however, has been eroded in recent years due to unsupportive policies and educational reforms which focus on classroom-based subjects. Online instruction is emerging as a popular instructional delivery method within K-12 classroom contexts. It allows teaching to occur outside the spatial and temporal boundaries of the school (Owston, 1997), and is being leveraged by schools to expand learning beyond the traditional classroom (Ring, 2006). Online instruction, therefore, represents a possible means for physical education teachers to support quality physical education despite current barriers that inhibit appropriate in-class learning opportunities. Consequently, we conducted a systematic review of peer-reviewed research studies and articles related to the use of online instruction in K-12 physical education. The purpose of this review was to describe results of studies, discuss the significance of findings, define general themes that emerged from commentary articles, share limitations, and make recommendations for future research.

Method: The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines were used during the review process. Peer-reviewed studies and articles were included when they related to the use of online instruction within the K-12 physical education context. Full-text studies and articles were evaluated against the inclusion criteria and unrelated articles were excluded from this review.

Analysis/Results: A total of 46 peer-reviewed studies and articles were considered for inclusion. Only 9 research studies and 12 articles qualified for this review. There was significant variability in the quality of the included research studies and the phenomena they examined. Most of the research on online instruction in physical education is related to student attitudes and

perceptions of the instructional method, with the majority of studies measuring student knowledge acquisition. One study focused on the status of online physical education within the United States and one related to physical education teacher education faculty perceptions of online instruction in physical education. Only two studies were related to physical activity of students using online physical education and both used exergaming as a means of physical activity during the implementation of online physical education. To date, no studies have occurred within the elementary physical education context. A main theme across most of the nonempirical peer-reviewed articles was that of cautious possibilities. Authors recognized the potential value of online instruction, but emphasized the challenges associated with ensuring student engagement and assessing physical activity and skill-development.

Conclusions: There is limited evidence in support or against the use of online instruction in physical education due to the heterogeneity of research study foci. Related commentary is largely based on anecdotal evidence and heuristic assumptions. Additionally, comprehensive research studies are necessary to determine the effectiveness and efficacy of the use of online instruction in physical education across grade-levels.

A Virtual Collegiate Employee Wellness Program: Voices of Participants

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Background/Purpose: While worksites are a prime place to implement wellness programs, they can be time-consuming, require many resources and must be conducive to employee needs and desires for the program, to be successful. Previous studies conducted on wellness programs and physical activity interventions have taken place at worksites, in the general public, or at four-year universities (Butler, Clark, Brulis, Castillo, & Racette, 2015; Haines, et al., 2007; Rongen, et al., 2014a). None of these studies investigated the effects of a team-based wellness program on participant perceptions. The purpose of this qualitative study was to investigate the effects of a virtual team-based employee wellness program by examining employee perceptions prior, during and after the program through focus groups, interviews and journal entries.

Method: Faculty and staff of a community college in the southern United States participated in a team-based, 12-week wellness program delivered virtually. The seventy-five participants in the program included 24 males (32%) and 51 females (68%). The ethnic demographic makeup was predominantly Caucasian (79%) with 20% African American and 1% identifying as other or not disclosed. Participants received targeted information concerning health behaviors (i.e., steps, water-intake, sleep, nutrition) and dimensions of wellness (i.e., physical, emotional, intellectual, social, spiritual, psychological) through the virtual platform. A new health behavior was introduced every three weeks: steps, water-intake, sleep, and nutrition. During the 12-week wellness program, participants recorded health behavior data in an online platform sponsored by the College and submitted weekly journal entries. At the end of the program, purposeful, stratified sampling (Patton, 2014) was used to invite participants to participate in semi-structured interviews and purposeful, random sampling was used to identify participants for focus groups. Data triangulation was accomplished through detailed analysis of four qualitative data collection data points: (1) Data from focus groups (post wellness program), (2) semi-structured interviews (post wellness program), (3) journal entries during program, and (4) open-ended questions (pre and during wellness program).

Analysis/Results: At the end of the program, three main themes emerged from the focus groups and interviews by using grounded theory (Creswell, 2014): (1) social, (2) barriers and facilitators, (3) and dimensions of change. The pre wellness program open-ended questions and the journal entries submitted during the program were coded using the three themes. The results showed for the open-ended questions there were 94 identified statements with 10.6% classified in social, 46.8% (28.7% barriers, 18.1% facilitators) in the barriers and facilitators, and 42.6% in the dimensions of change. For the journal entries, there were 1005 statements with 7.1% in social, 26.7% (19.2% barriers, 7.5% facilitators) in barriers and facilitators, and 66.2% in dimensions of change.

Conclusions: Rich qualitative data shed light on participant perceptions before, during, and after the wellness program, highlighting the importance of social accountability in their participation in a wellness program. This study provided evidence that worksites that develop wellness programs would benefit if they considered adding a team-based element, which would foster participation through team accountability.

Acquired, Required, Desired Technology Use Among K-12 HPE Professionals

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Background/Purpose: The charge of each academic discipline is to find the right mixture of necessary content, practical skills and personal or professional application. Preparing the academic content and context is the primary responsibility of educators. The possibilities of learning and integrating new pedagogies can create both uncertainty and excitement. The methods in which all of this can be accomplished, however, often reflects the willingness of educators to take risks and continue seeking professional growth opportunities. Effective learning environments for Generation Z, the first generation of “native digital learners”, will require teachers to be more creative and open to the interests of this generation. These students are keenly attracted to technology rich environments, however physical and health educators adopting innovative, tech-based pedagogy may require experiential training and support (i.e., technology and software use). Training can be resource costly (time, money) and teachers are often in a crisis of confidence for consistent, effective technology use. The purpose of this study was to assess mobile technology adoption concerns, current use, and perceived or actual barriers to use as a pedagogy tool.

Method: Current K-12 health and physical education (HPE) teachers with an initial or standard state license were solicited for single session, electronic survey completion. The Concerns Based Adoption Model (CBAM) framework was utilized to assess teacher concerns. Specifically, the Stages of Concern (SOC; George et al., 2006) survey was modified to reflect discipline-specific concerns with mobile technology adoption, integration, and utility in enhancing best practices in the physical education and health classroom.

Analysis/Results: Approximately 78 K-12 HPE professionals with an average of 12 years of HPE experience completed the SOC survey. General descriptive statistics showed the average number of years using mobile technology ranged from 0-12 years ($M = 4.3$). Approximately half reported that mobile technology use was required by administration for teaching/education practices such as record keeping and attendance (80%), parent communication (65%), student communication (60%), and formal assessment (45%). Additionally, 60% of the teachers reported less than 3 hours of mobile technology training for both general

and specific HPE teaching use; the most pervasive barrier to more efficacious mobile technology use.

A variety of teacher profiles emerged with regards to stages of concern (sum of survey subdomain responses) in adopting and using mobile technology as a pedagogy tool. Educators with more years teaching experience reported higher concerns of creating balance of technology impact on learning and implementation of technology impacting teaching time than teachers with fewer years of experience. Also, teachers with fewer years experience had fewer concerns with adopting technology but higher concerns with how educational mobile technology would contribute to more effective teaching. Other teaching profiles emerged that supported the Concerns Based Adoption Model for educational innovations.

Conclusions: K-12 HPE professionals emerged as under-trained in mobile technology use for educational purposes yet administration has expectations for purposeful, productive, mobile technology integration. The gap between administrative expectations and teacher efficacy for technology use in HPE classrooms should not be ignored as a contributor to higher concerns for technology adoption.

Adolescent Physical Activity Levels Across the Segmented School Day

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Background/Purpose: In order to change physical activity (PA) trends in adolescents, research must understand PA patterns and identify which segment of the day is optimal for interventions. Although there is an abundance of research on elementary-age youth, only six segmented day studies collected PA data on adolescents older than sixth grade; however, none of these studies were conducted in the United States. The purpose of this study was to describe the physical activity levels and patterns of middle schoolers across the segmented school day.

Method: Data was received from a public middle school which runs a school project monitoring physical activity (PA) for 3-4 weeks as part of its physical education (PE) curriculum. Data was collected using Polar Active watches (Electro, Kempele, Finland) which outputs METs. Active minutes in light physical activity (LPA) and moderate-to-vigorous physical activity (MVPA) were calculated utilizing Polar-specific MET thresholds. School days were segmented into before school, class time, morning recess, lunch, PE, after

school, school day, and full day. Means and standard deviations for each segment were analyzed. T-tests and ANOVA compared PA for sex, grade level, age, and BMI. Additionally, MVPA was compared between days with and without PE as well as between the school years with and without restricted recess.

Analysis/Results: Physical activity levels were monitored for 18 days. Over 80% of the included sample had nine or more valid days of data increasing the reliability of the results. Fifty-eight percent of the total sample ($n=207$) achieved the daily recommendation for MVPA. Boys were significantly ($p<0.001$) more active than girls in all segments except for before school. There were no significant differences between grades, and age only showed an increase in MVPA between 12- and 14-year-olds ($p<0.05$). Class time MVPA was significantly different when comparing BMI ($p<0.05$). Students engaged in significantly more MVPA with PE ($p<0.001$). Results showed students accrued 73.12 ± 29.57 MVPA minutes during the full day when they participated in PE and 53.88 ± 27.28 MVPA minutes with no PE. Restricted recess showed significantly less MVPA when morning recess and lunch were combined ($p<0.001$). Days with restricted recess resulted in a mean of 5.57 ± 3.38 minutes of MVPA whereas unrestricted recess showed 7.42 ± 3.93 minutes.

Conclusions: American adolescents were less active than their international peers. Every segment of the school day contributed MVPA minutes; nonetheless, school MVPA accrued less than 50% of the daily recommendation suggesting interventions are needed for in-school PA. Physical education and unrestricted recess and lunch periods are necessary for achieving the recommendation. Research suggests that restriction causes youth to lose valuable PA minutes; consequently, school policy should give ample opportunities for PA without restriction. When compared to MVPA patterns of younger children (ages 9-11), adolescents demonstrated dramatically less activity in class time, morning recess, lunch, and the school day. Further research needs to examine interventions for maintaining PA levels from elementary-age to adolescence.

Alcohol Consumption and Risky Behaviors Among College Students: Current Trends

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Background/Purpose: That college students display risky behaviors with regard to alcohol use is not new. Two relatively new behaviors are drunkorexia and alcoholemia. Drunkorexia is classified as restricting daily caloric intake in order to consume more alcohol. Alcoholemia is characterized as purposefully purging after consuming food or alcohol in order to consume more alcoholic beverages. Other risky behaviors include consuming caffeinated beer and alcohol mixed with energy drinks. The purpose of this study was to examine the current alcohol consumption and risky behaviors among college students.

Method: Participants were 654 college students attending a large four-year state university in the south. Subjects responded to a 12-item survey associated with the purpose of the study. The sample was almost equally divided between males (51%) and females (49%) and the average age of the participants was 21.06 years ($SD = .09$).

Analysis/Results: Just over half of the subjects (53.82%) had ever heard of drunkorexia while 17.43% ($n = 116$) admitted to drunkorexia themselves. Of those and within the past six months, the average number of times of drunkorexia was 10.11 ($S = 17.43$). Twenty-one participants disclosed that they had participated in drunkorexia 10 or more times in their lifetime. Alarming, two subjects reported that had participated in drunkorexia 150 and 180 times. Interestingly, a number of participants who are under the legal age limit had participated in drunkorexia – age 18=7 participates, age 19=6 participants, and age 20=24 participants.

Again, just under half of the participants (46.48%) had ever heard of alcoholemia and 12.39% ($n= 81$) admitted to alcoholemia. The average rate of participation in alcoholemia in the last 6 months was 4.32 ($S = 5.71$). Nine subjects admitted that they had vomited 10 or more times in order to consume more alcohol. A number of participants who are under the legal age limit had also participated in alcoholemia – age 18=5 participates, age 19=8 participants, and age 20=17 participants.

A small percentage (13.91%) of the participants reported having consuming caffeinated beer. Of those and within the past six months, the average consumption of caffeinated beer was 6.44 ($S = 10.12$). An alarming percentage of participants (65.75%) had ever consumed alcohol mixed with an energy drink. Of those and within the past six months, the average number of times they consumed alcohol and an energy drink was 8.48 ($S = 12.33$). Participants also reported

A significant difference in drunkorexia based on membership in a sorority/fraternity was observed, χ^2

(1, $N = 654$) = 16.87, $p = .000$. Not surprisingly, members of a sorority/fraternity were more likely to participate in drunkorexia. A significant difference in alcoholemia based on membership in a sorority/fraternity was observed, $\chi^2(1, N = 654) = 8.42, p = .000$. Members of a sorority/fraternity were also more likely to participate in alcoholemia.

Conclusions: Programs should continue to be initiated to educate college students about the dangers of alcohol consumption and risky behaviors associated with alcohol consumption. Programs for sorority/fraternity members seem to be particularly important.

An Analysis of Factors Influencing Chinese College Students' Use of Physical Activity Wearables

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Background/Purpose: Previous research indicates that physical activity (PA) wearables (e.g., Fitbits, Pedometer, Garmin, Apple Watch, etc.) are used as self-monitoring devices to motivate and improve PA of college students. Although a number of studies have reported the use of PA wearables in college students, little is known why Chinese students use or do not use PA wearables. This study aims to examine factors influencing the use of PA wearables among Chinese college students.

Method: The participants were a total of 20 Chinese college students ($N_{female} = 15, N_{male} = 5; M_{age} = 20.9; P_{sophomore} = 95\%, P_{senior} = 5\%$) without background in physical education, attending a summer international program at a large southern state university in the US. Two focus group interviews were conducted based on their use of PA wearables. The unified theory of acceptance and use of technology (UTAUT) was employed as the theoretical framework for this study. Six interview questions were constructed based on the following UTAUT elements (i.e., performance expectancy, effort expectancy, social influence, the facilitating conditions, voluntariness of use, and behavioral intention).

Analysis/Results: A constant content comparison method was employed to generate themes. Two researchers independently coded and analyzed the data. Member checking and peer debriefing were used to ensure the credibility of the data and results interpreted. The following themes were identified: (a) Students who use PA wearables believed that PA wearable can motivate and monitor their PA. However, those who did not use any PA wearables viewed PA wearables as social tools and believed that PA wearables

were only useful for professional athletes; (b) In terms of effort expectancy and facilitating condition, financial support and effort were not factors affecting participants' use of PA wearables; (c) Concerning social influence, friends instead of parents were identified as a strong factor impacting their use of PA wearables; (d) Participants' use or not use of PA wearable were voluntary and no instructors of theirs had required them to use any PA wearables in health and physical education classes; and (e) For the behavioral intention, students were more likely to use PA wearables if they believed that the use of PA would be beneficial for maintaining habitual participation in PA.

Conclusions: The reasons for those who have not used any PA wearables were related to their misunderstanding of the benefits for using PA wearables rather than the financial burden. More alarmingly, participants learned about PA wearables by themselves, suggesting that PA wearables have not been used as instructional devices in physical education settings. There is a need for more education concerning the benefits of using PA wearables so that students can learn how to use PA wearables and understand how they can affect their PA. Social support should be taken into account when encouraging students to use PA wearables.

An Exploration of Online Resources That Physical Education Teachers Utilize

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Background/Purpose: Increasingly, the internet is reshaping how physical education (PE) teachers consume information related to professional growth. Currently, there are a variety of internet-based resources that PE teachers can access to support their instruction. To date, there remains a dearth of research regarding PE teachers and online resources. The focus of this study was to explore the habits, preferences, and recommendations PE teachers have for online resources.

Method: A mixed-method research design was employed to explore PE teachers' interactions and perceptions toward online resources. A total of 63 participants were involved in the study. The overarching inclusion criterion for the study was that the participants had to be involved with the PE profession currently. The sample included preservice teachers ($n = 18$), K-12 teachers ($n = 20$), and college instructors ($n = 25$). Data were initially collected through an online survey that had quantitative and qualitative items. Survey completers were then invited to

participate in a follow-up semi-structured interview, which yielded eight participants.

Analysis/Results: More than half of the participants (55.6%) reported on the survey that they use the internet ‘most of the time’ to ‘always’ when searching for resources to support their instruction. Inductive content analysis strategies were applied to qualitative data (Lincoln & Guba, 1985). Three themes emerged from the open-ended survey questions and follow-up semi-structured interviews. The first theme, “I just Google it” indicated how easy it was for participants to access online resources and how they could access information from a variety of different sources. Theme two, “easy to consume and free” highlighted how participants preferred online resources that were visually appealing (i.e., video, pictures, text) easy to understand, and of no monetary commitment. Theme three, “there is so much information online” described the paradoxical nature of online resources in that there is an abundance of information online making it difficult to discern quality.

Conclusions: A key, albeit unsurprising result of this study was that PE teachers use online resources; more importantly, participants highlighted considerations to inform the design of future online resources. More broadly, participants underscored how there are plenty of resources that PE teachers can access online, indicating that there is a community of people who develop content and share ideas. As the role of the internet continues to emerge, the researches of this study encourage other scholars to explore the role online resources serve in the professional growth of different PE professionals.

Association Between Comprehensive School Physical Activity Program Implementation and Principal Support in Schools: Iowa FitnessGram® Initiative

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Background/Purpose: Administrative support from school Principals is regarded as an important component to implementing Comprehensive School Physical Activity Programming (CSPAP); however, the influence has not been evaluated quantitatively. The purpose of this study was to directly examine the impact of principal support on CSPAP implementation.

Method: The study was conducted through the Iowa FitnessGram® Initiative, a participatory research

network focused on supporting school’s efforts to promote student fitness and wellness. Physical Education teachers from 42 schools completed a survey on principal support of wellness initiatives and CSPAP implementation (50% response rate). A one-way Analysis of Variance (ANOVA) model was used to evaluate the association between principal support and CSPAP implementation.

Analysis/Results: Quality Physical Education was reported as the highest implemented CSPAP domain, while Family and Community Engagement and Staff Wellness were the least implemented domains. The one-way ANOVA identified that high principal support was associated with higher CSPAP implementation ($F(2, 39) = 4.17, p = .02$) and the size of the effect was large ($\eta^2 = 0.18$).

Conclusions: The degree of principal support was positively associated with the degree of CSPAP implementation in the schools. Public health researchers and school wellness leaders interested in implementing CSPAPs should seek out principal support to help promote adoption and effective implementation of programming across the school.

Association Between Product-Oriented Motor Competence and Perceived Competence in Adolescence

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Background/Purpose: This study examined the association between adolescents’ product-oriented motor competence (MC) assessments and their perceived motor competence.

Method: A convenient sample ($N = 53$; girls = 27) thirteen to seventeen-year-olds ($M = 14.9, SD = 0.9$) participated in the study. Actual MC was measured by means of product-oriented assessments of throwing and kicking speed, hopping and standing long jump distance, and supine-to-stand time. Participants performed five trials of the supine-to-stand task, throwing, kicking, and standing long jump and two trials of hopping on each leg. Individual’s perceived MC was measured using the perceived sports competence scale of the Physical Self-Perception Profile (PSPP; Fox & Corbin, 1989). Pearson’s correlations and a multiple regression analysis were conducted to examine the association between adolescents’ MC product scores and their perceived MC.

Analysis/Results: Throwing ($r = .62$ $p < .05$) and kicking speed ($r = .52$ $p < .05$), average distance/hop ($r = .34$ $p < .05$), standing long jump distance ($r = .41$ $p < .05$) and STS time ($r = .47$ $p < .05$) were all significantly correlated with perceived MC. The regression analysis indicated that MC product scores predicted 36% of the variance in perceived MC (adjusted $R^2 = .36$; $F = 6.44$; $p < .001$).

Conclusions: To our knowledge, this study is the first to examine the associations between actual product-oriented measures of MC (object control and locomotor) and perceived MC in adolescents. In addition, these findings demonstrate the strongest associations between MC and perceived MC to date, indicating perceptions of their MC are more closely aligned with their actual MC in adolescence as compared to childhood. These data align with the Stodden et al., model indicating the strength of association between actual MC and perceived MC increases across time.

Associations Among Assessments of Body Composition With Cardiorespiratory Endurance in Adolescents

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Background/Purpose: Body Mass Index (BMI) is the most commonly used index to assess body composition. However, physical activity (PA) literature suggested that circumferences measurements might be more specific than BMI to assess body composition because BMI includes both lean and fat mass. Little research has been conducted to examine whether specific circumference measures are more valid predictors of cardiorespiratory endurance. Therefore, the purpose of the study was to evaluate the relationships among BMI, waist circumference (WC), hip circumference (HC), waist-to-hip ratio (WHR), and waist-to-height ratio (WHtR) with cardiorespiratory endurance among high school students.

Method: The sample consisted of 69 high school students (44 boys and 25 girls; Mean age = 16.4 ± 0.9 years old) who completed the study in spring of 2018. BMI was calculated by measured height in meter divided by weight in kilogram squared. WC and HC were respectively measured at the level of the umbilicus with the subject in midexpiratory position and the widest point over the greater trochanters to the

nearest 0.5 cm by using nonelastic tape. WHR was conducted by using weight circumference divided by hip circumference. The outcome variable was Rockport One Mile Walk Test indicating cardiorespiratory endurance levels. All the measurements were conducted by trained research staff. Pearson's product-moment correlation coefficients were employed to determine the extent and direction of the relationships among all the measures. A multiple linear ridge regression analysis was performed to estimate the significance of selected predictors on participants' cardiorespiratory endurance, adjusting for multicollinearity among the predictors.

Analysis/Results: There were statistically significant associations between BMI ($r = -0.49$), WC ($r = -0.47$), HC ($r = -0.48$), and WHtR ($r = -0.53$) with cardiorespiratory endurance levels ($p < 0.001$). Among the all measures, WHtR demonstrated a slightly higher partial correlation than the circumference measures with cardiorespiratory endurance. Using multiple linear ridge regression, WHtR ($\beta = -176.04$, $p = 0.002$, 95% CI [-287.34, -64.83]) and WC ($\beta = 2.32$, $p = 0.018$, 95% CI [0.41, 4.22]) were the only significant predictors of cardiorespiratory endurance.

Conclusions: Our results indicate that the circumferences of WC and WHtR measures were stronger correlates of cardiorespiratory endurance than BMI. Future studies shall target on younger children to explore the correlates between circumferences measures and cardiovascular risk factors.

Associations Between Selected Dietary Behaviors and Physical Activity in Adolescents

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Background/Purpose: It has been well documented that many adolescents failed to meet multiple diet and physical activity recommendations, which might be due to the fact that the linking between diet and physical activity in adolescents is contradictory and inconclusive. Therefore, the purpose of this study was to examine the association between a number of selected dietary behaviors and physical activity in a representative sample of adolescents from the state of Nevada in the U.S.

Method: A two-stage cluster random sampling method was used to recruit Nevadan adolescents from grades 9-12 ($N = 5,080$; 2,600 girls, 2,480 boys). The Youth Risk Behavior Survey (YRBS), developed by the Centers

of Disease Control and Prevention, was administered to students within public, private, and charter schools. Multilevel generalized linear mixed effects models with a logit link were employed to examine the relationships between various dietary behaviors and self-reported physical activity. Self-report physical activity was the dichotomous outcome variable stratified by students who participated in at least five days of 60 minutes of physical activity per day over the past week. Sampling weights were employed by region and random intercepts were employed at the classroom level to adjust for clustering within the data structure. Models were also adjusted for the covariates of age, sex, BMI, socioeconomic status, and ethnicity.

Analysis/Results: After adjusting for covariates and clustering within the data structure, the results suggested that adolescents had significantly higher odds of participating in at least five days per week of 60 minutes of physical activity per day when consuming fruit juice (adjusted OR = 1.39; 95% C.I.: 1.20 – 1.61), $p < 0.001$), fresh fruit (adjusted OR = 1.70; 95% C.I.: 1.37 – 2.11, $p < 0.001$), green salad (adjusted OR = 1.39; 95% C.I.: 1.21 – 1.59, $p < 0.001$), milk (adjusted OR = 2.02; 95% C.I.: 1.61 – 2.54, $p < 0.001$), potatoes (adjusted OR = 1.21; 95% C.I.: 1.05 – 1.38, $p = 0.007$), other vegetables (adjusted OR = 1.39; 95% C.I.: 1.11 – 1.58, $p = 0.002$), and who ate breakfast everyday (adjusted OR = 1.75; 95% C.I.: 1.52 – 2.01, $p < 0.001$) during the past week. No statistically significant relationships were found between soda drinking and physical activity ($p = 0.892$), or between carrot consumption and physical activity ($p = 0.116$).

Conclusions: Self-reported physical activity significantly and independently related to Nevada adolescents' selected dietary behaviors. This study provides evidence to consider physical activity when advising older pediatric populations' diet choices and implementing school-based health promotion programs.

Augmented Reality and Physical Activity: A Systematic Review

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Background/Purpose: Augmented reality has the capability to bridge the physical world with the virtual world. In a sense, this mixed reality enables the user to see the real world in combination with virtual elements. A prime example of this phenomenon would be Pokémon GO! Although increased screen time throughout the United

States has its negative connotations (i.e., sedentarism), this augmented reality technology can be positively used to benefit one's health related fitness markers, as well as, one's academic achievement (Hsiao & Rashvand, 2011). Thus, it is imperative that researchers and educators alike, attempt to incorporate augmented reality systems within their research and teaching practices as a means to increase physical activity among youth, adolescents, and adults. The purpose of this study was to conduct a systematic review of literature on augmented reality and its impact on physical activity in and outside of the school setting.

Method: A systematic review of augmented reality and its impact on physical activity was conducted. Inclusion criteria for this systematic review were as follows: a) English language, b) publication dates between January 1, 1998 to May 31, 2018, c) peer-reviewed, and d) human subjects between the ages of 4-26. Search terms such as augmented reality, physical activity, physical education, and fitness were used as a search strategy for this systematic review. Search engines such as EBSCO HOST, PubMed, and Google Scholar were used to identify potential research articles. Titles and abstracts were examined to identify a potentially relevant paper for review. Interrater reliability took place amongst a second researcher if there was uncertainty in the selection process.

Analysis/Results: A total of 2,490 results were returned. After removing all nonphysical activity results, this search gathered 33 unique citations. A total of 13 were rejected at the title and abstract level. Therefore, 20 unique citations passed the inclusion criteria and were included within this systematic review. All 20 studies incorporated the testing of human subjects and examined physical activity patterns through the use of augmented reality techniques by way of questionnaires, experimental groups, and control groups. Of the 20 studies identified, 19 contained positively significant associations between the use of augmented reality and physical activity acquired.

Conclusions: In conclusion, these findings support evidence of a positive relationship between augmented reality and an increase in physical activity (95% of studies supported this positive association). It is imperative that additional intervention and prospective studies are carried out, especially within the K-12 school setting. Media characteristics, such as: Connectivity, hypertextuality, modality, virtuality, and interactivity are all a part of augmented realities functions. These functions can contribute to the growth of youth, adolescents, and adults from a physical activity benefits perspective. Rather than decreasing screen time, educators and researchers can use these modes

of technology to their advantage. After all, this is the 21st century.

Authentic Physical Activity and Exercise in the Online PE Class

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Background/Purpose: Students have choices to take their physical education courses online through accredited virtual schools. There have been questions about the efficacy of online PE courses and whether or not students actually fulfill the fitness portion of the courses. The purpose of this inquiry was to describe the physical activity (PA) components of secondary online PE courses and to identify ways online physical educators attempt to authenticate student PA and exercise throughout the courses.

Method: This study utilized mixed methods through qualitative and historical data. Participants in the qualitative study included three online physical educators from the U.S. The historical data came from a virtual school administrator, an online physical education curriculum content designer and three additional online physical educators in the U.S. Access to online secondary PE courses provided examples and analysis of exercise assignments and student fitness work submissions.

Analysis/Results: The online physical education courses were found to include substantial PA and exercise requirements and assignments that aligned with health-related fitness goals and national physical education standards. Online physical educators reported multiple means of confirming authentic student PA and exercise activity: Hand-written and typed activity and exercise logs with parent signature, oral discussions with students about PA, phone communications with parents and guardians, student pedometer use, and video recordings of activity participation.

Conclusions: The results indicate that health-related PA and exercise assignments in online PE classes are often substantive. Students' PA and exercise participation in online secondary PE classes can be confirmed through a variety of ways by teachers. Teachers typically use multiple means of checking for student PA participation. Accurate, detailed fitness logs along with regular verbal communications with students and parents/guardians are essential for confirming authentic student PA. Increasingly, students have the choice to take physical education courses online. There are quality online opportunities for students to participate in PA and to choose exercises they prefer within the

comfort of their home and community environments, but continuing to work out best practices for confirming that activity and exercise is critical and warrants further study.

Body, Mind, and Emotion in Aerial Dance

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Background/Purpose: In logical positivism in exercise promotion the mind (subject) is the central point of departure in understanding how it leads the body (object) in engaging in movement activities. The issue with this approach – raised within Kinesiology and earlier philosophical movements – is that it is over-reductive, oversimplified, and individualistic in nature where cut-and-dried behavioral constructs are supposed to lead to action. In his “*Phenomenology of Perception*” (1945/2002), Merleau-Ponty critiqued the Cartesian mind-body or subject (consciousness)-object (transcendent) dualisms by stressing out that the body is acting as a subject – the “Lived Body”, connecting subject and object, including emotions. The importance of practical (bodily) experiences in understanding movement is also stressed in *phronesis* (practical reasoning/wisdom). In an attempt to explore this alternative phenomenological (embodiment and consciousness) and *phronetic* approach in exercise promotion, the study purpose was to understand how body and mind interact in aerial practice or performance (dance, physical theater).

Method: This was a qualitative study utilizing a phenomenological and *phronetic* approach in data collection and analysis. There were 13 undergraduate students ($M_{age} = 20.46 \pm 2.03$ years old; females = 9; males = 4; Whites = 10; African Americans = 2; Middle Eastern = 1; beginners = 4; intermediate = 4; advanced = 5), who enrolled in an undergraduate class of aerial practice at a major South Eastern US university. Individual-based interview questions included description of and attention to bodily sensations during aerial practice and/or performance and the role of visual cues (e.g., mirror and videos) and music on aerial silks.

Analysis/Results: Based on the thematic analysis, two themes emerged. The first theme was *bodily sensations and the mind* with the following categories: performativity aspects in mind (looking graceful and precise, creating sequences, matching music with performance, creating emotions); bodily sensations prominence (the body guides action via repetition and practice); bodily

sensations description (paying attention to and/or sensing the tightness and looseness of the silk on the body, the wraps, the muscles engaged, gravity and weight or weightlessness); pain, bruises, burns, tiredness (decreased negative bodily sensations with practice); more thinking at first (when learning and practicing a new move); awareness for safety (where the hands, feet, silk, and body are in relation to space); and visual cues to improve (mirror and videos were used mainly to perfect moves before or after performance). The second theme was *music, mind, body, and emotion*: music to guide performance (music like a timer); emotion in performance (embodied music in heart and soul, creation of feelings); intention in movement (beyond music); too much thinking, less emotion (tuning out the music and focusing on routine that can hurt performance).

Conclusions: The body (bodily sensations and their guidance) interacts with the mind (awareness, thinking about performativity) in aerial practice-performance. Although visual cues can perfect performance, exercise promoters should emphasize the body as subject (bodily sensations), interacting with the mind to enhance performance, safety, and meaning in movement. Music can be embodied, creating emotion and facilitating practice and performance; however, movement still needs to have intention/purpose.

Building Linkages to Appropriate Healthcare via a Health Literacy Curriculum

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Background/Purpose: According to the World Health Organization (WHO, 2018), health literacy includes “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health” (p.1). Health literacy predicts health more than age, income, employment status, education, or race (Weiss, 2007). In communities where limited English proficiency is a barrier to optimal health, building linkages to care by fostering health literacy and the confidence to advocate for personal health is essential. School health education that focuses on building health literacy and health advocacy skills may provide a vital link in such communities. The purpose of our research was to study the impact of

a health literacy and health advocacy curriculum on high school students’ knowledge and skills and their confidence to take action for themselves and others regarding personal health. Also, we sought to know if the curriculum fostered family discussions related to health, which would indicate an impact beyond the classroom. Because the high school at which we implemented resides in a community in which 45.2% speak a language other than English at home (United States Census Bureau, 2015), we regarded the setting as ideal to make a positive impact on community health literacy.

Method: Participants were 304 high school students in a required health education course. Instruments solicited open- and closed-ended responses via an online quiz and a survey. The quiz consisted of 17 multiple-choice, health literacy/advocacy knowledge items, three items dedicated to applied health literacy skills, and one item dedicated to healthcare rights awareness (specifically, right to an interpreter). The survey included a 7-item scale regarding confidence to perform health literacy tasks and a 5-item scale regarding confidence to act as an advocate for health. It also included one open-ended question regarding family conversations about the curriculum. This study was quasi-experimental, using pre and post-assessments; however, there were no control and experimental groups.

Analysis/Results: Results indicated the curriculum had a significant, positive impact on the health literacy and health advocacy knowledge ($p < .001$), applied health literacy skills ($p < .001$), and awareness about healthcare rights ($p < .05$). Results also indicated a significant impact on confidence to perform health literacy ($p < .001$) and health advocacy ($p < .001$) tasks; however, the impact was negative. Finally, 74% of students indicated they discussed the curriculum at home. The most common curriculum topics discussed at home were family health history (39.8%), insurance/cost of health-care (12.9%), and health risk factors (10.8%).

Conclusions: Findings suggest the curriculum had a positive impact on health literacy and health advocacy knowledge and skills, as well as awareness of one’s healthcare rights. The findings also suggest that the curriculum’s impact reached beyond the classroom, generating family conversations about health. Such findings are encouraging as this suggests that curriculum has the potential to positively impact overall community health literacy among a linguistically diverse population. Future research should seek to uncover the reasons and ways to address the curriculum’s negative impact on confidence to perform health literacy and health advocacy tasks.

Can We Make a Difference With School-Based Staff Wellness Initiatives ?

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Background/Purpose: Whole School, Whole Community, Whole Child and Comprehensive School Physical Activity Program models recognize school employees as influential, positive role models to students' participation in physical activities (CDC, 2015; Lewallen et al., 2015). However, no empirical study has been reported to examine staff involvement as school health education (Hunt, 2017). The purpose of this study was to examine effects of a team sports physical activity initiative on school employees. In specific, the current study focuses on the effect of this physical activity initiative on staff's psychological variables such as: social relatedness among employees (RE), physical-activity motivation (PM), and perceived stress (PS).

Method: A mixed methods design incorporating a survey and a semi-structured focus group interviews were used to collect data. School employees (n = 87) working in an urban middle school were asked to voluntarily participate in this study. Participants were introduced to the team sport game of Catchball (This game resembles Volleyball with one major difference; players must catch before passing or spiking across the net). The school team had an instructional captain that were charged with leading at least one practice a week for 6 weeks. After 6 weeks of practice, the Team sport physical activity initiative was concluded with a school wide culminating event.

Participants were asked to answer 3 different survey pre and post program questionnaires: 1) The Need for Relatedness Scale (NRS-10), 2) Behavioral Regulation in Exercise Questionnaire-3 (BREQ-3), and 3) Perceived Stress Scale (PSS) assessing RE, PM, PS, respectively. In addition, researchers conducted semi-structured focus group interviews (with participants, nonparticipants, and administrators) following the program implementation. The objectives of the interviews were to examine perspectives, experiences, and thoughts on the wellness program. This study was approved by IRB (#H18270).

Analysis/Results: Thirty-two employees responded both pre and post survey; twelve of them were participants of the intervention program while the other twenty were not. Repeated measure analysis of variance (ANOVA) were utilized to compare participants and nonparticipants with changes in RE, PM, and PS over the intervention. Each NRS-10, BREQ-3, PSS, and their subscale scores were analyzed in a 2 (prepost) * 2 (group) ANOVA. ANOVA results indicated that there

was significant main effect for NRS-10 between groups, $F(1,30) = 5.16$, $p = .031$ partial $\eta^2 = .147$; however, there were no statistical significance main effect for BREQ-3 and PSS between groups. Four themes emerged from qualitative data: (a) "Seeking Relationship" (b) "Payback Commitment" (c) "Stress-free" (d) "Being Active for Others".

Conclusions: Teachers' well-being have the potential to impact teachers' health, job satisfaction, and retention at the schools (Robert Wood Johnson Foundation, 2016). This study shows that positive impact of the staff wellness program on social relatedness among school employees. Moreover, the initiative showing promise of potential to lower teachers' stress levels, and increase staff attention to issues of health and well-being.

Changes of Children's Physical Activity Behaviors on Weekdays and Weekends

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Background/Purpose: Despite increasing empirical evidence concerning trajectory changes of children's physical activity (PA), changes of children's objective-assessed physical activity (PA) and energy expenditure (EE) during weekdays and weekends from childhood to early adolescence remain largely unexplored. Therefore, the purpose of this study was to examine the changes of children's time spent in sedentary, light PA (LPA), moderate-to-vigorous PA (MVPA) and estimated EE rates in two segments (weekdays and weekends) over three years.

Method: Participants were 261 second and third grade children (134 girls; Mean-age=7.81) recruited from two public elementary schools in Texas. Children's 5-day PA and EE (8:00am-10:00pm) were assessed via ActiGraph GT3X accelerometers in fall of 2012 and spring of 2013, 2014 and 2015, respectively. The data for each participant were collected for a minimum of 5-days (12 hours/day minimum) with at least 3 weekdays and 2 weekend days. The outcome variables were time in sedentary, LPA, MVPA, and kilocalories per day (KPD) for weekdays and weekends, respectively.

Analysis/Results: The within-subject (Time) effects were significantly for weekdays, $F(12,90) = 48.07$, $p < 0.01$, $\eta^2=0.86$; and weekends, $F(12,52) = 48.38$, $p < 0.01$, $\eta^2=0.92$. Overall, as children aged, a significant decrease in MVPA occurred in weekdays every year ($p < 0.05$)

and weekends only in the second year ($p < 0.05$). Similarly, children's changes in EE demonstrated similar trends in weekdays and weekends over time. In contrast, children's sedentary time increased gradually in the first 2 years ($p < 0.05$) yet decreased slightly in year 3 during weekdays. Their sedentary time decreased in year 1 and then increased dramatically ($p < 0.05$) thereafter during weekends. Additionally, children's LPA increased significantly in year 2 ($p < 0.05$) and then decreased in year 3 ($p < 0.05$) during weekdays; while decreasing significantly in year 2 and 3 ($p < 0.05$) during weekends.

Conclusions: Children's MVPA declined during weekdays and weekends over time. The finding is in line with many previous studies indicating a decline in MVPA in childhood. Also, changes of EE showed similar change patterns as MVPA. Further, our data suggested an increased trend of sedentary time and decreased trend of LPA in children over time. The findings suggest children tend to have more sedentary time and less PA as they age. Effective PA interventions may be implemented to reverse this trend.

Children's Levels of Energy Expenditure, Perceived Exertion, and Fun During Skill Practice

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Background/Purpose: The US Department of Health and Human Services recommends that children participate daily in 60 minutes of moderate to vigorous physical activity (MVPA). A threshold of >4.0 METs (metabolic equivalent of task) is considered MVPA in children. Physical education classes are ideal settings for the promotion of MVPA through the practice of continuous (walking, running) and discrete (kicking, throwing, striking) skills. Recent research in adults has determined the energy expenditure of discrete skill practice to be high while participants' rate of perceived exertion (RPE) was low. The replication of this phenomenon in children would provide evidence for the inclusion of discrete skill practice in curricula aiming to promote MVPA. Thus, this study examined energy expenditure (METs), rate of perceived exertion (RPE), and level of fun during object projection skill performance (kicking, throwing, and striking) at three different practice intervals in children.

Method: Children ($N = 42$, $M_{\text{age}} = 8.1 \pm 0.8$ years) participated in three nine-minute experimental sessions where participants performed rounds of 5 kicks, 5 throws, and 5 strikes in blocked fashion, at three practice intervals (i.e., 30, 12, and 6 seconds). Each participant completed the three sessions in a randomized order. Participants were instructed to perform all trials with maximum effort and to report their RPE (1 = "Not tired at all" – 10 "So tired, I can't go anymore") and level of fun (1 = "Not fun at all" – 10 "The most fun I've ever had") using 10-point scales. The average energy expenditure (METs) during minutes 4-8 of each nine-minute session were calculated using a COSMED K4b2 gas analyzer.

Analysis/Results: Three one-way repeated measures ANOVAs for METs, RPE, and fun were conducted to examine differences across groups and sex. Data indicated a main effect for interval condition ($F = 94.36$, $p < .001$, $\eta^2 = 0.605$) with decreased interval times between performance trials yielding significantly higher METs across conditions (4.5 ± 0.8 , 6.3 ± 1.3 , 8.3 ± 1.6 at 30-, 12-, 6-sec interval respectively). There also was a main effect for sex ($F = 52.28$, $p < .001$, $\eta^2 = 0.305$), with boys demonstrating higher METs at each performance trial interval. RPE and fun analyses determined a main effect for each interval (RPE; $F=91.16$, $p<.001$, fun; $F=96.61$, $p<.001$) with no difference in gender at each interval. The average RPE responses were low (3.3 ± 1.8 , 4.1 ± 2.2 , and 4.9 ± 2.7 at 30-, 12- and 6-sec interval respectively) while average fun levels remained high (8.0 ± 1.4 , 8.3 ± 1.4 , and 8.7 ± 1.4 at 30-, 12-, 6-sec interval respectively).

Conclusions: Results indicate that skill practice in all three interval conditions resulted in MVPA. Boys and girls reported equivalent low levels of RPE and high levels of fun. These data demonstrate that the practice of discrete skills yield high levels of energy expenditure (METs), low levels of perceived exertion, and high levels of fun. This study provides positive evidence for the inclusion of discrete skills in physical activity interventions and physical education curricula attempting to promote MVPA.

Classroom Teacher Efficacy Toward Providing Physical Activity Opportunities in Schools

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Background/Purpose: Scholars and agencies across the United States have suggested increasing physical activity (PA) throughout the school day in order to prevent obesity among youth (CDC, 2013; IOM, 2012). Given the limited time youth spend in physical education (PE), classroom teachers play a key role in increasing the amount of time offered for youth to be active. One way for teachers to increase PA is through brain boosters and active learning in the classroom. Teachers who feel efficacious about providing PA opportunities and who participate in PA themselves are more likely to have physically active students (Ernst & Pangrazi, 1999). Given students spend a majority of their time in schools with classroom teachers, not PE teachers, it is important to understand classroom teachers' efficacy toward providing PA experiences. Therefore, the purpose of this study was to confirm reliability and validity of the Teacher Efficacy Toward Providing PA experiences for youth (TETPPA) scale.

Method: Classroom teachers (N=192, Male =34%) responded to the TETPPA scale. There were 98 elementary (K-5) teachers and 94 high school (9-12) teachers who participated in the online survey ($M_{age}=40.45$ years; $M_{experience}=12.75$ years). The scale consists of 18 items Likert type questions with answers ranging from "Not at all confident" (1) to "Fully confident" (5). Demographic data, as well as perceived level of PA data were also collected from participants.

Analysis/Results: Two-group (elementary and high school teachers) confirmatory factor analysis was conducted to assess the measurement quality of the two factor structures (3-specific factors; bifactor with 3-specific factors and general factor) suggested from the previous sample's exploratory factor analysis (Centeio et al., 2018). The 3-specific factor model had poor fit (CFI=.76; TLI=.76; SRMR=.121; RMSEA=.12). The bifactor model with the general factor had better fit ($df=228$; CFI=.85; TLI=.79; SRMR=.071; RMSEA=.10). Examining modification indices, four understandable modifications were made to the elementary portion of the model: a) two within specific component correlations: item9 with item11 and item14 with item15, b) fixed item16 residual to 0, and c) item8 dual-loading on psychological and institutional specific component factors. This resulted in an acceptable fitting model (CFI=.91; TLI=.87; SRMR=.066; RMSEA=.081).

The model was then tested for measurement invariance between the elementary and high school teachers. The model achieved partial weak invariance ($\Delta CFI=.01$) and partial strong invariance ($\Delta CFI<.01$). Homogeneity of latent variances was passed. However, there were significant differences in two of the correlations between

the specific components. Psychological and institutional barriers were not significantly correlated. Psychological and educational barriers were significantly correlated for high school teachers ($r=.52$), but nonsignificant for elementary teachers. Institutional and educational barriers were significantly correlated for elementary teachers ($r=.60$), but nonsignificant for high school teachers. Finally, the three component factors' means were not significantly different from each other; whereas, the general efficacy of the elementary teachers ($M=3.41$) was significantly greater than the high school teachers ($M=2.95$).

Conclusions: The results provide supportive evidence for the bifactor (general factor and three specific component factors) of the teachers' efficacy scale among both elementary and high school classroom teachers.

College Students' Physiological and Psychosocial Outcomes During Virtual Reality

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Background/Purpose: While stationary exercise bikes have traditionally been used to promote young adults' health, virtual reality (VR) exercise bikes may also improve young adults' health while being a more enjoyable physical activity (PA) modality. This study examined differences in college students' acute PA, physiological, and psychosocial outcomes between immersive VR, nonimmersive VR, and traditional stationary biking sessions.

Method: Forty-nine college students (35 females; $M_{age}=23.6$ years; $M_{wt.}=68.2$ kg; $M_{BMI}=23.8$ kg/m²) participated in three separate 20-minute biking sessions: 1) immersive VR biking on the VirZoom VR bike using PlayStation 4; 2) nonimmersive VR biking on the Gamercize bike using Xbox 360; and 3) traditional biking on the Spirit Fitness XBU55 bike. Participants' PA and energy expenditure (EE) were measured using ActiGraph GT3X+ accelerometers, with blood pressure (BP) assessed using an Omron HEM-705CP digital BP cuff. Enjoyment and self-efficacy were examined using validated questionnaires following each session, with rating of perceived exertion (RPE) assessed every four minutes during each session using the modified Borg RPE Scale.

Analysis/Results: One-way MANOVA examined differences between the three biking sessions for all outcomes. Significant differences were observed for BP,

RPE, enjoyment, and self-efficacy among the three sessions ($F(2, 144) = 3.3-32.4$, all $p < 0.05$, $\eta^2 = 0.04-0.3$). Specifically, significantly greater increased BP was observed during traditional biking (19.5 ± 14.4 mmHg) versus Gamercize biking (10.1 ± 8.9 mmHg), but not compared to VirZoom VR biking (16.0 ± 11.2 mmHg), despite participants perceiving VirZoom VR biking as less intense (10.2 ± 1.9) than both the Gamercize and traditional biking sessions (12.9 ± 2.1 and 11.6 ± 11.6 , respectively). Finally, participants enjoyed VirZoom VR biking significantly more (3.8 ± 0.8) than the Gamercize and traditional biking sessions (2.8 ± 0.8 and 2.5 ± 0.8 , respectively) as well as possessing significantly higher self-efficacy during VirZoom VR biking (4.2 ± 0.8) versus the other biking sessions (Gamercize: 3.2 ± 1.1 ; traditional: 3.8 ± 1.0). No significant differences were observed between sessions for PA and EE (all $p > 0.05$).

Conclusions: Observations suggested immersive VR biking may be able to elicit approximately the same amount of physiological response as traditional exercise biking while still being perceived as more enjoyable and less intense. This suggests VR biking may be a feasible and attractive exercise modality for college student health promotion.

Comparing Children's Physical Activity During Three Recess Conditions

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Background/Purpose: Approximately 17%, or 12.7 million children and adolescents, are affected by obesity. Physical inactivity is a modifiable contributor to obesity. Recess during the school day is one major opportunity for children to be active, yet traditional outdoor recess is highly dependent upon weather conditions and/or available space. Thus, the purpose of this study was to determine if a novel physical activity intervention game designed for use in confined spaces and modified to include age appropriate activities would increase the time spent engaged in physical activity (PA) during indoor recess. Additionally, PA was compared during three recess conditions: "typical" indoor recess (TIR), physically active indoor recess (PAIR), and "typical" outdoor recess (TOR).

Method: Fifty-two third grade children from two classes wore triaxial accelerometers for multiple days

within three different 20-minute recess conditions: TIR, PAIR, and TOR. The mean of each participant's data within a given condition was then used to run a repeated-measures (RM) ANOVA to determine if differences existed among PA outcomes (i.e., sedentary intensity, light intensity, MVPA intensity, PA counts, and step counts). A mixed factor RM ANOVA was also conducted to determine whether gender differences existed among physical activity outcomes across the three conditions. Intraclass correlation coefficients were utilized to establish the test-retest reliability of physical activity outcomes within each condition.

Analysis/Results: The PAIR condition yielded a higher level of reliability ($r=0.67-0.89$) compared to the TOR ($r=0.21-0.67$) and TIR conditions ($r=0.59-0.70$) for PA outcomes. PAIR produced significantly greater time spent in MVPA, physical activity counts, and step counts compared to TIR, but significantly less than TOR ($p < .05$). Specifically, participants spent 18.5% (± 0.10), 43.4% (± 0.10), and 74.2% (± 0.12) of time engaged in MVPA during TIR, PAIR, and TOR, respectively. During TIR, PAIR and TOR the participants were sedentary 71.9% (± 0.10), 42.4% (± 0.10), and 17.5% (± 0.10) of the recess time, respectively.

Conclusions: These results indicate that the PA intervention game promotes increased PA during times when inclement weather necessitates indoor recess and larger space requirements for activity are not available. Additionally, using a physically active enhancing game during indoor recess has several advantages including its easy administration, it is user-friendly, it causes very little disruption to classroom space, several exercises can be performed, and intensity and duration of activities can be modified depending on fitness levels and to reduce boredom. While the PAIR condition did not provide as much activity as TOR, it is a viable alternative to TIR.

Comparison of Teen Birth Rates to Median Income, Total Birth Rates, and Various Federal Funding Initiatives by State

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Background/Purpose: Teen birth rates have reported to be declining since 1991, approximately dropping 57% from 2000 to 2016 (Mathews & Hamilton, 2018). Although viewed as progress, the United States teen birth rate is still drastically higher when compared to other industrialized countries, and research indicates demographics and socioeconomic status play a large

part in the teen birth rate (Kearney & Levine, 2015; Yang & Gaydos, 2010). Comparatively, research indicates education is one of the key factors (Mathews & Hamilton, 2018; Stanger-Hall & Hall, 2011). In previous years, the United States government focused funding into abstinence-based only education programs until 2010 when the Department of Health and Human Services introduced evidence-based programs that included comprehensive sex education. Directly after the introduction of this new program option, it reported that the largest decline in teen birth rates occurred at 29% (Blackman, 2016). Common societal beliefs include an increase of government funds/taxpayer dollars for programs such as Medicaid, Women, Infants, and Children (WIC), Supplemental Nutrition Assistance Program (SNAP), etc..., due to the country's high teen birth rate. The purpose of this study is to review government costs for each program per state and the District of Columbia, teen birth rate, total birth rate, median income and population by state as well as look into amount of federal funding states received of abstinence only or comprehensive sex programs to see if there is a relationship.

Method: Secondary data from the year 2016 was collected from the following public information. State data was gathered from the National Vital Statistics Report (2016), Food and Nutrition Service State Activity Report (2016), Statistical Enrollment Data for Medicaid and CHIP (2016), American Community Survey Briefs (2016), WIC data (2016), and the U.S. Census Bureau (2016) from all 50 states and D.C.. Teen birth rates were compared to median income, total birth rate, state population, Medicaid, CHIP, individual and household SNAP amounts, WIC, federal funding of comprehensive sexual education and abstinence-only education. Statistical analysis of all factors relating to teen birth rates was explored with a multiple regression model.

Analysis/Results: Aggregated data on all states and the District of Columbia (n=51) on federal services and finances, compared to teen birth rates, total birth rates, median income and dual sex education was found to be statistically significant on a multiple regression model ($R^2 = .711$, $p=.000$). Detailed correlation notes that only statistical significance existed between teen birth rates and median income ($r=-.664$, $p=.000$) and total birth rates ($r=.447$, $p=.001$). All other variables were not significant and reported a correlation of less than .010.

Conclusions: While there has been a reported decline in overall teen birthrates, notable economic factors like median income seem to play a major role. While not necessarily a cause, the relationship by state between

teen and total birth rates is expected based on cultural and income similarities inside each state and drop in overall birth rates over the past 30 years (Kelly, 2018). The gathering of additional research collectively and longitudinally to compare effectiveness of federally funded programs should be considered.

Criterion-Referenced Validity of Sedentary Behavior Record Using Wearable Cameras

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Background/Purpose: Sedentary Behavior Record (SBR) is a diary-type sedentary behavior measure used to document the amount and types of sedentary behavior in which a participant engages. Evidence of convergent validity has been previously documented with SBR using accelerometer data. What still needs to be examined is the accuracy of the classification of contextual information (i.e., agreement of domains and types of sedentary behavior between SBR and direct observation). Therefore, the purpose of this study is to establish evidence of validity (i.e., classification of accuracy) for the SBR instrument using a criterion measure through a proxy for direct observation.

Method: A total of 27 adults were participated in this study. Throughout a four-day measurement period (i.e., two weekdays and two weekend days), participants recorded their sedentary behavior using the SBR instrument for quantifying sedentary behavior time, and identifying contextual information of sedentary behavior in 10-minute blocks every night. During the measurement period, participants also wore an Autographer wearable camera as a proxy for direct observation. The Autographer camera was worn around the neck with a lanyard. To maximize battery life, the image capture rate was set on the low setting, providing two images per minute. This allowed for approximately 12 hours of data collection (2 images x 60 minutes x 12 hours) resulting in approximately 1,440 images per day during waking hours. Participants were instructed to perform normal daily activities without any behavior modification during the measurement period. Autographer data was aggregated into 10-minute intervals to be consistent with the SBR, where sedentary behavior classification was determined from the majority of activity that occurred within the 10-minute bout. To establish evidence of validity (i.e., classification accuracy) through criterion-reference

approach for the SBR, contingency coefficients (C) were calculated between the SBR and a proxy of direct observation (i.e., the Autograph). For C, agreement was determined between two measures every cell. The C was also compared across domains, types, and time of day. A desirable C is .8.

Analysis/Results: Overall, C between SBR and the Autograph were acceptable ($C=.70$). C were computed for each domain (e.g., nonwork related, work related, transportation) and each activity (e.g., watching TV, computer/mobile/electronic device use, screen based, nonscreen based, etc.) under domains. Among all domains, the highest C was reported for work-related sitting ($C=.87$). Lower C was reported for non-work related ($C=.67$) and transportation ($C=.69$). Also, C ranged from .49-.91 among activities with the highest accuracy in work-related, screen based sitting, yet the lowest accuracy was found in nonwork related computer/mobile/electronic device use. Lastly, C coefficients for each time of a day were similar.

Conclusions: The results of this study suggest that the SBR is an acceptable self-report measure of sedentary behavior in adults. Contextual information of sedentary behavior obtained from the SBR can be used in studies that need to measure work-related sitting, screen-based sitting, or sitting time on transport for studies of the relationship between each sedentary behavior domain and health outcomes, and finally for intervention studies using contextual information of sedentary behavior.

Data-Coaching Effects on Student Physical Activity in the Classroom

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Background/Purpose: Schools have increasingly consulted data coaches, trained individuals who help teachers analyze, interpret, and capitalize on school data (Marsh et al., 2015), to inform practice and improve student learning outcomes (Marsh et al., 2010). Utilizing physical activity (PA) data is an important initial step in the CSPAP planning process (CDC, 2013), but teachers seldom capitalize on such data to guide their PA integration efforts (Dauenhauer, 2014). Recent research discovered that a one-time data coaching session, consisting of a trained facilitator guiding classroom teachers through their students' movement data, resulted in greater student PA and reduced sedentary time in the classroom (Carson et al., 2018). The

purpose of this study was to examine changes in classroom PA between students whose teachers did and did not receive an expanded data coaching intervention.

Method: Classroom teachers ($N=7$; 100% female) and K-2 students ($N=106$; 55% female) in one primary school in the U.S. Mountain West participated in the study. Based on data coaching strategies put forth by Huguet et al. (2014), two CSPAP content experts (1 university faculty, 1 graduate student) facilitated an intervention consisting of two individual data coaching sessions ($M=30$ min each) with four classroom teachers who previously participated in the Carson et al. (2018) study (56 new intervention students). Using one-page accelerometer-derived data reports, segmented by school periods and compared to national recommendations, teachers reflected on their students' PA. The remaining three classroom teachers served as wait-list controls (50 control students), receiving data reports only post-data coaching intervention.

Analysis/Results: Multi-level mixed effects linear regression models, separated by sex and controlling for accelerometer wear time, day of week, and student grade level, race, free-and-reduced lunch status, and body mass index, were used to estimate pre-to-post differences in student PA and sedentary time in the classroom between intervention and control teachers. Male students accumulated more classroom moderate-to-vigorous PA (MVPA) at baseline (intervention: $M=13.52$ minutes; control: $M=12.35$ minutes) than female students (intervention: $M=11.00$ minutes; control: $M=10.54$ minutes). Results yielded significant time by group interactions such that intervention students decreased and control students increased time spent in classroom MVPA from pre to post-intervention (males: -1.99 minutes, $p = 0.02$, 95% CI $[-3.62, -0.36]$; females: -1.50 minutes, $p = 0.02$, 95% CI $[-2.75, -0.25]$). There were no significant effects of time or group for students' classroom light PA or sedentary time.

Conclusions: Classroom teachers are vital for effective CSPAP implementation. Surprisingly, results suggest that while students whose teachers received data coaching had higher baseline MVPA, students' MVPA improved more over time when their teacher did not repeatedly discuss data with a coach. This may be because intervention teachers in this study received data informing them that their students were consistently exceeding national school-day MVPA recommendations (>30 min), so a ceiling effect is possible regarding these teachers' motivation to increase classroom MVPA. Future research should investigate whether these effects inverse among less active students and whether data coaches should emphasize different data, such as student sedentary time. *This study was funded by The Colorado Health Foundation.*

Determinants of Physical Education Teacher Candidates' Social Support and Self-Regulation

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Background/Purpose: Learning environments that provide social support and autonomy result in persistent and positive learning outcomes. Drawing from Social Support and Self-Determination theories, the study examined Ghanaian physical education teacher candidates' (TC) perceived social support and autonomy.

Method: Participants were a purposive sample of 213 TCs (84.04% males and 15.96% females) from one university in Ghana. TCs were pursuing the BSc. (32.76%) and BEd. (67.24%) degrees in PE at the time of the study. The Perceived Social Support Questionnaire (PSSQ) and the Autonomy subscale of the Self-Regulation Questionnaire-Learning (SRQ-L) served as the data sources. The PSSQ consisted of a 6-item 5-point Likert scale. It examined the perceived social support (SSP) TCs received from their lecturers, peers, spouses or significant others, siblings, parents, and extended family members. The SRQ-L (5-item, 7-point scale) assessed TCs' perceived autonomy (AUT) in learning to teach PE. The PSSQ and SRQ-L had Cronbach's alphas of .751 and .646 respectively. Descriptive data were calculated for both SRQ and SSP scales. Independent Samples t-Test and One-Way ANOVA analyses were used to determine gender, type of degree, and marital status differences in SSP and AUT.

Analysis/Results: Most TCs (87.2%) indicated their lecturers and peers (other TCs) were supportive of their pursuance of the PE program. Similarly, most TCs reported moderate to high levels of autonomy. The number of years in the program had a significant negative correlation with SSP. Conversely, AUT positively correlated with SSP. Married TCs had a higher mean SSP score than those who were single or in the "Other" category. The SSP and AUT mean scores for males and females were similar.

Conclusions: Teacher candidates in this study reported moderate to high levels of perceived social support and autonomy. The positive association between AUT and SSP in this study warrants the deliberate provision of autonomy and social support to TCs in the country's teacher education universities.

Development and Validation of Common Content Knowledge Test of Soccer

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Background/Purpose: Common content knowledge (CCK) is knowledge of the etiquette, rules, techniques and tactics of movements (Ward, 2009). Lack of content knowledge has been seen as longstanding problem in teacher education (Barrett et al, 1991; Hoffman, 1987; Siedentop, 2002; Ward, 2009). There are, however, few validated tests of CCK. The development of valid and reliable CCK tests is an important step in evaluating the depth of the CCK possessed by preservice and inservice teachers and in the design of teacher education programs to teach CCK. The absence of sport and movement tests of CCK represents a significant gap in the literature and hinders the ability of the profession to assist teachers. The purpose of this study was to develop a CCK test of soccer and to evaluate the validity and reliability of the test using Rasch modeling (Rasch, 1980).

Method: The study was conducted in Korea. The test was first content validated by soccer and teaching experts. That analysis created a 30 item common content knowledge test for soccer with questions for etiquette, rules, techniques and tactics relative to school physical education. Then, we used Rasch modeling to evaluate the validity and reliability of the test of soccer CCK for teachers of school physical education. Preservice teachers (n=92) majoring in physical education and nonPE majors (n= 111) participated in this study for a total number of participants n =203.

Analysis/Results: The 30 questions demonstrated good item-model fit with Infit and Outfit statistics were greater than 0.5 and less than 1.5 (Linacre, 2011). Results showed that moderately high internal consistency for person-ability (separation index=1.90, Cronbach's Alpha=0.78) and high internal consistency for item-difficulty (separation index=4.03, Cronbach's Alpha=0.94). Both Infit and Outfit statistics showed a good fit between the data and the Rasch model.

Conclusions: The analysis provides evidence to support the validity and reliability of this instrument as a CCK test of soccer. Limitations of the study (i.e., sample size and PE teacher education program) will be discussed and suggestions will be provided to improve the CCK test.

Do Practice Behaviors Predict Improvements in Motor Skill in Young Children?

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Background/Purpose: Mastery motivational climate research has highlighted positive fundamental motor skill changes (prepost test data) in children after participating in targeted interventions. However, a majority these studies have yet to describe the engagement of children within the intervention that elicit these changes. More recently, while there have been some initial studies that have begun to describe children's practice behavior, they have not attempted to link specific practice behaviors with skill improvements. The purpose of this study was to determine if there is a demonstrated relationship between the time spent engaging in particular motor skill activities (locomotor or ball skills), and the relative improvement on those same skills.

Method: 13 preschool age children participated in a mastery motivational climate physical education motor skills program for 7 weeks. Their fundamental motor skills were measured at pre and post-test using the Test of Gross and Motor Development. From this cohort of 13 children, 6 were selected who fulfilled the following improvement profiles: (a) made significant and parallel improvement in both locomotor and ball skills ($n = 2$), (b) made substantive improvement in locomotor skills, but marginal improvement in ball skills ($n = 2$), (c) made substantive improvement in ball skills, but marginal improvement in locomotor skills ($n = 2$). For each of these children, their in-class participation was coded on a 10 second observe/10 second record protocol. Measures included (a) the station focus [locomotor or ball skills], and (b) the student behavior at the station [practicing, observing, off-task]. Percentage time for each station and the percent time spent practicing were calculated.

Analysis/Results: The first level of analysis involved comparing the extent to which the predominant practice activity (locomotor or ball skill station) was that in which the child showed the most improvement. Results showed that for 4 of the 6 children, their practice profiles did indeed match their improvement profiles. That is, these children spent more than 50% of lesson time engaged at stations that focused on the skills in which they made the most improvement. For those children who improved more in ball skills, this figure was a 65% match, while for those who improved more in locomotor skills the match was seen in 80% of all

lessons. When accounting for actual practice behaviors, the combination of time and practice significantly predicted improvements in locomotor performance ($p = .04$), but did not do so for improvements in ball skills ($p = .76$).

Conclusions: While these data suggest that skill improvement in a mastery climate is related to the types of activities in which the children participate, there is still a substantial amount of variance in the practice behaviors both within and between children that would account for these results. Future research might focus on time spent in foundational (e.g., running and jumping) as well as perceptual-motor skills (e.g., climbing and balancing) that might strengthen a child's acquisition of fundamental motor skills.

edTPA Experience During Student Teaching: Barriers, Facilitators, and Future Support

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Background/Purpose: Many Physical Education Teacher Education (PETE) programs require teacher candidates (TCs) to successfully complete edTPA during student teaching. Considering that research remains sparse regarding best practices in edTPA, the purpose of the study was to understand the experiences of TCs and teacher educators (TEs) completing edTPA from a PETE program in a U.S. Northeastern university. Specifically, the study seeks to answer these questions: 1) What are the barriers in completing edTPA?, 2) What are facilitators in completing edTPA?, and 3) What changes should be made to enhance the experience and successful completion of edTPA?

Method: Participants were 24 TCs (10 in the fall and 14 in the spring) and 11 TEs. Seven TEs participated in the fall and 7 TEs (3 of whom also participated in the fall) participated in the spring. Data were collected at the end of student teaching in fall 2017 and spring 2018. Each participant participated in one focus group discussion for approximately one hour. TCs were organized in separate focus group discussions of 3-7 TCs per group. A separate focus group discussion was conducted for the TEs. The focus group discussions were facilitated and moderated by the researchers, using a discussion guide. One question from the TCs' guide included: "What was your overall experience on the submission and completion of edTPA?" A question on the TEs' guide was: "What was your overall experience on supervising edTPA?" The focus group

discussions were digitally audio recorded and transcribed verbatim after data collection.

Analysis/Results: Data were analyzed and categorized to answer the research questions. The results were categorized as: (a) barriers, (b) facilitators, and (c) future support. Overall, the TCs felt that completing edTPA diminished their student teaching experience, as it was tedious and time consuming pertaining to technological difficulties in videotaping, video processing and video uploading. The TCs reported that the provided checklist facilitated in keeping them on track with the three tasks (planning, instruction, and assessment) necessary for the completion of edTPA. Providing deadlines would also facilitate the aforementioned process. The TCs mentioned that university courses that integrated edTPA helped orientate them toward edTPA, but would like edTPA incorporated into more courses earlier in the program curriculum. The TCs felt that submission directions were unclear, making it difficult when submitting edTPA. Upon receiving scores from Pearson, TCs commented that the feedback was unclear and/or not specific enough to know which element of the rubric that they need improvement. The TEs felt minimally prepared in supporting the TCs during the edTPA processes, hence suggesting that more in-depth training is needed for themselves and the cooperating teachers to feel competent in supervising TCs concerning edTPA.

Conclusions: Majority of the TCs felt that edTPA took up time during their student teaching, which had shifted their focus from building effective pedagogical skills to completing edTPA. It is therefore important for PETE programs to find ways to integrate edTPA early in the program to help TCs orientate toward edTPA and feel fully prepared in completing edTPA during student teaching.

Effect of School- and Staff-Level Capacity on Wellness Program Implementation

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Background/Purpose: SWITCH (School Wellness Integration Targeting Child Health) is a multi-component, ecologically-based intervention designed to

support school wellness programming and enhance school staffs' capacity to implement wellness programming. Despite the potential benefits, there is variability in the degree to which schools are able to implement school-wide and setting-specific wellness programming (e.g., Physical Education, classrooms and lunchroom). The assessment of Organizational Readiness for Change or 'Capacity' provides an opportunity to understand factors that impact wellness program implementation at the organizational- and individual-level. The purpose of this study was to evaluate how school (organizational) and staff (individual) Capacity was associated with implementation of wellness programming in SWITCH.

Method: A sample of 25 schools serving 4th and 5th grade students participated in SWITCH in 2017-2018. At each school, a team of three wellness leaders (SWITCH Core Team), made up of school staff, such as school nurses, Physical Education teachers, Food Service Directors/Managers and classroom teachers, facilitated implementation of programming. Prior to beginning SWITCH, school Core Teams completed a survey to evaluate Capacity based on the Organizational Readiness for Change framework using four constructs: Organizational Structural, Organizational Psychological, Individual Structural and Individual Psychological. Structural factors evaluated physical resources (e.g., space, infrastructure) and opportunities (e.g., time) while psychological factors evaluated school and staff beliefs and values (e.g., motivation, commitment, support). Implementation was evaluated using a Checkpoint Survey that was completed by SWITCH Core Teams regarding implementation of SWITCH initiatives at the school ('*Quality Elements*') and setting-specific levels ('*Best Practices*'). Regression and supplementary 2-Way ANOVA models were utilized to evaluate if Capacity was associated with implementation at the school-level. Follow-up analysis explored the impact of Capacity on implementation at specific school/staff levels (i.e., Physical Education teachers, classroom teachers and Food Service Directors/Managers).

Analysis/Results: Twenty-one schools were included in the final analysis (3 private schools and 1 school that lost their principal prior to launching SWITCH were excluded). A regression model evaluating the association between Capacity and implementation controlling for percent of students that received free/reduced priced lunch (%FRL), percent minority students and locality was borderline significant ($p = .08$). A follow-up regression analysis entering each of the four Capacity constructs in the model separately identified the Organizational Psychological construct as a significant factor ($p = 0.049$). Schools were split into low and high Capacity groups (based on a median split) to further examine the impact. A 2-Way ANOVA (low/

high Capacity x %FRL) analysis revealed a borderline significant association ($p = 0.07$), which indicates that schools in the high Capacity group had higher reported implementation compared to schools in the low Capacity group. The partial eta squared statistic indicated that the size of the effect was large, $\eta^2 = 0.18$. Additional analyses on the association of staff Capacity on setting-specific implementation will be presented.

Conclusions: Preliminary analysis supports school Capacity for wellness as a predictor of a school's ability to implement wellness programming. The presentation will summarize the impact of school-level Capacity on implementation and present findings on the influence of staff-specific Capacity on wellness programming implementation.

Effect of Sensory Stimulation on Academics and Behavior in Students

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Background/Purpose: Technological advancements and increased screen time by young children has increased sedentary time and altered the brain development of children. With the reduction in both structured PE and unstructured (recess) activity in schools, increasing physical activity, especially involving sensory stimulation in the early stages of a child's life, can be pivotal in cognitive and behavioral development.

Development of both sides of the brain enables the auditory and visual systems to interact more fully. Activities such as rolling and spinning enhance the sensory system to organize and filter information more efficiently providing the brain quicker and more appropriate responses to environmental stimuli. This study investigated the effect sensory stimulation had on auditory memory, reading levels and behaviors of first through fifth grade students.

Method: During a 6-week period, 176 students, grades 1-5, participated in Minds in Motion, a sensory maze consisting of 15 activities focusing on sensory processing and integration motor skills. One class from each grade served as the intervention group (52 male; 39 female) and participated in 20 minutes of an adapted Minds in Motion maze (10 minutes in both the morning and afternoon). The other class served as the control group (49 male; 45 female), and continued with normal school activities but had no access to the maze.

The intervention group participated in the maze which was adapted with permission from Minds in Motion. Pre and post difference scores of the dependent variables (Auditory Memory Test, Developmental Reading Assessment, and Office Referrals) were calculated.

Analysis/Results: Prior to final analysis, sample population reduction occurred because students were absent the day of testing or did not meet the 80% participation rate. Results of the MANOVA found a significant multivariate F , Wilks's $\Lambda = .95$, $F(3,170) = 2.95$, $p = .034$. Results of the univariate test found significance for Auditory Memory ($p = .029$), with the intervention ($M = 3.51$) scoring higher than the control ($M = 1.87$). Reading level mean differences of the control and intervention groups did not differ. Classroom behavior also did not produce a significant effect.

Conclusions: Data suggests the Minds in Motion maze benefits the auditory memory of children. Although reading levels reported nonsignificance, mean change illustrated improvements after intervention suggesting longer maze time could induce improvement. Qualitative remarks from participating teachers indicated the maze was a positive addition to the school day, especially with classroom management, the variable found to have no positive significance in the study. However, if the study involved a larger sample size, more homogeneous sample, continued beyond the 6-week intervention, or used alternative reading and behavior assessments, the results might be stronger. Further research is warranted as this pilot study suggests the maze can have a positive effect on auditory memory, reading levels, and classroom behavior.

Effects of a Concept-Based Physical Education on Out-of-School Physical Activity

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Background/Purpose: Helping students develop lifelong physical activity behavior has been acknowledged as one primary goal of physical education (e.g., Corbin, 2002; Ennis, 2017). It implies that physical education (PE) should not only improve students' physical activity (PA) in PE or in school but also contribute to their physically active behaviors outside of school. To achieve this goal, Ennis (2017) proposed the concept of "Transformative PE" and suggests that transformative PE focuses on educating students for a lifetime of PA through enhancing students' cognitive decision-making, self-motivation, and personal meaning about PA. Teaching the knowledge about PA and fitness and

the ways to apply the knowledge is proposed to be important components in “Transformative PE” (Ennis, 2017).

Studies have shown that the *Science of Healthful Living* (SHL), a concept-based PE curriculum, is effective to increase middle-school students’ knowledge about PA and fitness (e.g., Wang et al., 2017). It is still unclear about its effect on middle-school students’ out-of-school PA. The purpose of this study aimed to determine the effects of SHL curriculum on eighth-grade students’ out-of-school PA.

Method: This study used a static group comparison design to compare responses between the students who have experienced the SHL curriculum (experimental condition) with those who have not (comparison condition). A total of 394 eighth grade students provided complete data sets for this study. Among them, 168 (42.6%) students experienced the SHL curriculum, 226 (57.4%) students did not. All participants were measured on four variables—knowledge about PA and fitness, autonomous motivation for PE, autonomous motivation toward PA, and out-of-school physical activity—using validated instruments.

Analysis/Results: MANOVA was used to determine the group difference (experimental versus comparison) on knowledge, autonomous motivation for PE and PA. Because the distribution of out-of-school PA was not normal, the Mann-Whitney U Test was used to determine the group difference on out-of-school PA.

MANOVA results showed a significant difference between experimental and comparison group for knowledge ($F=68.91$, $df=1$, $p<.001$, $\eta^2 = .15$) and autonomous motivation toward PA ($F=4.10$, $df=1$, $p<.05$, $\eta^2 = .01$), a nonsignificant difference for autonomous motivation for PE. The Cohen’s d effect sizes showed that the effect size was large (Cohen’s $d= .81$) for knowledge and small for autonomous motivation toward PA (Cohen’s $d= .20$). The Mann-Whitney U test results showed that students in experimental group spent more time than students in comparison group on PA during out-of-school hours (Mann-Whitney $U=16677.50$, $Z= -2.07$, $p <.05$). To calculate effects size, the following formula was used as suggested by Rosenthal (1994) and Field (2009): $r=abs(Z/\sqrt{N})$. The effect size for out-of-school PA was .10, which is considered as a small effect size (Field, 2009).

Conclusions: The findings of this study suggest that students who have experienced the SHL curriculum had higher levels of knowledge about PA and fitness, autonomous motivation toward PA, and out-of-school PA than students who have only experienced the traditional multi-activity PE. This study implies that a concept-based SHL curriculum appears to be an

effective model to promote students’ PA behavior outside of school.

Effects of After-School Programs on Elementary Students’ Health-Related Fitness

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Background/Purpose: The status of K-12 children’s physical activity and fitness levels remain low. Regular participation in physical activities have been shown to be beneficial to health-related fitness (e.g., physical fitness, body composition, blood lipids). After-school physical activity programs (APAPs), as an effective strategy to provide extended opportunities to K-12 students to participating in physical activities and sports, have been suggested to be promoted in school settings. However, limited studies have been conducted to examine the effects of APAPs on students’ health-related fitness in China. Especially, few studies have been conducted among lower elementary students. The purpose of this study was to examine the effects of three APAPs on lower elementary students’ health-related fitness.

Method: A quasi-experimental design with repeated measures was utilized in this study to examine the effects of three APAPs (i.e., soccer, martial arts, and fencing) on lower elementary students’ health-related fitness in China. A total number of 257 elementary students from one elementary school participated in this study. Two groups of participants were involved ($n=95$ for intervention group; $n=162$ for control group). The length of the intervention was one year. The Chinese National K-12 Fitness Test was used to test all participants’ health-related fitness prior to and after the intervention. Five domains were tested: Body Mass Index (BMI), Vital Capacity (VC), 50-meter running, Sit and Reach, and One-minute Jump Rope. A weighted composite score was calculated as students’ total fitness score.

Analysis/Results: A series of ANOVAs with repeated measures were used to analyze the effect of the after-school programs on these five health-related domains and total fitness score. Overall, the results found that participants joined in the APAPs scored higher than those who did not in every domain and the total fitness score. Specifically, main effects were found between two groups in total fitness score ($F(1,251)=9.13$, $p<0.01$, $h^2=0.04$), jump rope ($F(1,251)=9.76$, $p<0.01$, $h^2=0.04$),

and running ($F(1,251)=6.98$, $p<0.01$, $h^2=0.03$), with participants in the intervention group demonstrating superiority over the control group on. The change of total fitness score was statistically different between boys and girls ($F(1,251)=5.53$, $p<0.01$, $h^2=0.02$), with boys making greater progress than girls in their overall health-related fitness over time ($\text{Change}_{(\text{boy})}=3.73$; $\text{Change}_{(\text{girl})}=0.22$). In addition, soccer after-school program demonstrated superiority over other APAPs in improving students' VC and 50-meter running.

Conclusions: The findings showed very similar results as other research studies. It is suggested that APAPs play an important role in developing lower elementary students' health-related fitness on their overall fitness level and cardiovascular strength. Policy makers and schools are suggested to develop more organized APAPs and provide extended opportunities for K-12 students to participating in physical activities and sports. Additionally, different APAPs may have varied influence on different health-related aspects.

Enriching Global Perspectives via Blogging

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Background/Purpose: Growth of on-line education continues to increase in demand and trend in higher education during the last few decades. Key benefits of online courses are convenience and flexibilities of time and space (Hentea, Shea, & Pennington, 2003; Ko & Boswell, 2011; Nguyen, 2010; Sawyer, 2000; Schmieder, 2008; Tinning & Evans, 1994). Along with the growth of online education has been a more recent rise of emphasis on globalization. Consideration of recent emphasis on globalization and online education, faculty in higher education have been inspired to develop instructional strategies, such as study abroad, global link. In this study, global link was developed between US students and students in another county to expand global perspectives through extending spatial boundaries to other country in a virtual setting. The purpose of this study was to explore students' insights related to their global link experiences.

Method: Ten physical education graduate students (F=5, M=5; 1 Asian, 9 Caucasian), engaged in a seven-week global link project with Korean partners as a part of one graduate on-line course, participated in this study. Participants were current inservice physical educators except one who was university graduate assistant

in adapted physical education graduate program. The participants had 3-11 years of teaching experiences. They shared and discussed culture and physical education professional issues with their individual global partner and interacted in whole group sessions using video conferences, emails, blog etc. Several forms of data were collected and analyzed. Open-ended questionnaires were collected prior and after the blog link experiences. Also, recording of emails and blog interactions as well as results of course assignments (e.g., video conferences and reflection on the global link) were collected. The data were analyzed by using content analysis. Trustworthiness and credibility of the findings were maintained with triangulation, peer review and debriefing, and member checking.

Analysis/Results: Participants described their global link experiences as rewarding and enlightening. Based on the data collected, three main themes emerged in this study: 1) gaining global awareness of common issues in PE, 2) discovering comfort zone of communication in blogging with international partners, and 3) incorporating global ideas into their teaching.

Conclusions: The global link project provided participants with unique opportunities to exchange live information with their international partners and to interact with international partners as well as their peers. Sharing diverse viewpoints via blogging was a key strategy that allowed participants to become aware of: 1) common issues in physical education across countries, and 2) importance of being a culturally educated physical educator. This study stressed importance of incorporating global concepts into physical education teacher education programs to prepare students for teaching children with diverse backgrounds in current schools.

Examination of Parents' Perceptions of Their Preschool Child's Physical Activity and Eating Behavior Compared to Actual Behaviors

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Background/Purpose: Children's physical activity (PA) levels are extremely low, have poor eating behaviors, and obesity rates are high across the United States. Recent research has highlighted the influence of the home environment and the parent's role in influencing their child's PA and nutritional habits (Haddad et al, 2017). Parent's and children's PA levels and eating behaviors are related (Liu et al., 2012), but few studies

have compared parent's perceptions and child's actual behaviors. This study examined the relationships between parent's perceptions of their own PA, their child's PA and eating behaviors, and their child's objectively assessed PA, body mass index (BMI) and body fat percentage (BF%).

Method: Participants were preschool children (N=111, 56 girls, $M_{age}=4.06$) from three different preschool centers and their corresponding parents (N=111, 107 Mothers, 4 Fathers). Parents were administered the "Preschool-aged Children's Physical Activity Questionnaire" (PrePAQ) that solicited demographical information, data on parent's physical activity levels, role modeling, and perceptions of their child's physical activity behavior. Parent's also completed "The Child Eating Behavior Questionnaire" (Wardle et al., 2001) to assess their children's eating habits. Physical activity was collected using an Actigraph GT3X+ accelerometer on the child's dominant ankle for 7-consecutive days at 1-second epochs, to collect total day PA. Research staff collected each child's BMI and BF%. SPSS was used to run descriptive and correlation tests on all the variables assessed.

Analysis/Results: The results demonstrate that parent's self-reported frequency of vigorous PA over the entire week (e.g. total day of weekdays and weekend) was significantly correlated with children's vigorous PA (N=78, $r=.291$, $p=.01$) and MVPA ($r=.289$, $p=.01$). Additionally, parent's reported total time spent in vigorous PA in the last week was also significantly correlated with children's vigorous PA (N=76, $r=.272$, $p=0.017$) and moderate-to-vigorous PA (MVPA) ($r=.264$, $p=.021$). However, the number of times the child saw someone being active did not relate to their PA level (N=82, $r=.038$, $p=.733$). Parent's perceptions of their child's PA was not related to their child's actual PA (N=82, $r=.099$, $p=.376$). Specifically, parents "strongly agreed" their child was physically active ($M = 4.5$) when rated on a Likert-scale of 1 to 5. Current standard recommendations for children is 60 minutes of MVPA a day and the accelerometer data revealed that on average, children only engaged in MVPA for 33.94 minutes per day. Children's BMI was significantly correlated with children's eating behaviors (N=100, $r=.242$, $p=.015$), but not significantly associated with BF% (N=97, $r=.127$, $p=.214$).

Conclusions: Parents have an influential role in their children's PA levels. This is supported by the strong relationship between parent's vigorous activity levels and their child's vigorous and MVPA levels. However, parents inaccurately perceived their child's actual PA levels. Parents may not understand the concept of "physical activity" or their role in encouraging their child to be active. A significant association between BMI and children's

eating behaviors suggests that parents may need health literacy and education on how to support their children in establishing healthy behaviors. Promoting both PA and healthy eating can help reduce obesity.

Examining Preservice Classroom Teachers' Perspectives on The Comprehensive School Physical Activity Program (CSPAP)

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Background/Purpose: A Comprehensive School Physical Activity Program (CSPAP) is recommended to engage school-aged students in at least 60 minutes moderate to vigorous physical activity (PA) daily (CDC, 2013). Classroom teachers can play an important role in fulfilling the CSPAP by integrating PA into academic lessons, giving PA opportunities at recess time, and becoming role models (Webster et al., 2016). Additionally, it would be vital for preservice classroom teachers to be educated about the CSPAP because they can be potential facilitators in achieving the CSPAP goals in their future schools after graduation. According to the expectancy-value model (Eccles & Wigfield, 1995), individuals' behaviors, persistence, and task choices can be influenced by their perceived expectancy-related beliefs and subjective task value. Therefore, the purpose of this study was to explore preservice classroom teachers' perspectives on the CSPAP regarding their beliefs and task values.

Method: Participants were 192 preservice classroom teachers enrolled in a public research university (female = 92%; junior = 63%; white = 56%) in the southern region of U.S. Participants answered fourteen 5-likert scale questions about their perspectives on the CSPAP after learning the CSPAP model from a lecture course. They also followed up with open-ended questions about the reasons for each of their choices. Descriptive statistics (e.g., percentage, mean, etc.) were analyzed by SPSS statistics version 25. Guided by the thematic analysis (Braun & Clarke, 2006), the initial codes were generated from the participants' responses on the open-ended survey, and then final main themes were reviewed, defined, and named by three researchers knowledgeable in CSPAP.

Analysis/Results: The results showed that 88% of the preservice classroom teachers believed that the CSPAP is very important or important. Two primary themes emerged: a) High utility value for the healthy and successful child (i.e., beneficial to academic performance, fostering healthy and

active lifestyle); b) High intrinsic value for students' learning (i.e., motivational learning environment). The rest participants' responses revealed two themes: a) Low expectation of success (i.e., not applicable of CSPAP); b) Teaching role stereotype (i.e., not my future job; keeping traditional class style). Regarding the resources needed to implement CSPAP, four primary themes were produced: a) Emotional (e.g., support from teachers and parents); b) Tangible (e.g., financial support, equipment and space); c) Informational (e.g., support from educational agency/department; school administrators); d) Educational (e.g., leadership, knowledge of CSPAP)

Conclusions: The majority of the preservice classroom teachers showed positive perspectives of CSPAP model, and they also provided several good suggestions, which could be the crucial feedback to advance CSPAP in the school settings. The emerged themes indicated that preservice classroom teachers recognized the significant role of CSPAP in promoting students' academic performance and healthy lifestyles. However, more time, practice, and knowledge are needed to build up their beliefs in incorporating PA into academic subjects and recess time. Additionally, it would be necessary for preservice classroom teachers to have opportunities to implement CSPAP model in the actual school settings.

Experimental Study on the Effect of Physical Activity on Academic Achievement in China

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Background/Purpose: The Department of Education in China concerned Chinese elementary children's physical health level which tend to be descending. It may impact elementary children's academic performance. Supportive studies suggested that proper physical activity instruction could promote physical health. Importantly, physical activity is conducive to K-12 students' academic achievement. However, the paucity of research evidence within the Chinese community has not been well-received by students' parents and administrators. Therefore, the purpose of this study was to investigate the influence of physical activity on the academic achievement in elementary schools in Chinese community.

Method: A sample of 572 preschoolers (boys=288, girls=284) participated in this study in Shanghai. The mean time of moderate to vigorous intensity physical activity on weekend (MVPA-MT-wed) of 3 grade students are measured by *3 Day Physical Activity Recall*

Scale. The mean time of moderate to vigorous intensity physical activity in workday (MVPA-MT-wod) are measured by Actigraph Wgt3X-BT. Meanwhile, their academic achievement, which means the final examination results, including the scores of Chinese, Mathematics and English, as well as total scores, are all measured objectively. All the data were analyzed using the large statistical software SPSS24.0 and AMOS22.0. The research methods include descriptive analysis, analysis of variance and regression analysis.

Analysis/Results: The result of the study suggested physical activity impact on elementary students' academic achievement in multiple content areas (Chinese, Mathematics, and English). Specifically, regarding overall academic achievement, the mean time of moderate to vigorous intensity physical activity (MVPA-MT) of grade 3 boys directly influence overall academic achievement ($P=0.006<0.05$). Grade 3 girls' MVPA-MT-wod and MVPA-MT-wed can both affect overall academic achievement respectively ($P<0.001$). Regarding Chinese scores, MVPA-MT of grade 3 boys is not directly related to Chinese scores ($P=0.107>0.05$). MVPA-MT-wod of grade 3 girls affects their Chinese scores directly ($P=0.01<0.05$). Regarding maths scores, MVPA-MT of grade 3 boys is not directly related to maths scores ($P=0.066>0.05$). MVPA-MT-wod of grade 3 girls is directly related to maths scores ($P<0.001$). Regarding English scores, MVPA-MT of grade 3 boys is directly related to English scores ($P=0.006<0.05$). The effect of MVPA-MT of grade 3 girls on their English scores is not significant ($P>0.05$).

Conclusions: On the whole, physical activity have positive effect on pupils' academic achievement. But MVPA-MT does not affect single subject or overall scores of primary school students directly. This could be possibly attributed to influences from MVPA-MT or other indirect elements that affect academic achievement. Future studies may well explore the influence MVPA-MT have on pupils' scores under these circumstances. Hence, students should be encouraged to attend more physical activity. Teachers shall lay more emphasis on physical training teachings, in order to promote the overall development of students.

Exploring Experiences of Undergraduate Physical Education Students' Professional Development Engagement

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Background/Purpose: Professional development (PD) is considered as a key factor to improve teacher quality through providing continuing learning opportunities for teachers (Desimon, Porter, Garet, Yoon, & Birman, 2002; Feiman-Nemser, 2001; Yoon & Armour, 2017). Currently, Blau and his colleagues (2013; 2015) encouraged greater focus on Professional Development Engagement (PDE) to enhance undergraduate students' graduation in a timely manner and appropriate job placement. In physical education (PE), diverse PED has been highlighted in the National Standards for Initial Physical Education teacher Education (NASPE, 2008). Lee et al (2017) also proposed four professional development stages during physical education teacher education program, in which engaging in professional organization and events as a form of PDE is encouraged. In sum, increased emphasis on undergraduate students' professional development engagement has been proposed, but the topic has not been adequately examined. Therefore, this study explored undergraduate students' expectations, experiences, and challenges during their participation in a State Conference.

Method: This study employed a case study design that allows "particularistic, descriptive, and heuristic" (Merriam, 1998, p. 29) information. Seven PE teacher candidates (N=7) who were involved in a professional presentation and attended in a State Conference participated in this study. Data included: 1) semi-structured group interviews, which were conducted prior to and after the conference participation, and 2) researcher's journal, which was taken during the interviews. All interviews were audio-recorded and transcribed verbatim. The data were analyzed by authors of this study using content analysis and constant comparative analysis. Trustworthiness and credibility of the data were examined and maintained through triangulation, peer review and debriefing, and member checking.

Analysis/Results: Prior to the conference, participants mainly expressed three aspects of expectations: gaining new ideas and knowledge, connecting to teachers, and having more time with peers. After their conference experiences, four themes emerged from the data: 1) expanding ideas of modification, 2) widening network, 3) strengthening rapport with peers and faculty, and 4) engaging active learning.

Conclusions: This study revealed that teacher candidates' PD experiences differed from their expectations in two ways: 1) their positive experiences of the conference exceeded their expectations and 2) they did not anticipate the impact of active learning experienced in the conference. Their experiences of active learning during the conference sessions allowed them

to gain not only knowledge about new games and activities but also hands-on experiences of diverse modification ideas. Also, participants connected with current PE teachers as well as teacher candidates in other institutions in the State. Furthermore, they experienced more personal interactions with peers and faculty than expected. Therefore, these PD experiences increased teacher candidates' motivations to prepare for their future teaching careers. This study emphasized the need of PDE experiences during PETE programs. Providing teacher candidates with opportunities of PDE will help expand learning about teaching, create networks for successful job placement, and boost motivation to prepare for teaching careers and for continuing learning.

Exploring the Significance of Recreational Activities for Adults With Intellectual Disabilities

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Background/Purpose: Social inclusion in sport and physical activity is an important component in the daily lives of young adults with intellectual disabilities. Benefits from sport for persons with intellectual disabilities include fitness and health, social acceptance, social competence and positive self-concept. Understanding the perspectives of individuals with intellectual disabilities is an important step in maintaining healthy behaviors and in promoting a sense of well-being. Given that, the intent of this study was to explore the significance of recreational activities in a university setting in the lives of young adults with intellectual disabilities. In order to examine this issue further, we adopted a reflexive process for critically reflecting on knowledge generation. Within the field of social work a trend has emerged to use qualitative practitioner research, including reflexivity, to attempt to improve service delivery and close the gap between delivery and practice. White (2001) suggested that reflexivity should ask the question 'What is?' rather than 'What ought to be?' especially to reflect upon social processes rather than individual tendencies. In reflexive research, objectivity is impossible and reflexive practice is especially critical for exploring experiences related researchers' values, assumptions, and practices.

Method: Twenty-five adults with intellectual disabilities enrolled in a college program people designed for inclusive social and recreational were recruited for the study. The program is designed to give young adults

a college, recreational experience through peer-supported activities. Data collection included informal interviews using photos as verbal prompts, surveys, reflexive journals and field note observations.

Analysis/Results: Data analysis utilized a Grounded Theory approach to familiarize the researchers with the data. Member checking of the data codes were used to assess the fit and relevance of the analysis.

Results: Four primary themes were found. *Knowledge as Co-construction: Identities Discursively Produced* revealed the predispositions and orientation of the researchers' assumptions. Throughout the research process, both investigators recognized their veiled biases toward the participants. The second theme, *I Just Wanna be Around My Friends* recognized the value of our social beings and the need for connectivity. The third theme, *I Get Inspired* drew on the inseparable connection of the researchers' experience engaging with the other. The final theme, *It's Good to be Different* re-positioned disability as uniqueness; that being different is negotiated in and between contexts.

Conclusions: There is a need for more programming in higher education to accommodate the intellectual, social and physical needs of individuals with intellectual disabilities. Given the limited options and multiple barriers facing individuals with intellectual disabilities, researchers should advance agendas that identify factors toward promoting overall health, recreation and quality of life activities. It is recommended that programs identify participants' interests relevant to their experiences. Additionally, scholars should consider engaging in research with people with ID to promote reflexivity, which can assist them in becoming more attuned to their own positioning, values, and worldviews.

Faculty Beliefs Concerning Preparation of PETE Students for Appropriate Practices

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Background/Purpose: SHAPE America's Appropriate Instructional Practice Guidelines, K-12 (2009) provides expert consensus regarding many appropriate as well as inappropriate practices observed in school physical education (PE) programs. Importantly, this document guides teachers, administrators, and policymakers when it comes to creating and maintaining high-quality school PE. The purpose of this study was to examine the extent to which undergraduate physical education teacher education (PETE) programs are preparing their

preservice physical education teachers for implementing appropriate practices.

Method: PETE faculty ($N = 124$) across the United States responded to an electronic survey created by the investigator that consisted of six demographic questions and 77 Likert scale questions adapted from SHAPE America's Appropriate Instructional Practice Guidelines, K-12 (2009). For the Likert scale questions, participants ranked the extent to which they agreed or disagreed that their institution was preparing PETE majors to implement each of the 77 appropriate practices outlined in the document on a scale from 1 (strongly disagree) to 5 (strongly agree). Consistent with the document, the questions/practices were organized into five categories: Learning Environment, Instructional Strategies, Curriculum, Assessment, and Professionalism.

Analysis/Results: Descriptive statistics were used to analyze all demographic and Likert scale data. A paired samples t-test was used to analyze differences in responses between the five categories. An independent samples t-test was used to determine whether responses differed based on participants' gender. A one-way ANOVA was used to analyze participant responses based on academic rank. A Pearson's correlation was used to determine differences in responses based on years of experience, number of full-time faculty teaching in their PETE programs, number of part-time faculty in their PETE programs, and number of graduate assistants.

Mean level of agreement was highest for the category of Instructional Strategies ($M = 4.53$, $SD = .50$), followed by Professionalism, ($M = 4.41$, $SD = .66$), Assessment ($M = 4.38$, $SD = .58$), Learning Environment ($M = 4.36$, $SD = .49$), and Curriculum ($M = 4.33$, $SD = .50$). A significant difference was found between mean level of agreement in the categories of Instructional Strategies and Learning Environment ($t(123) = -7.62$, $p < .001$), Curriculum, ($t(123) = 7.75$, $p < .001$), Assessment ($t(123) = 5.49$, $p < .001$), and Professionalism ($t(123) = 2.65$, $p = .009$), and between the categories of Curriculum and Professionalism ($t(123) = -2.07$, $p = .04$). No statistically significant differences were found between male and female participants except for the category of Instructional Strategies ($t(123) = -2.84$, $p = .005$). No statistically significant differences were found between participants when it came to academic rank, years of experience, number of full-time faculty, number of part-time faculty, or number of graduate assistants.

Conclusions: Overall, faculty were more likely to agree that they prepare their PETE majors to implement appropriate practices in the area of instructional strategies than any other area. Responses were similar

across all demographics measured. PETE programs may wish to examine what they are doing to prepare their majors to implement appropriate practices, as these practices are indicators of high quality physical education.

Fundamental Motor Skills and Physical Activity Level of Elementary Schoolchildren

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Background/Purpose: Fundamental Motor Skills (FMSs) are movements performed freely, or by a specific command or instruction to be executed. They can be classified as Locomotion skills (running, galloping, skipping, hopping and jumping for distance) or Objects Control skills (throwing, catching, kicking, volleying and striking). When considering the known benefits of PAL and the nature of motor development, it is easy to recognize the role of the PE teacher in the development of FMSs and influence on the lifestyle of our children. However, little is known about the relationship and impact of FMSs stages on PAL. The aim of this study was to describe the FMSs and their association with the classification of the Physical Activity Level (PAL) in elementary school students, during PE classes. **Method:** A group of 149 Brazilian schoolchildren of both sexes aged 8.4 ± 1.4 years was submitted during physical education classes to the Test of Gross Motor Development (TGMD-2) to evaluate FMSs of Locomotion and Objects Control. TGMD-2 presents the Motor Development Ratio (QDMA), on a development scale (0-160), to classify children from a “very poor” to “much higher” scale. The Physical Activity Level (PAL) was determined by the Vector Magnitude (VM) given in counts^{-5sec.}, from the Actgraph wGT3X-BT accelerometer, recorded for seven days.

Analysis/Results: The Motor Equivalent Age (MEA) of FMSs in the Objects Control (6.2 ± 1.4 yr; $p = 0.001$) was below the chronological age, but not in the MEA Locomotion (6.2 ± 1.5 yr; $p = 0.127$). Only 19.5% of the children had FMSs levels at or above average. The others (80.5%) showed QDMA with averages from 63.8 to 84.4 points, values of only 39% to 53% of the total possible (160 point). The PAL given by VM (222.4 to 262 counts) classified them as sedentary. The linear regression (β) showed

that the QDMA explained 7.4% of the variance of the VM ($F_{ANOVA} = 11.764$, $p = 0.001$, $r^2_{adjusted} = 0.068$). The variance of the VM is partially explained by the standard Locomotion score (4.8%, $F_{ANOVA} = 7.401$, $p = 0.007$, $r^2_{adjusted} = 0.041$) similarly to the Objects Control (5.8%, $F_{ANOVA} = 9.040$, $p = 0.003$, $r^2_{adjusted} = 0.052$).

Conclusions: The association between the FMSs levels and the school PAL confirms that skilled children can present higher energy expenditure. However, the low level of FMSs warns of the effectiveness of “how” we are teaching PE to our children.

Funders' and Gatekeepers' Views of CSPAP

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Background/Purpose: Understanding decisions to back school health initiatives is crucial to securing future funding and participants. This study was framed within the Community Based Participatory Research (CBPR) Framework recognizing funders, administrators, and researchers as community members. Research universities are uniquely staffed to benefit K-12 schools through training and resources funded by research grants. The Comprehensive School Physical Activity Program (CSPAP) is one health initiative intentionally tying community partnership into its framework. The vicarious benefit funders and administrators enjoy can be easily neglected. To nurture these second-hand benefits, two specific communication types are needed: (a) ascertaining motivations to support, and (b) providing appropriate demonstrations of progress due to their support. This study focuses on the former in order to learn more about the perceptions of community members currently engaged in philanthropy in these ways.

Method: School principals from a single region in the Southwest and board members from a medical center's funding organization were solicited for participation in interviews; all participants were specifically sought out due to providing ongoing support for a CSPAP in their community. Informal interviews were conducted by phone and in person depending on participants' schedules. Interviews were recorded and transcribed, or in the case of phone interviews, answers were transcribed by the interviewer, live. Resulting transcripts were shared for member checks.

Analysis/Results: Three board members and three principals (1 each elementary, middle, and high school

levels) were interviewed. Constant comparison was utilized to identify common themes among responses. The first of three themes was benefactors identifying as members of the community. Comments such as “I’m not really a funder, I’m just a frustrated citizen” broadcast this sentiment clearly. A second theme was a sense of conflict related to schools and health education policies. There was a sense of struggle between viewing the responsibility lying with family “...I don’t think schools should have much to do with it, in that it should be a family thing” versus recognizing necessity due to changes in family structure, parental roles, economic cuts, etc., “...[since] we don’t have good, solid families as we did in times past”. A third theme was a personal commitment to health and fitness, “...all three of us are fit, health conscious...let’s just say doctors don’t make money off of us...”. This theme was echoed in a desire to bring such benefits to others for improved activities of daily life and to save individuals and communities money in the long run “...that’s our perspective, what can we do to make people healthier without spending a lot of money”.

Conclusions: In line with CBPR, in this study, the backers of CSPAP viewed themselves as strong members of the community. This motivated their involvement in seeking out resources to improve the health of their neighbors. Learning more about why funders fund what they do and administrators allow access related to physical activity, physical education, and health can lead to more effective relationships between funders/funding agencies and researchers and administrators leading to better outcomes for everyone.

Health-Related Fitness Knowledge and Physical Activity Among Physical Educators

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Background/Purpose: Public health organizations recommend the promotion of lifetime physical activity (PA) and health-related fitness instruction in schools to help reduce childhood sedentary behavior and improve health outcomes later in life. School physical education programs have a unique opportunity to provide children knowledge and skills to establish and maintain an active lifestyle, provided health-related fitness knowledge (HRFK) is an area of focus and healthy behaviors are modeled by physical education teachers (CDC, 2017). The HRFK of individuals is known to be

associated with increased PA in general populations, however, it has not been examined among physical educators. The purpose of this study therefore, was to examine the relationship of physical education teachers HRFK and their individual PA levels.

Method: A two-part survey assessing the HRFK and self-report PA was administered to physical educators ($N = 796$) from seven US states representing each SHAPE America regional district. Part 1 included the 7-item International Physical Activity Questionnaire (I-PAQ) short form, which measures PA behavior and intensity (vigorous, moderate, light), and is considered a valid measure of habitual PA (Craig et al, 2003). In part 2, ten questions derived from the PE Metrics (SHAPE America, 2010) standards 3 and 4 sample question bank were included in the survey in order to measure participants’ HRFK. It was hypothesized that physical educators’ HRFK is related to self-report PA ($p < .05$). Given the nature of their training and professional responsibilities, a secondary hypothesis was that physical educators would score 80% or more on the HRFK assessment and report PA levels for moderate and vigorous PA meeting the Centers for Disease Control (CDC) recommendations for *additional/extensive benefits* of weekly moderate PA (300 min/week) and vigorous PA (150 min/week).

Analysis/Results: The data collected demonstrated that participants met recommendations for additional/extensive benefit for vigorous PA per week (Mean 149.6 min, 95% CI 157.2 to 142.1), but not for moderate PA (Mean 230.0 min, 95% CI 246.7 to 214.5). Additionally, the participants scored very well overall on HRFK (Mean 84%, 95% CI 84.6 to 82.6). Given the nonparametric nature of the collected data, associations between moderate and vigorous PA and HRFK were examined through Spearman’s rank order correlations. The association between vigorous PA and HRFK was significant ($\rho=0.129, p<0.001$), however moderate PA was not associated with HRFK ($\rho=0.013, p=0.725$).

Conclusions: The data from the present study suggest that physical educators are both knowledgeable of health-related fitness and participate in high amounts of weekly PA. Physical educators’ degree of HRFK does not appear to practically relate to their weekly vigorous PA or correlate to any degree with moderate PA, however, their weekly minutes of moderate and vigorous PA meet the minimum CDC recommendations for *substantial health benefit* (150 min/week moderate, 75 min/week vigorous PA) and meet the recommendation for additional/extensive benefit with regard to weekly minutes of vigorous PA (150 min/week). Future research should explore the impact of physical educators’ HRFK and PA on their instruction and related student outcomes.

High School Students' Perceptions of Using Desk Cycles

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Background/Purpose: The conceptual framework of comprehensive school physical activity programs (CSPAPs) support students' physical activity (PA) throughout the school day and academic year. This study was supported by the institutional factors in the ecological model (Bronfenbrenner & Morris, 1998) indicating that the classroom environment can be a determinant of health. Development of PA programming for classrooms is an effective strategy to enhance students' physical activity beyond physical education classes (Faber et al., 2007). The purpose of this study was to examine students' perceptions of using under-desk cycles in their classrooms.

Method: As part of a locally funded preliminary study focused on high school classroom teachers' PA integration, teachers were able to request PA equipment for their classrooms. Eight teachers requested desk cycles for their classrooms and their students were invited to use the cycles and share their perceptions over three months. Students with help from classroom PA leaders, were in charge of keeping track of their activity data using logs provided by teachers. Student cycle participants logged: (a) total minutes on the bikes, (b) total distance, and (c) reasons for using the bikes. Interviews were also conducted to learn about students' perceptions related to desk cycle use.

Analysis/Results: Descriptive data analysis showed that at least 28 students from the eight classes used the desk cycles daily. Desk cycle usage demonstrated an upward trend throughout the week (less use on Monday), with Thursdays seeing the highest volume. Seventy-three students reported their distances with an average of 5.04 miles. Significant differences were found in minutes between males ($M= 14.32$, $SD= 11.02$) and females ($M= 18.37$, $SD= 12.97$); $t(142) = -2.025$, $p= .045$. There was no significant difference in the distance between male ($M = 4.96$, $SD = 3.40$) and female ($M= 5.32$, $SD= 3.41$); $t(67)= -.434$, $p= .666$. The top three reasons reported on the log for using the desk cycles were fun, exercise, and to stay alert/focus. Two themes emerged from the student interviews: (a) students enjoyed cycling and keeping track of their physical activity in class and (b) students were able to maintain focus for a longer period of time if they cycled. For

example, one female student mentioned "It feels pretty good after" while a male student mentioned "Um, I think it actually helps improve my working, because it kind of like, gets me multitasking and, I really am not sure how, but it just makes it seem easier."

Conclusions: As one approach to increased school day PA, providing PA equipment alone into the classrooms can encourage students' discretionary PA participation. The desk cycle was effective in promoting physical activity levels and positive attitudes toward active classrooms, supporting insight into CSPAP implementation at the secondary level. Supporting the ecological model, institutional support for PA in the classroom led to increased teacher support for PA in the classroom as well as more active students. Further study regarding collaborations (e.g., community support and PA opportunities in schools) and CSPAP implementation) is warranted.

Homeschool Children's Fundamental Motor Skills and Fitness Levels

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Background/Purpose: It is estimated that over 2 million children are homeschooled in the USA (Ray, 2011). However, little is known about homeschoolers' fundamental motor skills (FMS) and fitness levels. The literature has shown that children who are more proficient at FMS are more likely to be physically active and fit (Spessato, Gabbard, & Valentini, 2013). Higher levels of physical fitness have been associated with many health benefits, including increased bone health and self-esteem, lower risk for cardiovascular diseases and higher physical activity levels later in life (Kabiri, Mitchell, Brewer, & Ortiz, 2017). Therefore, the purpose of this study was to investigate homeschool children's FMS and fitness levels.

Method: A group of 17 homeschoolers participating in a physical education program at a university located in the southeastern region of the USA were invited to participate in the study. Six participants (four boys) ages 8-11 years old (9.6 ± 1.4) had their FMS measured by the TGMD-2 (Ulrich, 2000). The test was used to classify the FMS in two subtests (Locomotor and Object Control) and the quotient of the large motor development (QLMD). Additionally, eleven participants (five girls) ages

6-11 years old (10.9 ± 2.2) took the FitnessGram® to evaluate their health-related fitness components: 1) BMI (body composition); 2) Curl-Up (abdominal strength and endurance); 3) 90° Push-Up (upper body strength and endurance); 4) PACER (aerobic capacity); and 5) Back-Saver Sit and Reach (flexibility).

Analysis/Results: Relative analysis was conducted to express frequencies of the FMS levels and FitnessGram® and descriptive analysis was performed for chronological and equivalent motor ages. The statistical package SPSS (23.0) was used with significance previously established ($\alpha = 0.05$). Scores for the TGMD-2 Locomotor and Object Control subtests showed that 33% and 83% of the children were classified as “average”, respectively. Only 33% of the children scored “average” on the QLMD. No children reached a score higher than “average” on any test. The mean motor age equivalent for the Locomotor and Object Control subtests were 6 years and 11 months and 7 years and 10 months, respectively, which were lower than the mean chronological age of 9 years and 6 months. The percentages of homeschooled children reaching the Health Fitness Zone (HFZ) on the FitnessGram® were: 82% (BMI), 73% (Curl-Up), 36% (90° Push-Up), 13% (PACER); 100% (Back-Saver Sit and Reach).

Conclusions: The results indicated that the children in this study have not developed their FMS as they should have. Only one third of homeschooled children were “average” for their motor development (QLMD). Additionally, the results indicated that homeschooled children are not reaching the expected level of physical fitness. While a high percentage of children achieved the HFZ for the BMI, Back-Saver Sit and Reach and Curl-Up tests, they performed poorly in the 90° Push-Up and PACER tests. These results suggest that homeschooled children have low upper body strength and poor cardiovascular endurance. The findings from the study highlight the importance of providing homeschooled children with opportunities to develop FMS to be more physically active and physically fit in order to improve their health.

How Active Are We? Exploring Physical Activity Participation in African American College Women

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Background/Purpose: An abundance of physical activity (PA) literature focuses on African American (AA) females in the K-12 and older adult populations.

Research lacks in relation to AA collegiate women's PA levels. Suminski, Petosa, Utter and Zhang (2002) found that minority women, particularly AA, are the least physically active in college. With AA collegiate women being the most sedentary population, it is important to seek out information to better understand the PA levels of this population. Often, college campuses are prime locations to promote and encourage a physically-active lifestyle, therefore possibly decreasing this population's sedentary behaviors and health risks (Racette, Deusinger, Strube, Highstein, & Deusinger, 2005). The purpose of this study is to examine AA collegiate women's actual PA participation using constructs from the Theory of Planned Behavior (Ajzen, 1991) and the Integrated Behavioral Model (Montano & Kasprzyk, 2015).

Method: A total of 97 AA undergraduate women were recruited for this study. Participants' weekly PA participation perceived environmental condition, and Theory of Planned Behavioral (TPB) variables (i.e., intention, attitude, subjective norms, perceived behavioral control) were measured using validated instruments. Environmental barriers were measured through an adapted PA Neighborhood Environment Scale (PANES) (Sallis et al 2010); PA levels were measured through the International Physical Activity Questionnaire (IPAQ) (Craig et al, 2003); and the four major theoretical constructs in TPB were assessed using a TPB scale (Ajzen, 2004). All measurements were taken via Qualtrics, an online survey service.

Analysis/Results: The IPAQ scoring allows the data to be analyzed in 3 different units, for this study we explored duration (minutes per week) and intensity in various PA domains. Participants spent the most time engaging in PA at work. Participants spent an average of 296 minutes walking at work, 217 minutes walking as a form of transportation and 114 minutes of PA related domestic responsibilities within one week. Participants spent the least amount of time engaging in leisure moderate activities (23 minutes) and vigorous leisure PA (32 minutes). A hierarchical regression analysis was conducted to identify the predictive functions of TPB variables and perceived environmental conditions on the overall PA involvement. The model was significant $F(9, 86) = 2.24, p < .05$ and accounted for 19.0% of the variance in total PA involvement. Two predictors were statistically significant: Perceived environmental condition ($\beta = .28, p < .01$) and attitude ($\beta = .28, p < .05$) were the strongest predictors of total PA involvement.

Conclusions: This study provided new findings about AA collegiate women. The IPAQ provided a new spectrum of PA participation for this population; showing that AA college women are both active and sedentary.

While they may not meet MVPA leisure guidelines participants are highly active in other domains such as work, transportation and domestic duties. The results showed that two factors; Attitude and perceived environmental condition should be considered when examining PA engagement. While these factors have been suggested and theorized and used within similar settings, using TPB constructs and environmental factors together in a population made up of strictly AA collegiate women are new and should be explored further.

How to Use a Growing System to Teach Health Education

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Background/Purpose: The importance of child health is becoming more prominent as health surveillances indicate links between childhood and adult behaviors. Gardening programs come as a result of farm-to-fresh initiatives that aim to link students with food production, increase access to healthy and local foods, and serve as an educational opportunity. The purpose of this study was to examine how aquaponics growing systems can be used as a health education teaching model within middle school classrooms.

Method: Participating middle school teachers (n = 17) attended three interactive workshops focusing on how to integrate growing systems into their classrooms. Researchers administered semi-structured interviews using open-ended questions focusing on integration and implementation strategies, aesthetics of the systems and how they fit within their classrooms, and overall system functionality.

Analysis/Results: Three specific themes emerged from participant responses including: increase in experiential learning; learning about ecosystems; and lessons learned from implementation.

Conclusions: Health education teachers can use growing systems to teach health ecosystems in a learner centric environment using hands on activities.

Impact of a Technology-Based PE Learning Task on Ninth Grade Students' Situational Interest

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Background/Purpose: In a recent report on teens, social media and technology, Anderson and Jiang (2018) found that 95% of U.S. teens ages 13 to 17 have access to a smartphone and 45% say they are online “almost constantly”. Researchers have started to consider teens’ motivation to interact daily with digital technology as a leverage to promote their engagement and learning in physical education (Bodsworth and Goodyear, 2017; Legrain et al., 2015; Palao et al., 2015). For example, Legrain et al. (2015) found that implementing digital technology integration in PE lessons have an impact on students’ motivation and cognitive skills. Because digital technologies represent an affordance for students in classrooms (i.e. an invitation to action; Conole & Dyke, 2004), situational interest may be a relevant theory to study students’ motivation related to technology integration in physical education (PE). Indeed, Chen et al. (2006) has defined situational interest as “*the appealing effect of the characteristics of an activity on individuals*” (Chen et al., 2006, 237). The goal of this study was to investigate in which extent a technology-based physical education learning task impacts students’ situational interest compare to a traditional learning task. We hypothesized that we may be able to promote students’ situational interest through technology integration in PE.

Method: Three classes of nine grade students participated in this study (N=85; 54.11% girls; $M_{age}=15.11$; $SD=0.4$). Two classes (N=55) practiced a learning task during the second lesson of a badminton unit. During this task, students played one against one on a badminton field and were observed by students to determine shuttlecocks spatial dispersion on their opponent field using the digital application “PE Badminton” with a tablet. One class (N=30) practice the same learning task with observers using a traditional paper and pencil sheet. Immediately after practicing the task, students responded to the Situational Interest Scale (including novelty, challenge, attention demand, exploration intention, instant enjoyment and total interest). Fidelity of intervention was insured through observations.

Analysis/Results: Descriptive, univariate and multivariate analysis were conducted to answer the research question. Results revealed significant differences between the experimental and control group on instant enjoyment ($F(1, 83) = 9.65, p < 0.003, \eta^2 = 0.104$), attention demand ($F(1, 83) = 16.076, p < 0.00, \eta^2 = 0.162$), novelty ($F(1, 83) = 95.793, p < 0.00, \eta^2 = 0.536$) and, no differences on total interest ($F(1, 83) = 0.33, p < 0.56, \eta^2 = 0.004$), challenge ($F(1, 83) = 0.456, p < 0.50, \eta^2 = 0.005$) and, exploration intention ($F(1, 83) = 0.08, p < 0.77, \eta^2 = 0.001$).

Conclusions: This study demonstrated that PE teachers can impact students' situational interest when introducing digital technology. Data were discussed in relation to the impact of technology integration in PE on students' situational interest, the impact of the structural model of situational interest when designing technology-based learning task in PE and, the development of an individual interest for PE through technology based on the four-phase model of interest development.

Impacts of Heart Rate Monitors in University Physical Activity Courses

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Background/Purpose: Physical activity (PA) levels during college predict PA engagement after college (Calfas, Sallis, Lovato, & Campell, 1994; Pearman et al., 1997; Sparling & Snow, 2002). Hence, university PA courses play an important role in developing physical literacy for college-aged adults. Researchers found college students reported "enjoyment" as the top reason for enrolling in PA courses (Beaudoin, Parker, Tiemersma, & Lewis, 2018). Moreover, SHAPE America (2014) describes PA enjoyment as a key characteristic of a physically literate individual.

Wearable technologies have been widely adopted as an instructional tool in K-12 physical education programs (Lee, Burgeson, Fulton, & Spain, 2007). Researchers have investigated perceptions and motivational implications of using PA monitors with elementary, adolescent, and high school students (Clapham, Sullivan, & Ciccomascolo, 2015; Kerner & Goodyear, 2017; Partridge, McClary-King, & Bian, 2011). Although the use of technology is recommended as an appropriate instructional strategy in university PA courses (NASPE, 2009), literature on the effects of utilizing PA monitors with college students is sparse. Particularly, the implementation of heart rate monitors (HRMs) in university PA courses may render insightful implications regarding PA enjoyment for college students.

The emphasis on professional development at the university level presents an additional research opportunity grounded in self-efficacy theory. Beliefs about self-efficacy for using technology are impacted by mastery experiences, vicarious experiences, and social persuasion (Bandura, 1997). Essentially, integrating HRMs into teaching and learning activities during

university PA courses may impact efficacy for using HRMs in professional career fields related to PA promotion.

Method: A quasi-experimental study was conducted over the course of three consecutive academic semesters to assess the impact of integrating HRMs into 6-week university PA courses on PA enjoyment and efficacy for using technology. Students ($N = 49$) in the experimental condition (tennis, basketball, badminton) wore HRMs during class activities, whereas students ($N = 37$) in the control condition (beach volleyball, soccer, indoor volleyball) did not wear HRMs. All participants completed pre and post-test questionnaires to assess changes in physical activity enjoyment (Physical Activity Enjoyment Scale; Kendzierski & DeCarlo, 1991) and efficacy for using technology (PETES; Efficacy for Using Technology Subscale; Humphries, Hebert, Daigle, & Martin, 2012). Data were analyzed using SPSS 24 to determine changes in the distribution mean scale scores from pretest to posttest.

Analysis/Results: Students wearing the HRMs ($M = .42$, $SD = .72$) reported significantly higher changes in PA enjoyment compared to students not wearing the HRMs ($M = -.07$, $SD = .65$, $p = .006$). Students in the experimental condition also reported significantly higher improvements ($p = .024$) between pre and post-tests on efficacy for using technology ($M = 1.09$, $SD = 1.66$) compared to students in the control condition ($M = .44$, $SD = 1.40$). Overall responses from open-ended questions indicated that HRMs were perceived as beneficial and relevant in a variety of career fields.

Conclusions: HRMs can be a useful technology in university PA courses to promote PA enjoyment and increase student efficacy for using technology. Importantly, college professors may wish to integrate HRMs to promote physical literacy for college students.

Increasing Schoolchildren's Physical Activity Through Supervised and Organized Recess

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Background/Purpose: Acknowledging that PE alone is not sufficient to meet children's health needs, whole-school approaches for physical activity (PA) promotion such as the Comprehensive School Physical Activity Program (CSPAP) have been developed. In CSPAP, recess and PE are particularly interesting since most schools offer it and it thus reaches all children. It has

been observed that PE and recess, as part of the CSPAP program, are often disconnected, although they might strengthen each other. In this study, the content of PE was similar in two experimental conditions: supervised and organized recess. The effects of supervised and organized recess on children's PA were investigated and compared with their PA during regular recess.

Method: Nine 3rd grade classes from nine elementary schools constituting 189 children (10-12 years old) were randomized over supervised or organized recess. In supervised recess, children were free to play and physical education (PE) teachers ensured safety. In organized recess, PE teachers provided games. Organized as well as supervised recess took place in the school's gymnasium and was tied to the content taught in PE, while regular recess took place on the school's playground and was unrelated to the content taught in PE. Data were collected using the System for Observing Children's Activity and Relationships during Play (SOCARP).

Analysis/Results: Whereas during regular recess only boys achieved the 50% benchmark of MVPA, boys and girls achieved on average 70% MVPA in supervised recess and 63% MVPA in organized recess. Vigorous PA was significantly higher in organized compared to supervised and regular recess for boys (41% versus 34% versus 22%) and girls (34% versus 27% versus 16%).

Conclusions: Results highlight the importance of supervised and organized recess for achieving the 50% MVPA benchmark in girls. A CSPAP program in which PE and recess are connected might enhance MVPA during recess.

Integrative Intervention Improves Young Children's Gender Stereotypes and Motor Competence

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Background/Purpose: During the early years of childhood there are stark sex differences in object control skills. Further, early object control skills often predict physical activity (PA) in adolescence. Thus, compared to boys, girls may be at a greater risk for low PA behaviors. However, girls typically do not present anthropometric differences when compared to boys during the early years. Thus, it is unclear why the disparities for object control skills exist across gender during this highly influential time. The purpose of this study was to explore the

effects of an intervention on children's actual fundamental motor skill competence (e.g., locomotor and object control skills) and their gender stereotypes about performance of fundamental motor skills.

Method: Research staff collected demographics and anthropometrics for girls ($n = 40$) and boys ($n = 45$), aged 3-5 years. All children completed a modified assessment of stereotypic response, the Children's Occupational And Trait (COAT) which measures children's flexibility, awareness, and endorsement of stereotypes for both locomotor and object control skills. All children completed the Test of Gross Motor Development-2 (TGMD-2) concurrently to assess locomotor and object control skills. Afterwards, children were assigned to either the intervention ($n = 50$) or control ($n = 35$) conditions. After 10-weeks of intervention (2 days/week, 30 min./session), we assessed all participants again on both the COAT and TGMD-2.

Analysis/Results: At the pretest, a 2-sex X 2-group MANOVA revealed no significant differences for Body Mass Index, COAT, or locomotor skills ($p > .05$). There were significant differences in object control skills by sex ($p < .05$) but not for group ($p > .05$). A 2-sex X 2-group X 2-time repeated measures MANOVA showed a significant main effect for time and group ($p < .05$) but not sex ($p > .05$). For the COAT variables, there was a significant time X group interaction for 'awareness' ($p < .05$) but not for 'endorsement' ($p > .05$), or 'flexibility' ($p > .05$). There was a significant time X group interaction for locomotor skills ($p < .05$), but not for object control skills ($p > .05$). At the post-test, there were significant differences by group for all variables of interest ($p < .05$). There were significant differences for object control skills by sex ($p < .05$) but not for any other variables ($p > .05$).

Conclusions: Girls revealed lower object control skills than boys at the pretest regardless of group. There were no gender stereotype differences at the pretest. At the post-test, children in the intervention group reduced their stereotypes while improving their locomotor and object control skills. Children in the control group maintained stereotypic beliefs and their locomotor/object control skills remained significantly lower than the experimental group.

Investigating the Effects of Physically Active Brain Breaks on College Students' Physical Activity Levels and Perceived Experiences

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Background/Purpose: Approximately 80% of adults in the United States do not attain the recommended 150 minutes of moderate-to-vigorous exercise each week (Centers for Disease Control and Prevention, 2012). This is precipitated by an increased amount of time spent in environments that inhibit movement and promote sedentary behaviors — at work, at home, and in cars. College-aged students (18-29) also engage in a greater amount of sedentary behaviors as they encounter a transitional period in life where many are making independent lifestyle choices for the first time (Deliens, Deforche, Bourdeaudhuij, & Clarys, 2015). Despite the trend toward physical inactivity, higher education has the capacity to develop and employ methods that can impact students' physical activity behaviors. Therefore, this study examined the effect of physically active brain breaks on college students' physical activity levels and their perceived experiences.

Method: The present study employed a mixed methods embedded sequential design. This approach was used to help explain participants' perceived experiences within the context of an experimental intervention (Creswell, 2011). Participants ($n = 117$) in the present study included an experimental group ($n = 65$) and a control group ($n = 52$). All participants wore pedometers for 11 weeks during a teacher preparation course, totaling 150 minutes per week. Post intervention, a sample of participants were interviewed. Utilizing the constant comparison method, data was compared and contrasted until thematic categories surfaced that aligned with the emerging themes from the study (Glaser & Strauss, 1967).

Analysis/Results: The average daily step count for the experimental group was 149.47 ($SD = 87.90$) and the control group's average daily step count was 132.67 ($SD = 39.03$). An independent samples t -test was conducted to determine if there was a statistical significance between the experimental and control groups' mean daily step counts. The t -test revealed a nonsignificant trend in the predicted direction. While the findings were not statistically significant, participants who were interviewed elicited overwhelmingly positive experiences. Three themes emerged from the interview data that are critical to the discussion of participants' perceived experiences with physically active brain breaks: (1) experience is essential; (2) variety is key; and (3) physical activity is engaging for all.

Conclusions: Even though the quantitative findings did not indicate a statistically significant increase in physical activity levels, the data did reveal that students were in the mid-range of the low activity step index (Tudor-Locke, Johnson, & Katzmarzyk, 2009). While the

researchers assert that these results are not ideal, it does signify that students who participated in the physically active breaks did obtain more steps on average than the control group. Additionally, students' perceptions revealed that they were more engaged during class, confident in their ability to implement physical activity, and cognizant of the impact physical activity can have on their own health and learning in the classroom.

Just Google It: An Observational Study of Youth Searching for Online Health Information

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Background/Purpose: Two National Health Education Standards focus on students' ability to analyze the use of technology on health behaviors and to demonstrate the ability to access valid information to enhance health. Research indicates that youth frequently utilize the Internet to search for health information; however, little has been done to understand how youth search for health information, if or how they determine the information to be credible, and how they use the information they do find. The primary aims of this study were to: 1) Explore and identify how adolescents search for health-related information on the Internet; and 2) Assess whether adolescents identify health information to be credible.

Method: Youth completed the following: 1) a demographic survey, including questions assessing frequency and current use of the Internet as it relates to searching for health information; 2) the "eHealth Literacy Scale" to assess perceptions of skill level in searching for online health information; 3) an observational study in which students found answers online to case-based scenario questions related to nutrition and physical activity topics; and 4) a follow-up interview. Qualitative and quantitative data were collected and analyzed.

Analysis/Results: Eight youth, mean age 15.2 ($M = 3$, $F = 5$), participated. Four main findings were identified. First, youth often accessed sites determined not to have credible information. Secondly, youth accessed troublesome websites, such as websites promoting false information or negative behaviors (e.g., promotion of eating disorders). Third, credible websites that were accessed were written at a high readability level, often at or above the 10th grade reading level. Students who accessed these sites generally left the website in 20 seconds or less and did not use information from the site to answer the questions. Finally, seven of the eight

students answered half or more of the questions incorrectly and frequently utilized websites containing inaccurate information to answer the questions.

Conclusions: Results indicate: 1) in order to address the two National Health Education Standards, more education needs to be devoted to teaching youth the skills necessary to better determine the credibility of online health information. This in turn may indicate that teachers instructing in health-related content areas need to be further trained on distinguishing the credibility of websites and how to effectively disseminate this information to students; and 2) credible websites need to present health information so that it is readable, understandable, and more usable for youth and adults.

Longitudinal Association Between Youth Fitness and Academic Achievement

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Background/Purpose: The purpose of the current report is to evaluate longitudinal associations between fitness and academic achievement in Cobb County. The focus of the analyses was on Body Mass Index (BMI) and Aerobic Capacity (AC) since past research has shown stronger associations with these indicators.

Method: Academic achievement data were available in Cobb county data in both 2013 and 2015 so these years were the focus of the analyses. Data were available from three subjects (math, science, and reading) for 3rd, 5th, 7th, and 9th grade students (biology and algebra were used to substitute for science and math for 9th graders). Fitness data for the same years were obtained through the FitnessGram[®] program as part of the state mandated annual fitness assessment. De-identified fitness data were merged with de-identified academic achievement data using student IDs. To provide a more useful indicator of change in fitness, we computed changes in BMI and AC using the change in Healthy Fitness Zone continuum (HFZc) score.

Analysis/Results: The majority of students remained in the same BMI HFZ categories over the three years. Approximately 6.5% of overweight or obese students in 2013 moved into normal weight category in 2015. However, a similar percentage of students moved from normal weight into the overweight or obese category in 2015. Compared to children with decreased BMI HFZc, children from the young cohort (i.e., 5th graders in 2015) with similar or improved HFZc values between

2013 and 2015 (i.e., reductions in BMI) had higher academic achievement scores for math, science, and reading in 2015. However, there were no associations between change in HFZc scores between BMI and academic achievement among older students (i.e., 7th and 9th graders in 2015). The majority of the students remained in the same AC HFZ category over the three years. Approximately 14.8% of the students moved from the Needs Improvement – Health Risk in 2013 to the HFZ in 2015. Approximately, 12.5% students moved from the HFZ in 2013 to the Needs Improvement – Health Risk zone in 2015. There were no associations between HFZc scores for AC and academic achievement with exception of 7th grade girls (in 2015) that had either similar or improved AC HFZc score achieved higher math and science scores than their peers with decreased AC HFZc.

Conclusions: The results revealed reductions in BMI is associated with higher academic achievement for elementary students but not for older cohorts. No such association was found for AC and academic achievements except for 7th grade girls.

Mapping the Research Trends in Physical Activity of Children and Adolescents Using Topic Modeling

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Background/Purpose: The purpose of this study was to examine research trends in the field of physical activity (PA) of children and adolescents using topic modeling. Research questions were (1) what were the major research topics of PA in Korean citation index (KCI) and social science citation index (SSCI)? (2) What were hot topics and cold topics in PA research? (3) What were the main themes of research on girls' physical activity?

Method: Physical activity and youth-related peer-reviewed research papers were collected to map out the research trends and topics using Web of Science database. This study analyzed abstracts of the youth physical activity papers published in Korean Citation Index (N=967) and Social Science Citation Index (N=13956) during 2002 and 2017. The data were analyzed by the text-mining package, yTextminer and the visualization tool, Gephi.

Analysis/Results: The results of the study showed that PA and youth-related scientific papers are classified into five categories: (1) Health outcome studies, (2) Measurement, PA levels & trend studies, (3)

Determinants or correlates of PA, (4) Interventions papers, and (5) Policy and practice studies.

Conclusions: First, this study indicated that among the subdomains in KCI topics, determinants of physical activity and physical activity levels, trends, and measurement were less studied as compared to other categories. PA studies in SSCI emphasized on moderate to vigorous physical activity while PA studies in KCI focused more on students' emotional and character development. Also, KCI studies in interventions showed the impact of school PA program while SSCI studies emphasized the comprehensive school PA program incorporating home and community. Second, there is the growing trend in the research topic such as obesity, but the community environment appeared to be descending. The number of research on topics of PA and parental role declined in KCI but the upward trend in SSCI. Third, in girls' physical activity, the majority of topics were related to school, home, and emotion. The implication of this study was discussed in terms of what will be done to promote PA and youth-related studies.

Measuring Self-Efficacy in Skills-Based Health Education: A Pilot Study

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Background/Purpose: Skills-based health education (SBHE) is aligned with the National Health Education Standards (NHES) and is designed to help students develop self-efficacy (SE) related to the NHES skills. However, no known tool exists to evaluate whether students' SE improves related to the NHES following completion of a health education (HE) course. Therefore, the purpose of this study was to develop and pilot a tool to examine the impact of a SBHE course on students' health-related SE.

Method: A survey instrument was developed that maps onto NHES grades 9-12 performance indicators (PIs), and piloted among 9th and 10th graders enrolled in a HE course in Massachusetts (spring 2018). Subjects rated their SE, using a scale of 0-10 (0=cannot do at all, 10=highly certain can do), on PIs for five standards (NHES # 2, 3, 5, 7, 8) at pre and post time points. Additional questions addressed: resisting peer pressure, self-advocacy/communication, stress-management and CDC priority behaviors (healthy eating, physical activity, alcohol, tobacco use, illegal drug use, sexual activity). Initial content validity was established based on

NHES, SE literature, and review by subject matter experts during survey development.

Analysis/Results: A total of n=177 (pre) and n=171 (post) students completed the survey (83% of all students at post-test). Subjects identified as 50% male, 86% White and the majority report academic grades of mostly As (50%) or Bs (47%).

A priori, a threshold of 6 or higher was established to represent "high SE". The change in proportion of students achieving this level was assessed for each survey item. Continuous subscale scores were calculated as the average of corresponding items for each of the skills and behaviors. Scores were summarized using descriptive statistics (mean, SD) and independent t-tests were used to compare means pre versus post. Data were analyzed overall and stratified by grade level. Analyses were completed in SAS 9.4 and Excel.

The proportion of 9th graders achieving "high SE" increased for 21 of 33 skill items (+1%-+12%) and 16 of 24 behavior items (+1%-+5%). The proportion of 10th graders achieving high SE increased for 18 of 33 skill items (+1%-+10%) and 10 of 24 behavior items (+1%-+15%). Mean subscale scores ranged from 6.63-9.30 (pre) and 6.83-9.42 (post) (9th); 6.40-8.57 (pre) and 6.45-8.83 (post) (10th). There was a statistically significant increase in the accessing information subscale among 9th graders (pre: M=7.51, SD=1.80, post: M=8.09, SD=1.86, p=0.03). No other changes were statistically significant, but change in the hypothesized direction occurred in 11 of 14 subscales overall.

Conclusions: Students reported high levels of self-efficacy at baseline but improvements were seen upon completion of the HE course in both grades. This study was an important first step in understanding the impact of SBHE on SE. Future research should include further tool validation in diverse student populations, and deeper exploration of SE as it relates to the NHES and health education.

Middle School Students' PA Patterns, Fitness Levels, and Functional Movement

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Background/Purpose: Middle school physical education is an ideal time to improve students' movement quality and encourage cardiovascular and muscle-strengthening activities outside of class for behavioral change directed toward lifetime fitness. The purpose of this study was to evaluate students' current self-report

PA levels, fitness levels, and movement mechanics through functional movement screens of the hips, lower back, and core stability.

Method: Students from a Midwest school district (N = 200, 42.5% male and 57.5% female) in grades 7-9 (35.5%, 27.0%, 36.5%) completed measures, which included: 1.) demographics and background questionnaire, 2.) self-report PA (Leisure Time Exercise Questionnaire, Godin and Shepherd, 1985), 3.) fitness testing: push-ups, broad jump, PACER, BMI, and 4.) functional movement screens: squat screen and posture screen.

Analysis/Results: Descriptive data indicates that students' weekly cardiovascular exercise is inconsistent (37.5%) or approaching 150 minutes of moderate physical activity (42.0%), while 22% indicate they perform vigorous intensity cardiovascular exercise for at least 75 minutes per week. The majority of students (60%) do not work all muscle groups twice a week and total weekly METS (M = 74.06) is well below the required physical activity recommendations. The functional movement screens, squat screen and posture screen had nearly 40% of all students performing below proficient (42.5% and 38.0%). Analysis indicates the squat screen correlates with all fitness measures; push-up ($r = .309, p < .001$), broad jump ($r = .265, p < .001$), PACER ($r = .288, p < .001$), and negatively correlates with BMI ($r = -.278, p < .001$). The posture screen also correlates with all fitness measures; push-up ($r = .303, p < .001$), broad jump ($r = .224, p = .002$), PACER ($r = .202, p = .007$), and negatively correlates with BMI ($r = -.147, p = .040$).

Conclusions: The following indicates that students overall physical activity behaviors are poor; this is even with self-report data which is customarily over reported than under reported. The squat screen and posture screen correlate well with fitness measures but 40% of students are not proficient in these basic functional movements. It is imperative that physical education classes are equipping students with the correct tools to stay physically active and fit for their lifetime, which includes having functional movement patterns and postural stability to avoid injury and enhance movement quality in activities of daily living.

Online Communities of Practice to Support Preservice Classroom Teachers

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Background/Purpose: In the context of comprehensive school physical activity (PA) programs, movement integration in the academic classroom has been considered effective for the promotion of PA among children. However, efforts for the professional development and motivation of classroom teachers to successfully implement this strategy are vague. Preservice education provides a promising platform for early intervention with classroom teachers to increase their desire and competency to engage in PA promotion. Online communities of practice (CoP) have been used extensively in education for professional development. An online CoP can provide training, support, and a platform for professional interactions related to movement integration. Incorporating online CoP in preservice education constitutes a new strategy that hasn't been evaluated before in the context of classroom PA promotion. The purpose of this study was to provide evidence on the efficacy and effectiveness of an online CoP as a potential tool to motivate, educate, and support preservice teachers to integrate movement in their future classrooms. Specifically, this study examined the effect of an online CoP within a PA promotion course for preservice teachers (intervention), compared to a traditional course (control), on perceived competence, values, barriers, and intentions for movement integration in their future classrooms. A secondary aim was to assess the feasibility of the CoP in preservice education.

Method: A total of 71 preservice classroom teachers ($M_{age}=22.47\pm 4.55$) from two universities were randomly assigned to the intervention ($n=36$; 2 course sections) and the control ($n=35$; 2 course sections) group over a semester. Participation in the online CoP (named Move for Thought) lasted for 10 weeks and was implemented as part of an assignment in the course. Before and after the intervention a survey measuring perceived competence, value, barriers, and future intentions on movement integration from existing valid and reliable questionnaires was administered to both groups. Additional data on the experience from the CoP (value, enjoyment and intentions to visit the CoP) were collected from the intervention group.

Analysis/Results: Internal consistency was acceptable for all measures ($\alpha > .70$). Repeated-measures analysis of variance showed a significant increase in perceived competence [$F(1,69)=9.18, p=0.003, \eta^2=.12$] and value [$F(1,69)=7.36, p=0.008, \eta^2=.10$] for movement integration in the intervention group, compared to the control group, which either remained stable or decreased over time. The intervention group also had a significant decrease in perceived barriers for learning new content

related to movement integration [$F(1,69)=5.28, p=0.025, \eta^2=.07$], compared to the control group. No interaction effect on intention emerged. The experience from the CoP was highly valued ($M=5.87\pm 0.87$) and enjoyable ($M=5.01\pm 1.20$) for the participants who also reported they intended to visit it in the future to get additional knowledge on movement integration ($M=5.34\pm 1.17$). Participation in the CoP included, on average, 9.45 active days, and ranged from 6 to 42 posts ($M=23.80\pm 6.78$) per participant who received, on average, 12 comments per post they shared.

Conclusions: This study provides evidence on the effectiveness of an online CoP within preservice education for the promotion of classroom PA as well as recommendations to easily implement online CoPs to preservice teachers.

PE Teacher Resilience and Psychological Flexibility as Indicators for Intent to Remain Teaching in High-Poverty Schools

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Background/Purpose: Physical Education (PE) teachers hold a unique position in schools as being one of only a few teachers in a school building that have multiple opportunities to build relationships with students over consecutive school years. For the students in high-poverty schools whom oftentimes grow up without a consistent supportive adult in their lives, PE is uniquely positioned to provide consistent opportunities for personal wellness and social-emotional development to occur over many years. Little is known about PE teachers with resilient dispositions and the psychological factors that promote resilience. The purpose of this study was to investigate PE teacher resilience by examining teacher workplace psychological flexibility relative to intention to remain teaching in high-poverty schools.

Method: A random national sample of physical educators working in high-poverty schools representing each SHAPE America regional district participated in a survey measuring resilience, workplace psychological flexibility, and teachers' intention to remain teaching in high-poverty schools. In total, 540 teachers (25% response) completed electronic questionnaires.

Analysis/Results: A random national sample of physical educators working in high-poverty schools

representing each SHAPE America regional district participated in a survey measuring resilience, workplace psychological flexibility, and teachers' intention to remain teaching in high-poverty schools. In total, 540 teachers (25% response) completed electronic questionnaires. Frequencies and percentage of total responses to questions regarding resilience, psychological flexibility, and intent to remain teaching in high-poverty schools were calculated. The survey items were analyzed through factor analysis and structural equation modeling as part of procedures to establish the survey as a valid and reliable instrument to measure resilience and psychological flexibility and predict teacher likelihood to remain in high-poverty schools. The majority of teachers in this study (76.9%) were considered to have elevated resilience according to the Connor-Davidson Resilience Scale¹⁰ (CD-RISC 10). Related to the measure of workplace psychological flexibility (WAAQ) a high-percentage of teachers (82.8%) were found to have increased workplace psychological flexibility. More than half of teachers surveyed (60.3%) reported that they intended to remain teaching in their current high-poverty schools for the next three school years.

Conclusions: School districts can create environments that either support or inhibit teachers' attitudes about their jobs by the organizational structures and cultures they create in schools and through the relationships they foster. Physical education teachers possessing the individual dispositions toward increased resilience and psychological flexibility are more likely to remain teaching in high-poverty schools. Because teacher attrition has a negative influence on the educational system—especially in high-poverty schools, providing resources to build resilience and psychological flexibility in teachers is critical to their professional success and development as well as for the success of high-poverty schools.

Perceived MVPA of College-Age Students

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Background/Purpose: The primary purpose was to investigate college students' perceptions of their own physical activity (PA) levels while supervising preschoolers on the playground. Previous studies have shown that preschoolers mimic the behaviors displayed by adults (Dyment & Coleman, 2012; Gehris, et al. 2014). College students, who major in Early Childhood Education (ECE) cite lack of training in

PA/physical education as a barrier to promoting PA to preschoolers on the playground and perceive safety and supervision as their main role rather than the promotion of PA (Lanigan, 2014; Wright, 2013).

Method: Qualitative phenomenological research was used with a pre/post interview format combined with Actiheart® monitor system to record the level of activity reached. Twelve college students were questioned as to their perceived expected moderate to vigorous physical activity (MVPA), and given instructions to engage with the children and to support safety while on the playground. Each student wore an Actiheart® monitor during three sessions on the playground. Finally, students were interviewed as to their perceived achieved MVPA.

Analysis/Results: During preinterviews, 10 of the 12 students believed they would maintain MVPA levels for the majority of the outdoor session. Following the outdoor sessions one of the remaining 10 participants realized that they were not really engaged in activity with the students during the majority of the activity time. In fact, only 4 students engaged in MVPA at all and never for a full 10 minutes (minimal CDC guidelines for health related activity). Post interview sessions allowed the primary researcher to explain the resulting discrepancy of perceived activity exertion to the participants. The post interview also included questions which established whether the lack of MVPA during the recess was due to miscommunication concerning the student's role with the children or to the student's inexperience with a realistic level of sustained MVPA.

Conclusions: ECE students have inaccurate perceptions of their level of physical activity while on the playground. When the college student's perception of MVPA is not accurate, the student may not be providing the role model to preschoolers necessary for engagement in MVPA during recess. Perception of PA and the actual PA did not coincide in this research for the college students. This study emphasizes the need for Teacher Education programs to include more information on motor skills, PA, and MVPA to the current undergraduates studying to become teachers, specifically for ECE.

Perceptions of an Early Field Experience With the Homeschoolers

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Background/Purpose: A typical early field experience (EFE) has been done when teacher candidates (TCs) go to a local school and observe, assistant and/or teach

physical education lessons. During this EFE, however, homeschoolers were brought to university campus and received weekly sport skill lessons (SSLs). The purpose of the study was to examine (a) the perceptions between TCs and health promotion majors (HPMs) on the EFE with the homeschoolers and (b) the differences between this EFE and a typical one by the TCs.

Method: The participants were 39 college students (15 TCs and 24 HPMs) enrolled in two activity/lecture courses in two consecutive quarters. The SSLs were built into the courses as part of the EFE where homeschoolers aged 4-12 years were brought to university gymnasium once a week. The hour-long lessons included throwing and catching, striking with a paddle, dribbling with hands, and target games. All lessons were planned and delivered by a pedagogy faculty, and the participants worked with the homeschoolers in pairs. At the end of each lesson, the participants completed the *critical incident reports*, through which three significant occurrences during the lesson were reported. *Informal discussions* between the faculty and the participants before and/or after each lesson were also recorded. At the end of each quarter, *focus group interviews* were conducted with 2-4 participants at a time. Follow-up questions in response to their answers were carried out through *email correspondence*. Lastly, the participants' reflection papers and pictures taken during the lessons were gathered for *document analysis*.

Analysis/Results: Data were analyzed using an analytic induction and constant comparison approach. Both TCs and HPMs noticed that most homeschoolers listened well and wanted to learn ("I'm surprised how well they listened.", "Kids seemed pretty occupied with the activities.") although there were a few who acted opposite ("I didn't like how wild Brain got.", "Jake kept saying it was hard and kept quitting."). They also spoke highly about the bonding experience with their homeschoolers ("Enjoyed getting to know Jesse better.", "Anna wrote me a note. I'm gonna miss her."). By comparison, the TCs expressed more from the pedagogical perspective ("Taught my girl proper techniques to hit a balloon.", "Not sure how to correct Olivia's forehand swing.") while the HPMs mentioned more on the behaviors ("Child got frustrated so he just gave up.", "The kids enjoyed the competition and they never got tired of running!"). As for the differences, the TCs liked this EFE better than a typical one because of convenience ("It was part of the class so I didn't have to go [to a school] on my own time."), interaction ("I like the one-on-one interaction with Jed and see him getting better as the quarter goes on."), and organization ("The activities were structured and actually made them sweat.").

Conclusions: This EFE allowed the participants to directly take on the teaching and learning activities with the homeschoolers. Pedagogy faculty members may consider such collaboration with different community groups and create EFEs that may produce better teaching and learning opportunities for future physical educators.

Perceptions of Barriers and Facilitators to School Physical Activity Promotion

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Background/Purpose: Many children are not meeting the United States Health and Human Services (2008) recommended 60 minutes of physical activity (PA) per day despite the health and cognitive benefits (Troiano et al, 2008). Comprehensive school physical activity programming (CSPAP) as a multi-faceted school-based approach has the potential to promote physical activity for children through coordination of activities and creating a culture of movers. Understanding the PA facilitators to CSPAP implementation is essential for interventionists to successfully build successful CSPAP.

Method: Physical activity leaders (n= 10) and administrators (n=4) from five northeast United States school districts participated in the case study. Each interview was transcribed using deductively-developed codes from Carson's et al. (2014) school-based Physical Activity Promotion Framework, a social-ecological model of interactive influences (components, facilitators, leaders, culture) on children's physical activity behavior. Schools were visited and key physical activity programs were observed yielding field notes. Trustworthiness procedures of peer debriefing, member checks, and data triangulation were enacted to ensure quality of the data.

Analysis/Results: The findings indicate that the influential elements were similar but were either a barrier or facilitator depending on the district. Key barriers included administrator and teachers' dispositions (i.e., not valuing PA and the CSPAP coordination of components), lack of skill and knowledge (CSPAP initiation, implementation, and institutionalization), time (state mandates), lack of resources (i.e., budget, facilities, space, staff), and culture (school personnel not following policies or not invested in PA programs, the attendance of undocumented students, and lack of student interest). Facilitators were administrative support, budget, and invested school personnel willing to work

beyond the regular school hours, and supportive outside community organizations.

Conclusions: Although there were many barriers, the implementation of school change seem possible assuming that there were school personnel willing to run programs and supportive administrators who would engage in innovative scheduling. In addition, the influence of families and community engagement programs seemed to be key influential elements, which is missing in the Carson et al. (2014) model.

Personal, Family, and Community Habits Through an Early Childhood Lens

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Background/Purpose: For some children, increased health risks are attributable to their proximal and immediate environments. The present study assesses child health-related behaviors relative to environmental influences that may hinder sleep, decrease physical activity (PA), and increase weight.

Method: At families' homes, observation and assessment of family and environmental surroundings were conducted in a low-income, high risk population in Detroit, Michigan. The Early Childhood HOME Inventory was utilized to evaluate parent and child interactions, household internal features, and surrounding environmental stimuli. Environmental factors as they relate to children's PA, weight and sleep were assessed by strata (a) outside play is safe or unsafe, (b) dwelling structure is safe or unsafe, (c) in-home space is not crowded or overcrowded and (d) in-home space is clean and not cluttered. Children (n=36) with a $M_{age} = 5.0$, wore an Actigraph Accelerometer on their wrist measuring sleep patterns and physical activity over a six-day period.

Analysis/Results: When outside play was safe, there were significant associations between light PA and weight ($r = -0.47$; $p \leq .05$), and between total sleep and weight ($r = 0.85$; $p \leq .01$). When outside play was not safe, there was a significant association between weekend moderate to vigorous physical activity (MVPA) and weight ($r = -0.48$; $p \leq .05$), and weekday MVPA and in bed time ($r = 0.55$; $p < .01$). When the dwelling structure was safe there was a significant association between in bed time and sedentary time ($r = -0.5$; $p < .01$) and MVPA ($r = 0.43$; $p \leq .05$) and total sleep was associated with MVPA ($r = 0.47$; $p \leq .05$).

When the dwelling was unsafe there was a significant association between weekend MVPA and weight ($r = -0.87$; $p \leq .05$) and in bed time was associated with MVPA ($r = -0.98$; $p < .01$). Crowded living spaces exhibited significant associations between in bed time and sedentary behavior ($r = -0.51$; $p \leq .05$) and total sleep and weight ($r = 0.54$; $p \leq .05$). In clean homes there was a significant association between light PA and weight ($r = -0.59$; $p \leq .05$).

Conclusions: Our results indicate that children are disposed to experiencing reduced PA and increased weight amounts while residing in unsafe and unsystematic environments. Child sleep is correspondingly pertinent to immediate and proximal environments as children demonstrated significantly reduced bouts of sleep. We can conclude from our study that children display higher concentrations of health-related behaviors as a result of environmental influences. Measures such as improving bedtime habits and family structure could have valuable impact on child sleep and PA. Furthermore, behavioral patterns involving parents could be explored to assess possible changes to improve child health.

PETE Teacher Candidates' Preferred Teaching Styles

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Background/Purpose: Helping students learn in physical education is a challenge as classes are composed of students with varying abilities and interests. In addition, learning in this environment must be linked to motor, cognitive, and affective educational dimensions. When planning lessons, one aspect teachers must decide upon is what instructional methods to use to help students learn. A well-known formal system of instructional frameworks is Mosston's Spectrum of Teaching Styles that consists of 11 different styles designed to create different environments in order to aid all students' learning. Based on the instructional diversity the teaching styles provide, learning to use different styles should be an integral part of preservice teacher candidates' training if they are to be successful in aiding student learning. The purpose of this study was (a) to see if teaching styles were chosen with equal probability in a university PE high school teaching methods course, and (b) to see if there was a difference between the distribution of styles used by males compared to females.

Method: This study was conducted in a physical education teacher education (PETE) program at a university

located in the Intermountain West of the United States between 2011 and 2017. The participants were 104 PE teacher candidates taking a high school teaching methods course (28 males and 76 females). Teaching styles are taught and modelled by the instructor in each of three teaching methods courses. In the high school methods course teacher candidates are filmed as they teach in the schools. Video footage is uploaded into a digital video editing software and using coding buttons for predetermined teaching competencies, the candidate must code and save a video clip of their best example of each competency. One of the competencies is to show evidence of teaching using Mosston's command style of teaching. Another competency requires the candidates to provide a video clip of another teaching style besides the command style. They choose from the following styles: practice, reciprocal, self-check, inclusion (reproductive styles) and guided discovery, convergent discovery, and divergent discovery (productive styles) and include that style in their lesson plan. Each participant's chosen teaching style was recorded.

Analysis/Results: A chi-square goodness of fit test was calculated to see if one or more of the selected teaching styles was more popular than at least one other, and a post hoc test compared all pairs of proportions. A two-sided normal-based test was used to test whether reproductive and productive styles were equally popular. A test for independence of gender and preferred teaching style was conducted, followed by post hoc tests. The following pairs of teaching style proportions were significantly different: practice with all the other styles except reciprocal. Overall, reproductive styles were more popular. Female candidates preferred reproductive styles at a significantly higher rate than male candidates and male candidates preferred productive styles at a significantly higher rate than female candidates.

Conclusions: Recommendations are made for environment enhancement to help develop productive styles.

Physical Activity in Schools and Its Effects on Academic Achievement

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Background/Purpose: The Centers of Disease Control and Prevention recommend that children should perform at least 60 minutes of moderate to vigorous

physical activity (PA) each day. It has been well established that regular PA provides various physical and mental health benefits for children, but the possible effects on academic achievement for children have not yet been fully explored. In 2011, the state government of Colorado (USA) passed legislation for the 2011-2012 academic year that required all public elementary schools in the state to provide students with at least 600 minutes of PA each month, or about 30 minutes of PA each school day. This study examines the relationship between PA levels and academic achievement, and student behavior in 27 school districts that completed a three-year initiative to increase and improve PA opportunities for students.

Method: To assist schools in complying with this state policy, Kaiser Permanente of Colorado created an initiative that provided funding to 27 school districts for PA professional development for teachers and staff as well as resources to promote additional PA opportunities before, during, and after school. Data were collected for three types of PA: classroom PA (CPA), before and after school PA (BAPA), and designated physical education or recess PA (PERPA). Randomly selected teachers reported CPA for a one-week period two to three times each semester. Each school's designated health coordinator reported BAPA data, and PERPA data was determined using the schedule of activities for each school. The average minutes of PA per school per day was calculated by summing CPA, BAPA, and PERPA then dividing by the number of school days. Difference-in-difference and discontinuity analyses were used to determine the relationship between PA and academic achievement.

Analysis/Results: Within three years of the policy implementation, all schools participating in this initiative were meeting the requirements of the state regulations. Most PA minutes were offered as PERPA. Schools that participated in the PA initiative saw greater academic achievement during the three years of PA programming as compared to nonparticipating schools. The significant effects of the initiative on academic achievement were observed during the first year of PA programming; subsequent years saw stable achievement but not significant growth. There did not appear to be differences in negative student behavior between schools based on participation in the PA initiative.

Conclusions: Providing funding for PA to implement programming before, during and after school can increase the number of minutes provided to students throughout the school day. Our findings affirm the ostensible connection between PA and positive academic achievement, although academic appears to be

a plateau after the initial improvement observed when PA programming is introduced. PA in schools may have positive effects on academic performance in addition to the well-known physical and mental health benefits associated with PA.

Physical Education Cooperating Teachers' Participation and Beliefs as Teacher Educators

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Background/Purpose: Physical Education Cooperating Teachers (PECTs) are a necessary and integral component of physical education teacher education (PETE) programs, often the last link between preservice teacher preparation and teaching certification. Clarke et al. (2014) identified 11 teacher educator roles in which CTs engage during the student teaching experience, including: providers of feedback, gatekeepers of the profession, modelers of practice, supporters of reflection, gleaners of knowledge, purveyors of context, conveners of relation, agents of socialization, advocates of the practical, abiders of changes, and teachers of children. Further exploration into the ways in which PECTs identify and participate in these roles is needed, as PECTs' awareness of, participation in, and beliefs about these roles are unclear.

The purpose of this study was to identify if PECTs' participate in and determine PECTs' beliefs about the importance of each of the 11 teacher educator roles throughout the student teaching experience and if a relationship exists between participation and beliefs. Research questions included: (RQ1) What level of participation of the 11 identified teacher educator roles do PECTs participate in during the student teaching experience?, (RQ2) What level of importance do PECTs believe PECTs should participate in the 11 identified teacher educator roles during the student teaching experience?, (RQ3) Is there a relationship between participation and beliefs of PECTs regarding the 11 identified teacher educator roles? Together, these findings offer PETE programs an understanding of how to best prepare PECTs for their roles during the student teaching experience.

Occupational socialization theory serves as the framework for this study to understand the careers and pedagogical decisions of physical education teachers. (Richards, et al., 2014). Teacher beliefs is the second theoretical construct which informs this study, as there

are significant relations between teachers' beliefs, attitudes and practices (TALIS, 2009).

Method: This study included a quantitative online survey, which comprised a set of 13 questions, including a 22-item rating scale about participation and beliefs of the teacher educator roles. Participants included 118 PECTs from 14 states who had 3-43 years of experience as a PECT and had a ST in the past 5 years.

Analysis/Results: Results were tabulated and analyzed using SPSS. A Spearman's correlation was calculated to determine the relationship between PECTs participation and beliefs. The data revealed that the mean level of participation in the 11 roles was $GM=4.59$ and the mean level of beliefs about PECTs participation in the 11 roles was $GM=4.69$. The data also suggest a high correlation exists between the participation and beliefs of the PECTs.

Conclusions: This study identifies and highlights how PECTs in the United States participate and their beliefs of the 11 teacher educator roles. The results presented Thus, answering a call from Clarke et al. (2014) who stated that 'without a clear understating of the ways in which CTs participate- or are expected to participate- in teacher education, it is difficult to know how best to support of facilitate that work' (p. 164).

Physical Education Professional Identity: Before Versus After Student Teaching

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Background/Purpose: Teachers' professional identity (PI) refers to the types of teacher that one attributes to oneself (Gee, 2000). Teacher preparation can have a significant impact on PI (Beaucham & Thomas, 2009). Researchers have found that student teaching influenced preservice teachers' understanding in effective practices and their self-efficacy in teaching physical education (Barney & Pleban, 2006; Gao et al., 2014; Keating et al., 2017). However, preservice physical education teachers' PI (PPET-PI) before and after student teaching has yet to be studied. This study aimed to address this research gap by examining the differences of PPET-PI between students with and without student teaching experiences.

Method: Six PPETs from a four-year university participated in a 1-hour semi-structured interview about their program experiences and PI. When the interviews were conducted, two female PPETs had completed their student teaching two months earlier (Post-ST) and the

other four (one female, three males) were in their last semester prior to their student teaching practicum (PreST). All of the interviews were audio-taped and transcribed verbatim.

Analysis/Results: Using Dynamic Systems Model of Role Identity (DSMRI, Kaplan et al., 2015) as the theoretical framework, two researchers coded the data with the four DSMRI components in NVivo. Next, the responses between Pre and Post-ST PPETs in each DSMRI component were compared. The leading researcher then conducted an axial coding to identify generic themes. Coders' discussions, member checking, and peer debriefing were conducted to ensure the trustworthiness of the analysis.

Three themes emerged from the data analysis: role ambiguity, pedagogy focused, and professional belonging. First, Post-ST PPETs perceived to be in full charge of students' learning like other school teachers. PreST PPETs, however, were uncertain about the amount of agency they could have in schools and felt they were "above students but below school teachers." Second, Post-ST PPETs used specific pedagogical strategies (e.g., role modeling, scaffolding, etc.) when describing their PI, whereas PreST PPETs' used more general qualities, such as hard-working, skillful public speaking, and confidence. Lastly, Post-ST PPETs started to develop a sense of professional belonging. They have established meaningful professional relationships which mutually benefit their teaching and a variety of stakeholders in the university and schools. However, this was not found among PreST PPETs. They believed they were "supposed to absorb as much knowledge as possible" from university professors and experienced limited interactions with students and teachers in schools.

Conclusions: The Post-ST PPETs in this study identified themselves as emerging teachers who had achieved a certain level of authority, acquired pedagogical strategies, and developed a sense of professional belongings. On the other hand, PreST PPETs experienced uncertainty in the roles they played in schools and had yet to develop meaningful professional affiliations. To foster a strong PI, teacher educators are suggested to address the issues of role ambiguity and engage PPETs in service learning in professional communities and organizations, preferably from early stages of teacher preparation.

Physically Active in the Classroom—To Be or Not to Be?

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Background/Purpose: The purpose of this study was to investigate current health knowledge and practices of preservice teachers and their future intentions to integrate physical activity (PA) into classroom programming. Grounded in the theory of planned behavior (Ajzen & Fishburn, 1980, 2005) this study considered participants' value of PA, PA integration self-efficacy, and intentions to teach this content. Previous research indicates a tendency for those who personally value PA to be more likely to integrate it in the classroom (eg. Cothran, Kulinna, & Garn, 2010). However, these studies have not taken into consideration future intention of preservice teachers on the topic.

Method: In a coordinated effort with medical professionals, a survey was developed and pilot tested targeting future teachers' knowledge and thoughts on PA. Used to gain insight into the teacher education students overall knowledge about health and PA behaviors/consequences, general knowledge PA and health questions ($n=9$) came from the Fitness For Life High School curriculum (Corbin & Le Masurier, 2014). Questions focused on avoidance of heat exhaustion, national PA recommendations for children and adults, and chronic diseases such as diabetes and heart disease.

Analysis/Results: Results were favorable for demonstrating health-related knowledge; 96% responded correctly indicating how to avoid heat exhaustion (drink more water) as well as understanding the term *Hypokinetic* refers to conditions more prevalent in those who are less active (46% correct), and these types of conditions contribute to the leading cause of death in the U.S. (48%). 92% understood that Type II Diabetes has become more prevalent in children. Only 68% recognized that building bone strength requires weight-bearing activities such as jumping and running. Respondents were split regarding leading cause of death in the United States; the correct answer is Cardiovascular Disease (only 38% responded correctly) while other options chosen included Cancer (51%) and Diabetes (12%).

One question asked which subject(s) they would likely integrate PA; multiple answers were allowed. Responses included Mathematics (71%), Science (60%), Reading (48%), and Language Arts (54%). For personal habits, 42% indicated at least 30 minutes/week of moderate to vigorous physical activity. 93% felt it is the teachers' role to include PA. Overall 89% plan to integrate this in their future classrooms and the same percentage indicated they would participate with their students during

classroom PA; however, only 43% feel they've had adequate training within their education to prepare them for integrating PA. ANOVA was significant among majors in their intention to integrate PA; Tukey post hoc results specified the significance between Elementary (98.6%) and Secondary (75%) majors ($p=.007$).

Conclusions: Results suggest future secondary teachers may need more exposure to ideas for integrating PA into their classrooms. Several studies have previously addressed topics related to integration at the primary school level, but not at the high school level. Although many resources support PA integration, they tend to focus on elementary school aged students. Additionally, modeling implementation strategies in content areas receiving responses of decreased frequency such as social studies or reading may be beneficial to engaging secondary teachers and encouraging increased classroom PA.

Preservice Health Educators' Perception on Teaching At-Risk Youth at a Juvenile Detention Center

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Background/Purpose: Preservice teachers often have negative preconceived ideas and biases toward Juvenile Detention Center (JDC) students or at-risk youth. Previous studies have shown that service-learning experiences at a JDC can change their perceptions toward at-risk youth. Nichols and Sullivan (2016) conducted a similar study regarding preservice music education teachers and their perceptions of working with at-risk youth in a JDC. Their study showed how the preservice teachers' negative perceptions of teaching at risk youth changed to more positive ones from the beginning of the experience to the end. The main purpose of this study was to explore how the perceptions of preservice health education teachers' change over the course of teaching health lessons to at-risk youth at a JDC.

Method: Fourteen undergraduate preservice health education students participated in this study. Participants were recruited from a health education teaching methods course. As part of the course, participants visited the JDC three times during the semester and at least one time, they taught a health education lesson to JDC students. Using the mixed method research approach, researchers conducted focus group

interviews prior and post teaching experience at the JDC. Participants also completed a survey about their previous experiences and comfort and anxiety levels (a 10-point scale) of working with at-risk youth prior to their visit. After each time the participants went to the JDC, they filled out a survey about their experience and comfort and anxiety levels.

Analysis/Results: For the qualitative data (focus group interview and survey), researchers used coding and thematic analysis. Only one participant had a positive perception of teaching at-risk students at a JDC prior to their experience. Throughout the experience, the preservice students' perceptions changed from negative to positive perceptions toward at-risk youth. The main themes found were being intimidated by both the teaching setting and JDC students; unexpected appropriate JDC students' behaviors; and professional development.

Researchers conducted a paired samples t-test to evaluate participants' comfort level and anxiety levels of working with at-risk youth at a JDC before and after JDC experience. There was a significant difference for before the JDC experience comfort level ($M=5.57$, $SD=2.24$) and after the JDC experience comfort level ($M=7.14$, $SD=1.83$); $t(13)=-3.56$, $p=.003$. There was no significant difference for before the JDC experience anxiety level ($M=5.68$, $SD=2.35$) and after the JDC experience anxiety level ($M=4.82$, $SD=2.46$); $t(13)=1.79$, $p=.097$.

Conclusions: Preservice teachers in this study had shown a more positive outlook toward at-risk youth at a JDC. Preservice teachers were able to develop teaching strategies and improve their perceptions and comfort level of teaching a diverse student group. Undergraduate courses for preservice health education teachers should consider providing opportunities to teach at-risk or incarcerated youth as a field experience.

Preservice PE Teachers' Early Field Experiences in Early Childhood Contexts

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Background/Purpose: Learning fundamental motor skills is central for preschool children for their healthy development. There is clear evidence that children do not often acquire fundamental motor skills without developmentally appropriate structured instruction in physical education (Brian et al., 2016). Currently,

physical education teacher education (PETE) programs have the ability to impact the early childhood education; because, there are no other programs or fields which account for early childhood physical education. With this expectation toward physical education, PETE programs should continuously provide high quality of early field experiences (EFEs), that is a viable teacher training strategy (O'Sullivan & Tsangaridou, 1992). EFEs are early teaching experiences that preservice teachers complete during early years in PETE programs prior to student teaching. The authentic, real-world nature of EFEs has shown to promote desirable changes in preservice teachers' beliefs toward the profession (Darling-Hammond, 2006). However, there is lack of knowledge on preservice teachers' EFEs in early childhood physical education contexts. The purpose of this study was to describe preservice teachers' EFEs of teaching preschool aged children.

Method: The study used an explanatory multiple case study design (Yin, 2003). A total of 15 junior level preservice teachers (female $n = 5$) participated in the study. All participants enrolled in the primary school physical education course. This class solely served to prepare preservice teachers to teach early childhood physical education. The course consisted of a five-week, classroom-based lecture series and a ten-week EFE. Preservice teachers assessed children's motor skills on the first and the last week of the field experience and taught physical education for the rest of eight weeks. Two main types of self-reflective journaling ([a] preand post-EFE reflective journals and confidence scale and [b] during-EFE weekly reflective journals) and a child's motor skill assessment (preand post-test) served as the data.

Analysis/Results: A constant comparative method (Boeije, 2010) was used to analyze the data. The results of the preEFE illustrated the real-life interactions with preschool children have an impact on preservice teachers' confidence levels. The findings of the during-EFE phase revealed the nonlinear nature of preservice teachers' fundamental pedagogical skill development. Also, knowing fundamental pedagogical skills does not mean that preservice teachers can actually apply the skills. Lastly, the post-EFE data demonstrated that an EFE in early childhood contexts were able to change preservice teachers' perceptions toward early childhood physical education and physical education in general.

Conclusions: The study added more evidence to the power of EFE for preservice teachers. After the EFE, preservice teachers' perceptions improved in a desirable direction, which was not discussed after the completion of the lecture component of the course. The weekly reflective journals of the preservice teachers also

illustrated their nonlinear development of fundamental pedagogical skills. As Siedentop (1981) claimed, learning how to teach is nothing different from learning sport skills. At last, this study added another piece of evidence that a diverse mix of EFEs are beneficial for helping preservice teachers acquire teaching experiences that make them well-rounded teachers.

Promoting Physical Activity and Health Among Children and Youth: Collaborative Role of University and Community Centers

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Background/Purpose: Research has demonstrated that compared to other countries, students in the US spend less time in school or participate in any form of physical activities (Larson, 2001; Sullivan, 2010). Increasingly, schools are substituting physical education programs with other academic subjects, which, combined with the long summer vacations results in the unsupervised free time leading to sedentary activities such as surfing the internet and other anti-social behavior. Summer camp programs ensure that students are meaningfully occupied through structured activities. According to American Express (July 2013), parents spend billions to keep children occupied during summer. Children from low-income families have limited opportunities and often rely on community recreation centers to provide them activities and experiences via after-school programs and summer camps. Because of the limited resources, children may not have access to diverse experiences. Involving the community can help provide diversified experiences to children at these centers. As part of its service mission, Alabama A&M University developed the Action Kids Summer camp to provide physical activity and health education for children 5-10 years old. The purpose of this research is to demonstrate how the Action Kids camp program aligns with the goals of Centers for Disease Control and Prevention in increasing physical activity time and health education to prevent childhood obesity. Further, to educate the children on healthy eating habits, body image, and consumer awareness.

Method: Action research methodology was used; the needs of the recreation center were identified—providing diverse forms of activities such as tennis and health education. The primary emphasis of the program was to help the children make a connection between healthy

behavior and physical activity. About 20-40 children ages 5-10 years old participated in the Action Kids camp that was held twice a week for five weeks. The program included basic tennis skills (forehand, backhand, serve) and health education (hygiene, basic nutrition, body image, self-esteem, wise food choices, smart grocery shopping skills, etc.). Observation notes and reflections from previous camps were used.

Analysis/Results: About 100 children have attended the program since 2016. They have been introduced to tennis skills and received 60 minutes of physical activity and health literacy. The assessment on the final day of the 5-week program showed that the children and youth recalled majority of the information learned during the camp. They also were able to actively participate in the group quizzing that demonstrated their comprehension of the information presented. Some of the examples they shared confirmed that student would continue to utilize the skills and knowledge learned during the camp. The student volunteers acted as mentors for the young children and stakeholders are key to the success of the program.

Conclusions: This research demonstrated how fostering relationships between the university and community centers could help build healthy habits among children. The CDC recommends regular participation in physical activity and health literacy as a way of decreasing childhood obesity, and that university and other community members can collaboratively achieve this goal. Increasing the amount of structured activity time can have positive developmental outcomes for youths (Larson, 2001).

Recruiting Middle and High School Students Into PETE Programs

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Background/Purpose: There has been a steady decline of students enrolled in physical education teacher education (PETE) programs, and several PETE programs have been eliminated from college campuses. One way to combat declining numbers in programs is to recruit middle and high school students into PETE Programs. Thus, the purpose of this study was identify the extent to which middle and high school physical education teachers recruit students into PETE programs, why they do or do not recruit, how they recruit and with whom,

the types of resources used for recruitment, and the types of resources desired for recruitment into PETE programs.

Method: A 30 question electronic pilot survey was developed and sent to a convenient sample ($n=173$) physical education teachers in the state of Idaho using publicly available email lists. Sample questions included: (a) To what extent are you as a physical educator, involved in recruitment of students to choose a career path in Physical Education? (b) If you do not recruit students into the profession, please explain why below (e.g., never occurred to me, not enough time, etc), and (c) If resources were provided to you to aid in the recruitment of students, which resources would you find most helpful? Surveys were sent out in May of 2018 with one follow up email 2.5 weeks later, the survey will also be shared at SHAPE Western District in June, 2018.

Analysis/Results: Initial results (23% responded) indicate that 27.8% ($n=10$) of teachers report that they recruit students for future enrollment in PETE, and 72.2% ($n=30$) do not recruit. Of the teachers that actively recruit for PETE, 100% ($n=10$) have taught for 10 or more years and chose the profession to study a topic they enjoy. The most popular methods of recruitment include the use of websites (50%; $n=5$), guest speakers (40%; $n=4$), mentors (40%; $n=4$), teacher certification programs (30%; $n=3$), and handouts (30%; $n=3$). Teachers report that in their conversations with students they typically discuss the benefits of the job (90%; $n=9$) and the enjoyment of working with youth (80%; $n=8$). The students that PETE programs are discussed with are generally students that have approached the teacher (50%; $n=5$) and students with teaching and organizing skills (20%; $n=2$). The reasons teachers reported for not recruiting (72.2%; $n=30$) were: (a) it never occurred to them (37%; $n=11$), (b) they do not actively recruit but if a student asks a question they answer (10%; $n=3$), (c) few quality teaching opportunities (7%; $n=2$) and (d) the low pay of the profession (7%; $n=2$).

Conclusions: There is nascent knowledge about the recruitment of middle and high school students into PETE programs; coupled with the decline in students entering PETE programs there is a need to better understand recruitment practices. Programs should be designed to inform middle and high school physical education teachers of recruitment strategies as well as strategies should be developed (e.g., websites, webinars) that are easily accessible to physical education teachers for recruitment. Continued research on recruitment strategies is warranted.

Relationship of Physical Activity and Sleep With Depression in College Students

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Background/Purpose: Depression is a highly prevalent issue on college campuses, however, it is underdiagnosed and often untreated. Recently, there has been a growing body of research examining the effects of physical activity and sleep on depressive symptoms. General findings from these studies have found that regular exercise and quality sleep are associated with lower depression. This purpose of this study was to examine the relationship between physical activity, sleep and depression levels among college students, and, furthermore, investigate any gender differences seen in physical activity, sleep and depression.

Method: Participants were 1143 undergraduate students from a major public university in Beijing, China. Their ages ranged from 14 to 26, with an average age of 19 years ($SD = 1.42$ years). The study took place at the beginning of the fall 2017 semester. The University Institutional Review Board Health Sciences and Behavioral Sciences (IRB-HSBS) approved this study (HUM00102146). Participants completed the three questionnaires anonymously during a regular physical education class. The *Center for Epidemiologic Studies Depression (CES-D)* survey was used to assess depressive symptoms. The *International Physical Activity Questionnaire (IPAQ) - Short Form* was used to measure intensity of physical activity. The *Pittsburgh Sleep Quality Index (PSQI)*²⁵ was used to assess quality and patterns of sleep.

Analysis/Results: Results of the multiple regression model indicated that physical activity variables and sleep variables significantly predicted depression levels ($F = 61.997, p < .05$). Standardized regression coefficients revealed that different variables were significantly associated with depression for males compared to females. Most notably, vigorous and moderate physical activity significantly predicted depression for males, whereas no level of physical activity had a significant relationship with depression for females ($t = -2.692, p < .05$; $t = -2.902, p < .05$). The independent sample t-tests indicated that females experienced significantly higher levels of depression ($t = -2.479, p < .05$), worse total sleep quality ($t = -2.955, p < .05$), subjective sleep quality ($t = -3.381, p < .05$), sleep duration ($t = -2.779, p < .05$), sleep disturbances ($t = -2.053, p < .05$), and worse daytime dysfunction ($t =$

-2.972, $p < .05$), less total physical activity ($t = 2.056$, $p < .05$), and less vigorous physical activity ($t = 3.676$, $p < .05$) compared to males.

Conclusions: Regular physical activity and quality sleep are beneficial help college students reduce and regulate depressive symptoms, however, differing strategies for male and female college students may be most effective in reducing depression.

Relationships Among Physical Activity, Sleep Duration, Diet, and Academic Performance in a Representative Sample of Adolescents

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Background/Purpose: Evidence suggests that higher levels of physical activity relate to better academic performance. However, the independent effects among physical activity, sleep behaviors, and diet on academic performance are unclear within the US adolescent population. Therefore, the purpose of this study was to examine the relationships among physical activity, sleep duration, diet, and academic performance in a representative sample of adolescents from the US state of Nevada. A secondary aim was to examine if meeting criteria on multiple observed health behaviors related to better academic performance.

Method: A two-stage cluster random sampling method was used to recruit adolescents from grades 9-12 from the US state of Nevada ($N = 4,625$; 2,544 girls, 2,081 boys). The 2015 Youth Risk Behavior Survey (YRBS), developed by the Centers of Disease Control and Prevention, was administered to students within public, private, and charter schools. Weighted multilevel generalized linear mixed effects models with a logit link were employed to examine the relationships among physical activity, sleep duration, diet, and academic performance. Academic performance was the dichotomous outcome variable stratified by students who maintained mostly A's and B's during the past academic year. An additional weighted multi-level model was employed examining the relationship between meeting criteria on at least 3 or more health behaviors with academic performance. Sampling weights based on region were employed and random intercepts were employed at the classroom level to adjust for clustering within the data structure. Models were also adjusted for the covariates of age, sex, BMI percentiles, and race/ethnicity.

Analysis/Results: Adolescents who participated in at least of 60 minutes of physical activity per day had significantly higher odds of maintaining A's and B's over the past academic year (adjusted OR = 1.18; 95% C.I.: 1.02, 1.38; $p=0.029$). Additionally, adolescents who consumed salad weekly (adjusted OR = 1.24; 95% C.I.: 1.06, 1.46; $p=0.007$) and who consumed breakfast everyday (adjusted OR = 1.72; 95% C.I.: 1.48, 2.00; $p<0.001$) had higher odds of maintaining mostly A's and B's. Finally, adolescents who reported meeting 3 or more health behavior criteria from the YRBS had significantly higher odds of maintaining A's and B's compared to adolescents only meeting 0-2 health behavior criteria (adjusted OR = 1.66; 95% C.I.: 1.44, 1.92; $p<0.001$).

Conclusions: Self-reported physical activity, specific dietary behaviors, and meeting multiple health behavior criteria significantly related to academic performance in adolescents. The results of this study can be used to support and inform school and community based interventions with aims to employ multicomponent health behavior modification to improve academic performance in adolescents.

Research on the Effect of Family Basic Factors on the Development of Children's Physical and Mental Health From the Perspective of Sports Activities

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Background/Purpose: The family is mainly composed of parents and children. Parents are one of the most important roles in the growth stage of children. At the same time, parents have inextricably linked and lasting influence mechanisms for the physical and mental health of young children.

Physical activity is the main form of activity in early childhood. The reason why physical activity is used is that in the early childhood stage of 3-6 years, games are the main form of social activities for children, and the main content of games is the physical activity. The establishment of other social relationships is an important foundation for children's own physical and mental health development and the social relationships that may need to be established in the future, such as parent-child relationships, classmate relationships, friend relationships, teacher-student relationships, etc., all have far-reaching influence.

The purpose of this study is to understand the mechanism and regularity of the influence of basic family factors on children's physical activity. Explore

how to improve the relationship between parents and children, and find out the laws and strategies to promote the physical and mental health of young children through physical activities

Method: Eight kindergartens were selected in 8 cities in Jiangsu Province. A total of 514 children in 15 classes were selected as the survey subjects and questionnaires were sent out to their parents to collect valid questionnaires and analyze the data relating to the projects involved in the study.

Analysis/Results: (1) Parents' occupational attributes have a close relationship with children's participation in sports activities. At the same time, there are very significant differences in the involvement of parents in different types of sports and the corresponding participation of children in their sports activities. (2) The educational level of parents also has a very close relationship with young children engaging in sports activities. The higher the degree of parental education, the better the child's participation in sports activities. However, parents of different levels of education have correspondingly different situations in their children's sports activities. (3) Parents' income levels also have a very close relationship with children's participation in sports activities. At the middle and high levels of income, the higher the parents' income, the better the children's participation in sports activities. There are also significant differences in the corresponding pre-school sports activities for parents of different income levels.

Conclusions: (1) There is a close relationship between physical activity and the physical and mental health of young children. (2) The professional attributes and cultural level of parents affect the participation of children's sports activities and the emotional experience during sports activities, and thus affect the children's intellectual development level. (3) The level of parents' income influences the participation of children's sports activities, which in turn affects the social development of children and the acquisition of family resources. (4) The basic family factors in this study are related to the physical and mental health growth of children in the field of sports activities has a close relationship and influence.

Research, Strategies, and Best Practices That Directly Relate to Pedagogy in Rural Settings

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Background/Purpose: This study is a result of a reaction to a larger ethnographic case study that examined students' experiences and motivation profiles in a rural physical education setting during the 2017-2018 school year. We observed that there was no evidence of formal physical education upon entering the setting for our study. Also, we found that the environment did not support formal physical education instruction. Several implications emerged for both PETE programs and researchers in other nontraditional physical education settings during the study's duration. The purpose of this study is to critically examine our experiences as researchers in a nontraditional physical education setting to produce preliminary "How-To" tips regarding entering and thriving in nontraditional settings as a researcher.

Method: The primary data collection method was critical reflection through a series of semi-structured peer debriefing sessions. Particular attention was paid to the experiences of the principal investigator, volunteer teacher and the research assistant as it relates to the nuances of researching the setting.

Analysis/Results: An inductive approach was used to analyze the data. Interview transcripts were coded, and emergent themes were identified. Themes from this study are divided into four sections: (a) barriers researchers identified while conducting research; (b) researchers' strategies for gaining access and developing rapport; (c) navigating the micropolitics of the environment; (d) research team diversity and synergy. Findings from this study suggested that in general that research in nontraditional physical education is warranted and is sparse.

Conclusions: The study has gone some way toward enhancing our understanding of the nuances of researching nontraditional physical education environments. Also, this study serves as a base on how to research nontraditional settings and sheds light on the need for rigorous research in nontraditional physical education settings.

School Wellness Integration Targeting Child Health (SWITCH): A Model for Training and Dissemination

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Background/Purpose: Schools often need support and assistance to set up and manage ‘whole-of-school’ programs focused on promoting healthy lifestyles in students. The School Wellness Integration Targeting Child Health (SWITCH) initiative is designed to build capacity for schools to plan, implement and sustain effective school wellness programming. Consistent with contemporary implementation science approaches, SWITCH is conceptualized as a standardized training process rather than a curriculum. Schools are provided with resources to facilitate programming, but the goal is to create a self-sustaining, whole-of-school infrastructure that empowers the school leaders to use approaches that meet local needs and interests.

Method: The SWITCH capacity building and quality improvement process includes an in-person school wellness conference in the fall semester followed by a series of online webinar sessions led by trained facilitators. The preparatory phase is largely didactic and informational, but once school programming is launched, the implementation phase focuses on promoting autonomy and problem solving. During these capacity-building and quality improvement sessions, motivational interviewing (MI) techniques are used to help schools evaluate progress, refine plans, and create new goals. Schools are provided with guidelines for effective implementation (*‘quality elements’*) and strategies to impact different school settings (*‘best practices’*), but are given flexibility in how to carry out the programming. The final evaluation phase helps schools to evaluate progress and internalize learning experiences.

Analysis/Results: For the 2017-18 intervention, 25 schools were recruited from across the state through a partnership with the university Extension and 4-H network. Teams of three leaders from participating schools attended a day-long conference on campus where they were introduced to principles of SWITCH. The preparatory phase of training guided school staff on how to enroll students into an online tracking software, and how to engage their whole school in the implementation process. Schools completed the School Wellness Environment Profile, a self-administered audit capturing policies and practices within a school as well as overall ‘readiness for change’. Schools also completed ‘checkpoint surveys’ during the implementation phase to evaluate adherence to the recommended quality elements and best practices. The forms provide schools with actionable information to plan and guide their programming, but they also provide valuable insights for the overall evaluation of the SWITCH implementation process.

Conclusions: The SWITCH initiative uses a unique participatory approach to wellness training that empowers schools to take ownership of local programming. Furthermore, by enabling school stakeholders to develop practices that will work best in their particular environments, motivation to sustain programming is also enhanced. Ongoing evaluation of the collaborative training and implementation framework will help to further refine approaches for the promotion of children’s health behaviors through schools. The approach to engagement of schools, training of wellness teams, and establishing school readiness for change will be discussed. In particular, the ways in which researchers and university extension leaders create training opportunities that are sustainable, feasible, and time-efficient (such as training conferences, webinars, and site visits) will be described. Furthermore, we will describe the methods employed to distinguish schools’ readiness to initiate changes in health programming.

Self-Identified Fatness: Retrospective Embodied Experiences in Physical Education

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Background/Purpose: Physical education (PE) should be an environment that provides opportunities for children to learn and develop skills necessary to maintain a healthy and active lifestyle. Research suggests that negative feelings or experiences in PE could, however, disconnect individuals from physical activity. In order to investigate this disconnection, it is important to understand the PE experiences that could contribute to, or create negative feelings toward PE and physical activity. Specifically, previous research illustrates that individuals who are overweight/obese, or perceive themselves as fat tend to have more negative experiences with PE and physical activity than individuals who are of “normal” weight. Therefore, the purpose of this retrospective study was to explore (a) how individuals who perceived themselves as fat or overweight experienced PE, and (b) how these experiences impacted their current physical activity levels as adults.

Method: To explore how the participants made sense of their PE experiences in PE and their experiences impacting current physical activity participation, an interpretative phenomenological analysis (IPA) research approach was used. A sample of seven adults

were interviewed for this study. The sample consisted of four females, one African American and three Caucasian, and three males, two African American and one Caucasian. The participants' ranged from 22 to 30 years of age and all reported that they attended public school in the Mid-Atlantic region of the United States for all of their PE experiences. The interviews lasted approximately 60 minutes and were audio recorded to be transcribed. Participants were asked about their experiences in PE and their current physical activity habits.

Analysis/Results: After the interviews were transcribed, a four step process was used to analyze the data: (1) Full emersion in data, (2) Initial coding, (3) Theme development within each transcript, and (4) Final theme development across cases. After the interviews were analyzed, three themes emerged across cases. The first theme "Fitness testing: Every fat kids' "worst enemy" represents some of the most negative memories the participants had during their time in PE, which revolved around fitness testing. The second theme, "The fat athlete," emerged as the participants who identified as being athletes during school described how being big, and an athlete, impacted their PE and physical activity experiences. The final theme "PE. The last thing on my mind," describes the impact, or lack thereof, PE had on the participants' current physical activity levels.

Conclusions: The first theme suggested that fitness testing was problematic for overweight/obese individuals, especially in the way the tests were administered. Fitness testing protocols should be carefully considered and perhaps even revised to potentially reduce the likelihood of negative experiences in the future for overweight/obese students. Even though the participants reported mostly negative experiences in PE, the third theme showed that their physical activity levels as adults were not impacted. Since all the participants attributed their adult physical activity participation to weight management, more emphasis on weight management in PE should be considered by curriculum developers and physical education teachers.

Self-Regulated Learning Strategies and Achievement Goals Among Preservice PE Teachers

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Background/Purpose: Self-regulated learning (SRL) strategies are purposeful cognitive processes used to acquire skills and knowledge (Zimmerman, 2000), including elaboration and critical thinking. Selection and implementation of SRL strategies distinguish capable self-regulated learners from others. Use of SRL strategies is determined by learners' motivation such as achievement goals (Pintrich, 1995; 1999). According to the 2x2 achievement goal model (Elliot & McGregor, 2001), mastery-approach (MAp) goals focus individuals on tasks and acquisition of knowledge and skills, while performance-approach (PAp) goals direct people to receive recognition for their competence. Mastery-avoidance (MAv) goals emphasize intrapersonal competence and the avoidance of failure in learning, and performance-avoidance (PAv) goals center on normative incompetence and the avoidance of being outperformed. The four types of goals have differential roles in predicting cognitive, affective, and behavioral learning outcomes. Although previous studies examined how different goals affected motor learning and performance in physical education (PE) settings (e.g., Kolovelonis et al., 2011; Kolovelonis, Goudas, & Dermitzaki, 2012), little was done among preservice PE teachers. Learning about differential effects of achievement goals may assist physical education teacher education (PETE) faculty better design and implement SRL-based instruction. Therefore, this study examines the association between achievement goals and SRL strategies among preserve PE teachers.

Method: Participants were 419 preservice teachers from five Texas PETE programs. Mean age was 23.05 years (SD = 4.28). Ethnicities consisted of African American (17.4%), Asian American (1.0%), Caucasian (37.9%), Hispanic (32.0%), and other (4.3%). The Cognitive Processing Strategies Scales (CPSS; Liu, Xiang, McBride, & Chen, 2018) assessed general cognitive processing (GCS), elaboration, and CT. The 2'2 Achievement Goal Questionnaire (AGQ; Elliot & McGregor, 2001) measured four achievement goals. Structural equation modeling examined the relationships between four achievement goals and SRL strategies.

Analysis/Results: Data analysis revealed all data were approximately normally distributed (Skewness = -1.413-.443, and Kurtosis = -1.069-1.209). Each variable had an acceptable score reliability (Cronbach's $\alpha > .747$). A structural model examining the relationships between latent variables resulted in a good fit, $\chi^2_{(378)} = 544.521, p < .001$; RMSEA = .035, CFI = .960, SRMR = .046. Overall, MAp goals had the largest effects on GCS ($\lambda = .558$) and

elaboration ($\lambda = .422$). PAp and PAv goals had positive effects on GCS ($\lambda s = .129$ and $.187$, respectively). PAp also positively predicted CT ($\lambda = .202$).

Conclusions: Consistent with previous SRL studies among college students (e.g., Bernacki et al., 2012; Cellar et al., 2011; Muis & Franco, 2009), the present study showed those preservice teachers endorsing MAP goals tended to employ SRL strategies more so than the other goals. The associations between achievement goals and SRL strategies imply that endorsement of MAP goals could promote SRL strategies use. We recommend that PETE programs create a mastery oriented learning environment where preservice teachers focus on their own learning and improvement instead of traditional peer comparison techniques. Future research can be expanded to preservice teacher in other disciplines and incorporate learning outcomes such as academic performance indicators.

Should We Share? Examining Shared Use in WV Public Schools

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Background/Purpose: Research suggests physical activity policy is emerging as an avenue to target physical activity behaviors. While government and state organizations have identified shared use as a specific policy strategy to increase community access to recreational physical activity opportunities, few studies have examined the shared use process and the partnerships at the policy and environmental levels within the local context. The purpose of this study was to examine the influential factors of shared use initiatives and the role of the community-school partnership during the shared use process. In addition, this study seeks to provide recommendations for the development and implementation of shared use initiatives.

Method: A multiple case study method was utilized. Three schools served as the cases investigated. Seven interviews were conducted with a combined total of nine participants which included school administration, key partners, and a shared use expert. Data were analyzed first using thematic analysis deductively across the Contextual Interaction Theory constructs and Social Ecological Model policy and environmental levels, and then inductively to allow subthemes to emerge.

Analysis/Results: Cross-case analysis revealed sub-themes within the theoretical constructs and levels: (1) coordinated communication, (2) partnerships, (3) personal commitment, (4) funding, (5) increased assets, (6) community ownership, and (6) opportunity.

Conclusions: The findings suggest consideration should be given to policy dissemination and education for school administration as well as the school shared use community. Multifaceted partnerships are needed to implement a robust shared use initiative, enhance the physical environment, and foster a sense of community within the social environment.

Stakeholders' Support of CSPAP Sustainability After a Three-Year PEP Grant

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Background/Purpose: Youth are falling short of nationally recommended amounts of physical activity. A Comprehensive School Physical Activity Program (CSPAP) is designed to help children achieve 60 minutes a day of physical activity. CSPAP effectiveness is linked with having strong physical activity leaders, administrative support, and school staff support. Additionally, financial support for CSPAPs can aid in program development. The Carol M. White Physical Education Program (PEP) Grant provides opportunities to design, provide, and improve physical activity programming in K-12 schools. The present study examines key stakeholders' support of CSPAP implementation and sustainability after receiving a three year PEP grant in an inland northwest school district.

Method: The study applied a qualitative design utilizing the Social Ecological Model as a theoretical framework that guided data collection, analysis, and the interpretation of results. There were 17 participants ($n=7$ males). There were 10 physical educators (4 high school, 3 middle school, and 3 elementary teachers) and 7 administrators (6 principals and 1 superintendent). All participants were interviewed 1 year into the PEP grant and 1 year post PEP grant funding ($N=36$ interviews; $M=34$ minutes, $R=14-59$ minutes).

Analysis/Results: Interviews were audio recorded and transcribed verbatim. Data from each interview were coded using inductive analysis and constant comparison. Data were placed into categories and from the categories emerging themes were developed. Trustworthiness strategies included data triangulation,

member checking, and research debriefing. Emerging themes are (a) professional development, (b) curriculum mapping, (c) data driven programming, and (d) a district model program. Administrator and school support for physical education and physical activity, specifically in the form of CSPAP, has been influenced and enhanced through PEP grant goals and funding. Specifically, professional development opportunities in tandem with K-12 wide curriculum mapping have enabled the physical education program, led by the physical education teachers as physical activity champions, to increase daily physical activity accumulation. Technology purchases (e.g., WELNET, Heart Rate Monitors) have moved physical education to a data driven program where students, parents, administrators, and teachers receive constant feedback. Furthermore, administrators and general education teachers look to physical education as a model to follow for mastery-based learning, which the district is now employing.

Conclusions: The PEP funded CSPAP changed administrator's and school staff's perceptions of physical education and school based physical activity programming. Professional development opportunities, time for planning, and resources for purchasing evaluation equipment (e.g., heart rate monitors) provided physical educators with the tools they needed to promote, advocate, and evaluate physical activity programming. School staff and administrators recognized the positive changes occurring in physical education and their support has influenced the sustainability and enhancement of CSPAP initiatives.

Strategies to Prevent Distracted Driving: Videos, Simulation, Health Belief Model

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Background/Purpose: Distracted driving (DD) is behavior that averts drivers' attention necessary for safety, which may include cell phone use, eating, drinking, and operating equipment within the vehicle. In 2016, 3,450 people were killed and 391,000 were injured in vehicular crashes involving DD. The purpose of this project was to identify what strategies are useful in preventing DD.

Method: This study included three phases designed to assess the impact of strategies used to influence attitudes about DD. Phase One participants completed an online simulation game, Phase Two participants

completed a session on the One Simple Decision driving simulator system, and Phase Three participants were randomly assigned to a control, driving simulator, or video campaign group. Participants in all phases completed a pretest, participated in the game, simulation, or video viewing, and completed a posttest, except for Phase Three control group participants who only completed a pretest and posttest. Phase One participants completed a follow-up posttest one month after the posttest. Phase Three participants will also complete a follow-up posttest. The pretest and posttest included questions on driving behaviors and attitudes designed to reflect Health Belief Model (HBM) variables. Additional questions measured the value of the game, simulation, or videos specific to the assigned group.

Analysis/Results: Phase One participants included 303 undergraduate students with over 70% reported reading texts often or occasionally while driving. Results, after the follow-up posttest, indicated slightly safer habits with 14.5% often and 42.5% occasionally sending texts while driving. While participants reported the simulation game was unrealistic to actual driving, they reported difficulty texting while performing the game.

Phase Two participants included 90 undergraduate students; many (84.4%) reported driving daily. Participants overwhelmingly had higher levels of perceived susceptibility to accidents due to their texting (81.1%) or other drivers' texting while driving (92.2%), and most indicated a high perception of severity related to killing others or being killed due to DD (94.4%-100.0%). Results also indicated desired perceptions about benefits, barriers, self-efficacy, and cues to action. A majority felt the simulator would discourage others from texting and driving (67.8%) indicating the simulator may a valuable tool to help prevent potentially deadly behaviors.

Phase Three is underway and is designed to compare attitudes, perceptions, and behaviors between participants who complete a driving simulator session and participants who view two informative and emotional DD video campaigns.

Conclusions: Results indicated students continue to drive distracted regardless of acknowledged risk. All HBM variables were favorable for prevention of DD, including high perception of susceptibility and severity to negative consequences of DD, high perception of benefits to not texting while driving to reduce negative consequences, and low perceptions of self-efficacy to safely text and drive. However, a majority perceived texting while driving was a hard habit to change. Results showed increased awareness but limited positive behavior change. Phase Three may support research that indicates simulators may have a greater

lasting effect (than video campaigns) for prevention of DD. Clearly, repeated and multiple types of prevention measures are needed for sustained behavior change related to DD.

Students' Attitude, Physical Activity, and Knowledge: The Effects of Gender, Grade, and Ethnicity

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Background/Purpose: Physical education (PE) is one of the most important components for school-based physical activity (PA) intervention. The purpose of this study was to examine the effects of gender, grade, and ethnicity on students' attitude toward PE, PA and sedentary behaviors, and knowledge of PA and fitness (PAF knowledge) in an ethnically diverse southern middle school.

Method: Participants were 350 students in 6th, 7th, or 8th grades (Girls: $n = 205$, 58.6%) recruited from a public ethnically diverse middle school located in a southern U.S. state. The school enrolled 455 students (6th-8th grades) at the time of data collection, with 46.9% eligible for free or reduced meals. White students were in the majority ($n = 258$, 56.7%) followed by Black ($n = 176$, 38.7%) and other ethnicities. The school offered daily PE classes (~50mins per session) that followed the multi-activity sports-based curriculum. Students self-reported demographic information (i.e., gender, grade, race and ethnicity) and completed three validated questionnaires to assess attitude toward PE, PA and sedentary behaviors, and PAF knowledge, respectively. Descriptive statistical analysis (i.e., mean, standard deviation) and inferential statistical analysis (i.e., analysis of variance) were conducted using SPSS 24.

Analysis/Results: The students reported relatively positive attitudes toward PE ($M \pm SD$: overall attitude = 81.15 ± 13.86 ; enjoyment = 40.55 ± 7.36 ; usefulness = 40.60 ± 7.04) but attitude constructs showed higher scores in 6th or 7th grades than 8th grade ($p < .01$). Attitude did not differ between boys and girls ($p > .05$), while PA and sedentary behaviors favored boys over girls ($p < .05$). Sedentary behavior was higher in higher grades than lower grades, but PA was higher in lower grades (overall PA: 6th > 8th grade, 7th > 8th grade, $p < .01$; PA after school: 6th > 8th grade, $p < .01$; PA at school: 7th > 8th grade, $p < .01$). PAF knowledge

performance was comparative between boys and girls ($p > .05$) but presented an increasing trend with significant differences between 6th and 7th grades ($p < .01$) and between 6th and 8th grades ($p < .01$). Lastly, sedentary behavior was significantly higher in Black students than White students ($p < .05$).

Conclusions: This study found group differences specific to gender, grade, and ethnicity for students' PE attitude, PA and sedentary behaviors, and PAF knowledge. The findings are informative to future intervention studies designed for promoting PA and curbing sedentary behaviors in schools.

Teacher Accountability and Student Motor Skill Competency in Tennessee

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Background/Purpose: Rink (2013) argued that physical education can become more prevalent, less marginalized, and prevent program erosion with accountability. Two federal policy initiatives have driven teacher accountability in education for the past ten years: Race to the Top and Elementary and Secondary Education Act. While the focus has been on tested-subjects, 36 states have included specifications for nontested subjects (e.g., foreign languages, the arts, physical education.) Some states, like Tennessee, use different procedures for different content areas (Gagnon, Hall, & Marion, 2017) and provide district choice to "opt-in." While the results are used for teacher evaluation, they also provide important information about student growth and motor skill competency. The current Tennessee elementary model requires student data from two points in time for two required motor skills (locomotor, grade 2; overhand throw, grade five) and two additional motor skills (teachers select from validated assessments aligned with grades 2 and 5 state standards). The purpose of this study was to investigate student motor skill competency from two similar size school districts where one required physical education assessment and one did not.

Method: Twelve teachers in District A (DA; required to assess) with three years of experience in administering the assessments agreed to share their third year assessment results for research. Teachers recorded pre and post-assessments of one class in grade two and one in grade five for each test. Twenty teachers in District B (DB) agreed to have their students assessed by

trained researchers. Grade two student data included locomotor skills (DA: $n=232$; DB: $n=357$) and a choice of underhand throw, distance kick, basketball dribble, or jump rope (DA, $n=192$; DB, $n=316$). Data from grade five included overhand throw (DA, $n=221$; DB, $n=331$) and a choice of overhead volley, forehand strike, or 2 v 1 passing and receiving (DA, $n=184$; DB, $n=316$.) Trained observers, using the digital video-recordings from both districts, scored all students using a three-point scale (competent, approaching competence, or incompetent). Chi-square [4 skills (2 required and 2 alternative) x 3 (levels of competence)] contingency tables were created for each grade level for analysis.

Analysis/Results: In grade two the chi-square value (χ^2 [6, $N=1097$]= 94.556, $p<0.05$) indicated a significant difference between the four skills and the resulting skill competence score. Post-hoc testing comparing standardized residuals z-scores with a correction of p-value to $0.05/12=0.0042$ revealed four of the twelve cells contributing to the chi-square statistic. The greatest were DA locomotor competence ($z=5.12$) and DB alternative activity competence ($z=-8.67$).

In grade five the chi-square value (χ^2 [6, $N=1052$]=130.909, $p<0.05$) indicated a significant difference between the four skills and the resulting skill competence score. Post-hoc testing comparing standardized residuals z-scores with a correction of p-value to $0.05/12=0.0042$ revealed seven of the twelve cells contributing to the chi-square statistic. Two cells of note were DA in skill competence of the required throwing skill ($z=4.48$) and DA in the chosen alternative activity ($z=-5.4$).

Conclusions: In three of the four skills evaluated (locomotor, overhand throw and grade 2 alternative), district-required teacher accountability resulted in significantly higher student competence.

Texting and Driving Among College Students: What's Happening After Laws and Bans

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Background/Purpose: Texting while driving has attracted considerable media attention and intense public interest. On any given day in the U.S., an estimated 9 people die as the result of texting and driving (DMV, 2018). In 2011, distraction was a contributing factor in about 10% of all drivers, with drivers 15–22 years of age

representing the highest proportion of distracted drivers (WHO, 2011). At the present time, 47 states ban text messaging for all drivers. The current study examines texting and driving behaviors among college students prior to (based on research from Sandlin, Sandlin, and Keathley, 2015) and after passage of the texting and driving bans in their respective state.

Method: Participants ($n=527$) completed a similar 30-item instrument (used in the previous research plus six questions) four months after the texting and driving ban in their state. Specifically, the survey measured the frequency of their phone use while driving, their intent to use a cell phone while driving (intentions), and how they (perceived behavioral control) and others (subjective norm) feelings about their cell use while driving.

Analysis/Results: Previously, participants were much more likely to read a text while driving during the last week compared to sending a text – 52.28 and 38.59%, respectively. Interestingly, that trend still persists at almost identical rates – 54.47 and 50.57%. With regard to their intentions in the next week, participants were still more likely read a text (33.65% previously versus 35.61% currently) when compared to sending a text (20.53% versus 18.77%). Participants continue to greatly agree that those who are important in their lives would not approve of them sending messages while driving (88.97% versus 82.38%) or reading texts while driving (86.50% versus 84.76).

When asked “I would feel guilty if I sent text messages while driving,” participants continue to moderately agree ($M=4.16/4.57/7.00$ (previous, current, 7=strongly agree), $S=2.12$). Interestingly, they still feel less guilty about reading texts while driving ($M=3.74/3.47/7.00$, $S=2.04$). Participants continue to feel they have “complete control” over sending and reading texts while driving, $M=6.25/6.56/7.00$ ($S=1.49$) and $M=6.19/6.88/7.00$ ($S=1.49$). Participants feel that most all of their friends and peers send ($M=5.29/5.09/7.00$, $S=1.36$) and read ($M=5.24/5.63/7.00$, $S=1.36$) texts while driving at similar rates as themselves.

Based on new questions added to the previous instrument, a mere 13.12% of the participants knew of the new laws banning texting and driving. Additionally, 72.87% of the participants stated while crossing a street on campus, they talked on the phone, 79.13% sent a text, 12.95% were almost hit by a car or almost ran into a person or object - 27.51% and 63.37%, respectively.

Conclusions: Findings validate previous outcomes that beliefs and attitudes regarding texting, behavioral intentions, and perceived controls fail to result in positive behavior change despite current laws in most states. Further, the normative beliefs identified in

Theory of Planned Behavior were not indicative of positive behavior change among subjects. Texting managed by *prevention through regulation* which can result in fines, imprisonment, and suspension of driver's license have not been effective given new legislation.

The Association of Students' Fitness, Attention, and Academic Achievement

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Background/Purpose: Chinese parents, school president, and teachers usually sacrifice physical education and exercise periods to facilitate the students to become succeed in academy, which results in less emphasis on physical and mental health of students. The strong positive relations between fitness and academic achievement have been identified in the past study (Jackson, 2010; Li, 2017). But few studies demonstrate how fitness to affect academic achievement. This study examined the association of physical fitness, attention level and academic achievement as measured by standardized tests in Chinese adolescents.

Method: Participants were 1,129 students in grade 8 (675 boys, 454 girls) from three provinces in China. To assess students' attention level, students took the D2 Test of Attention (Brickenkamp & Zillmer, 2010) that measured neuropsychology performance of sustained and selective attention such as subscale TN (i.e., total number of items processed). To assess students' academic achievement in mathematics, Chinese, and English, the students took standardized written tests in the three subject areas. The raw scores from the tests were used in this study as the primary measures. These ranged from 0 to 100 in each subject area. To assess levels of physical fitness, the students took five physical fitness tests: forced vital capacity (FVC), 50-meter run, long distance run (800 meters for girl, 1000 meters for boy), sit-and-reach test, and standing broad jump test during PE classes. The student's raw score of each physical fitness test was converted into the standard score, and further to sum up total fitness scores based on the National Physical Fitness and Health Standards for School-aged Students (Ministry of Education of China, 2014).

Analysis/Results: The results of independent sample t-test demonstrated that the TN for boys was significant

higher than for girls in D2 test ($t=2.73$, $p<0.05$). The scores of TN were significantly correlated with the score of physical fitness ($r=0.17$, $p<0.01$) and academic achievement ($r=0.27$, $p<0.01$). The results of the linear regression showed that fitness significantly predicted students' scores of TN ($\beta =1.55$, $p<0.05$), accounting for 1.2 % of the variance. Physical fitness ($\beta =0.31$, $p<0.001$), and TN ($\beta =0.05$, $p<0.001$) also were found to significantly predict students' scores of academic achievement by linear regression accounting for 22.2% of the variance.

Conclusions: Students' physical fitness was significantly related to attention level and academic achievement. The attention level was found to have an impact on students' academic achievement as well as fitness. In the future, study also should focus on the improvement of physical fitness that may promote the association of students' attention level and academic achievement.

The Effect of Computer Assisted Instruction on Teaching Skills in Volleyball

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Background/Purpose: The purpose of this study was to determine the effect of computer-aided instruction on the learning of volleyball overarm passes.

Method: Experimental-control group pretest-posttest model was used for the 6-week study conducted on 7th-grade students of a secondary school located in Üsküdar district of Istanbul (Türkiye). For this purpose, while the program prepared by computer-assisted teaching practices was applied to the experimental group, a program prepared with traditional instructions method was applied to the control group. The experimental group consisted of 20 students (8 girls and 12 boys) and the control group consisted of 20 students (11 girls and 9 boys). The "Overarm Pass Assessment Scale" was used for data collection and applied before and after the instruction period. Descriptive statistics, Mann-Whitney-U and Wilcoxon Signed Rank Tests were used in the analysis of the obtained data.

Analysis/Results: It was found that in both groups significant improvements were realized in overarm pass test values ($p<0,05$), but there was no difference between groups in the post-test values ($p> 0.05$).

Conclusions: Considering computer-assisted education practices in Türkiye, there are important possibilities for improvement. One major aim should be to increase

the educational quality of physical education courses in the schools. Integrating the developments in information technology to the classical education systems will provide better outcomes in this context.

The Effectiveness of a Mastery Motivational Climate on Hopping for Children With a Disability in an Inclusive Physical Education Setting: A Multiple Baseline Study

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Background/Purpose: Mastery motivational climate (MMC) has been deemed an effective teaching style and evidence-based practice to improve motor skills for both children with and without disabilities in inclusive physical education settings. However, most studies have only examined the effects of MMC using a group comparison design. Additionally, few studies have examined the short and long-term effects of intervention using a single-case design (i.e., multiple baseline or ABAB) specifically of young children with disabilities in inclusive movement-based settings. The purpose of this study was to examine the effects of a four-week MMC intervention on hopping for children with disabilities in an inclusive physical education setting.

Method: We employed a multiple baseline design (pre/post/retention) with three dyads in total. Each dyad consisted of two children with a disability and four peers without disabilities ($N = 18$; $n = 6$ per group). We assessed all participants on the hopping using the Test of Gross Motor Development, Third Edition. We implemented a multiple probe across each participant in all dyads to measure the effects of the intervention on children's hopping.

Analysis/Results: No significant trend was found for two of the dyads in baseline ($p = .251-.327$). Results revealed a significant change ($p = <.001-.015$) and moderate to strong effect ($Tau-U = .78 - 1$). All three dyads accomplished skill mastery (e.g. score 7 out of 8). Two dyads maintained skill mastery while one dyad demonstrated regression at retention.

Conclusions: Findings from this study suggest MMC may be an effective instructional strategy for children with disabilities to acquire and retain basic motor skills. Future studies should examine the effects of an MMC intervention on the acquisition and retention of other motor skills (e.g. locomotor and object control) using multiple-baseline design.

The End of the Year Is a Little Bit Crazy

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Background/Purpose: A teacher's knowledge base is comprised of knowledge of content, students, pedagogy, and environmental context (Cochran, DeRuiter, & King, 2003). These four knowledge components interact to form pedagogical content knowledge. In physical education teacher education (PETE) programs during early field teaching experience, knowledge of pedagogy develops initially. Subsequently, knowledge of content and students evolves concomitantly, whereas knowledge of environmental context does not emerge in an impactful way (Ingersoll, Jenkins, & Lux, 2014). It is the complexity of the school environmental context that may contribute to novice teachers exiting the profession early. Indeed, some reports identify that up to half of teachers leave the profession within five years – which costs in terms of both finances and children's academic learning (Ingersoll, 2016). For the purposes of this research study, environmental context was defined as the political, social, and physical contexts of the school and community to include multiculturalism, diversity, and inequalities as well as the governance and financing of school districts, and the character of communities and cultures (Cochran et al., 1993; Shulman, 1986, 1987; Shulman & Shulman, 2004). It is the social, political, and physical contexts of schooling that seem to be limited in PETE preservice teacher's knowledge development within early field teaching experiences, and it is lack of this knowledge that may lead to an early exit from the teaching profession. Therefore, the purpose of this research was to investigate the development of knowledge of environmental context of a novice physical education teacher across student teaching and the initial years of entering the teaching profession.

Method: One purposefully selected physical educator was selected to participate during student teaching and subsequently followed into the first year of teaching. IRB protocol was completed. Data sources included participant and researcher journals, observations, writing prompts, interviews, and concept maps.

Analysis/Results: Data were analyzed using constant comparison. The categories of physical, social, and physical factors led to the emergence of themes. Trustworthiness was attained through multiple data sources, multiple researcher analysis, member check, and paper trail. Five major themes emerged from the data: (a) assessment matters; (b) school political focus

drove knowledge development; (c) mentorship and support; (d) physical and architectural barriers; and (e) making connections.

Conclusions: School mission statements influence a student and novice teacher's curricular and instructional decisions. When assessment is valued during student teaching, it influences the initial teaching placement. Mentoring by cooperating teachers, principals, and instructional coaches provides requisite support. Flexibility and out of the box thinking is required to overcome school design barriers.

The Exploration of Technology Courses in Physical Education Teacher Education

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Background/Purpose: In response to the need to include technology in the educational lives of 21st century students, leading educational organizations have established standards to guide professional educators in this mission (ISTE, 2017), and in particular, physical education teacher education (PETE) has emphasized technology as a necessary catalyst for instruction, assessment, and professional development (SHAPE America, 2017). Despite the availability of technology within schools and the various guiding framework resources available, teachers have varied levels of preparedness to use technology in their instruction and that better preparation of preservice teachers is required (Gibbone, Rukavina, & Silverman, 2010; Scrabis-Fletcher, Juniu, & Zullo, 2016; Krause, 2017). PETE programs' progress in this area has been limited, and it is unclear how they are preparing future physical education teachers to integrate technology. Therefore, the purpose of this study was to explore the incidence, format, content, emphasis, assessments, and outcomes of physical education-specific technology courses in PETE programs.

Method: A convenience sample of five (4 female, 1 male) PETE faculty within accredited programs that teach a PETE-specific technology course were recruited for this study. Participants supplied a physical education technology course syllabus and accompanying artifacts (e.g., assessments, activities, schedule) and participated in a follow-up interview using open-ended, semi-structured questions to further explore the courses/programs' content.

Analysis/Results: The artifacts and interviews were analyzed through a grounded theoretical perspective that involved the development of categories of concepts and themes derived from the data and conceptualization and category definition (Corbin & Strauss, 2008). Researchers independently and collaboratively analyzed the data to establish investigator triangulation and reduce potential bias (Patton, 2002).

Results indicated that the five PETE-specific technology courses had some common and unique approaches to preparing PETE students with the knowledge and skills necessary to integrate technology into PE. Themes indicated a common adherence to physical education and technology standards and outcomes and activities related to technology-related knowledge, skill acquisition, instruction, assessment, and professional development. Course formats included face-to-face, hybrid, and fully online, which was shown to impact the types of course activities designed for students. Instructors generally sought to provide their students with opportunities to increase technology knowledge, however, application of technology in a teaching environment was restricted for some programs, due to barriers, such as technology availability, course format, and course population.

Conclusions: Results of this study suggest that each of these PETE-specific technology courses were designed and delivered to develop the technology knowledge and skills among preservice physical education teachers with the end goal to enhance instruction in physical education with the use of technology. PETE programs seeking to advance the instructional technology skills of their students are advised to not only thread technology instruction throughout the program, but to strategically place a PETE-specific technology course within the program that a) has sufficient access to technology, b) has a high-quality instructor who can successfully model technology integration, and c) includes opportunities for peer and K-12 teaching with technology.

The Influence of a Comprehensive Sports-Centric Approach to Learning on Student Motivation

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Background/Purpose: A substantial amount of literature supports the tenets of self-determination theory (SDT) as important drivers of student motivation. The purpose of this research was to apply the framework of SDT to understand how one innovative school motivates its student body through sport.

Method: A school district in Phoenix, AZ developed a novel comprehensive sports-centric approach (CSCA) to learning, which emphasizes sport and fitness throughout the comprehensive school day. All students in grades K-8 participate in daily workouts and at least one sport throughout the school year. Semi-structured interviews were conducted with six students, five parents, and 17 teachers ($N=28$) to investigate how CSCA facilitates student motivation.

Analysis/Results: Interviews were coded according to SDT to capture perceptions of student motivation during and after school. The analysis of responses supported the inclusion of each of the tenets of SDT as facilitators of motivation, with engagement and relatedness emerging as the most salient factors. An additional theme, titled external influences, was also revealed to be important among this population.

Conclusions: Results indicate that a focus on sport at school has the potential to motivate students, and that social influences may be particularly stimulating. Practitioners should be cautious of emphasizing external influences, however, as these factors may be deleterious toward the sustenance of a successful program.

The Investigation of Nutritional Change and Physical Activity Levels of Individuals Making Fitness Recreational Purposes

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Background/Purpose: It is well known that regular physical activity reduces the risk of many diseases such as obesity, cholesterol and cardiovascular disease. It is known that foods have three main functions; a) supporting growth and development, b) providing energy, c) organizing metabolism (Wiseman, 2008). Although it is common thought that carbohydrates and fatty foods are more likely to cause obesity due to high intake of metabolic factors, obesity is actually associated with a number of behaviors. For example; while obesity is associated with consumption of soft drinks in the positive direction, it is related with breakfast, fruit and vegetable consumption negatively (Niklas et al., 1998). Despite the fact that it is not possible to change the genetic structures of obese individuals; eating behavior/habit, physical activity level and other environmental factors can be changed positively and healthy lifestyle behaviors can be gained. Fitness athletes are supposed to have good nutritional behaviors

because they need quality food in order to improve their muscle strength. Purpose of this study was to examine relations between individuals', who make fitness recreational purposes, nutritional change and their physical activity level.

Method: Participants were 561 male and 489 female, totally 1050 individuals who have different jobs. They continue fitness exercise regularly. There were two data collection tools; a) Nutritional Change Questionnaire (Prochaska et al., 1987) which was translated and adapted Turkish version by Menekli and Fadiloğlu (2012), b) Physical activity level of participants were determined by International Physical Activity Questionnaire which was developed by Booth (1996). It was translated and adapted Turkish culture by Öztürk (2005).

Analysis/Results: To examine relations between nutritional change and physical activity level, canonical correlation analysis was chosen. Before applying it, normality, multicollinearity, linearity and homoscedasticity assumptions were checked. All assumptions were not violated and analysis was used. First canonical variate proved that there were low but statistically significant correlation between nutritional change and physical activity level ($c^2(12) = 3.31, p < .05$). Moreover, 4% of the total variance of nutritional change variables was explained by physical activity level variables whereas 2% of the total variance of physical activity level variables was interpreted by nutritional change variables.

Conclusions: Study demonstrated that there were low but significant relations between individuals', who make fitness recreational purposes, nutritional change and their physical activity levels. It can be concluded that fitness athletes cares about their nutritional behaviors and physical activity.

The Love of Aerial Dance: Art, Movement, Community

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Background/Purpose: Exercise has important benefits among young adults, including improved cardiorespiratory fitness, physical and mental health, sleep patterns, energy levels, and long-term exercise participation. Based on *phronesis* (practical reasoning/wisdom), *techne* (art, skill development), and Merleau-Pontian embodiment (body-mind interaction in movement), it has been speculated that exercise can be

valued if it is linked to artistic expression (*techne*) within a supportive community (embodiment and *phronesis*), emphasizing the inherent qualities of movement, including skill, fitness, and physique improvement (*techne*, embodiment and *phronesis*). Therefore, the purpose of this study was to examine the reasons for participating in an aerial practice/dance class, including perceived challenges and future exercise goals, among undergraduate students in a major university setting.

Method: This was a *phronetic*, qualitative study among 13 undergraduate students ($M_{\text{age}} = 20.46 \pm 2.03$ years old; females = 9; males = 4; Whites = 10; African Americans = 2; Middle Eastern = 1), who enrolled in an undergraduate class of aerial practice at a major South Eastern university in the USA. Individual-based interview questions included reasons and challenges in participating in aerial silks, perceptions about the social setting of the class, current and past exercises, and future exercise goals.

Analysis/Results: According to the *phronetic*-based, thematic analysis three themes emerged. The first theme was the *love of aerial dance* including *artistic, embodied, and phronetic* aspects: performativity, art, expression; fitness, skill, and physique improvement; fluidity, in the zone (transcendental feeling, body-mind interaction); challenging, infinite learning; whole-body movement; dedication, determination; inclusive and supportive community; novelty of activity; and adrenaline rush. *Challenges with aerial dance* was the second theme, which also included *artistic, embodied, and phronetic* aspects: challenging to improve in performativity, skill, fitness; fear, injuries, pain, bruises; boredom; time aspects (commitment, teaching versus training); other priorities (job, education); and unhealthy competition in the business world (territorial traits and lack of sharing). Although most students were not majoring in (physical) theater ($n = 9$) and they faced several challenges with aerial silks, their *future exercise plans* (third theme) were to teach and/or practice aerial silks, keep exercising, perform, and teach somatics (differentiating and integrating body groups in movement). Several students had an exercise background, which assisted with their loving of aerial dance, including gymnastics, dance, cheerleading, and aerial practice.

Conclusions: Based on the results, exercise promoters can utilize a combination of artistic, embodied, and *phronetic* approaches to enhance the value of movement: a) incorporating performative, playful, expressive and challenging forms of life-long movement within a supportive community (e.g., physical theater); emphasizing personal growth and improvement in skill,

fitness, and physique. If movement is highly valued, certain challenges (e.g., brush burns and bruises) can be overcome. If challenging aspects are emphasized (e.g., performativity), boredom can decrease. Discussing realistic challenges, such as the need to pursue other priorities (education, job) and at times the unhealthy competition in the industrial world of aerial dance, can enhance understanding and wise decisions (*phronesis*) regarding the pursue of future exercises either in teaching and/or performing aerial dance or in continuing with other exercises that positively affect aerial dance performance.

The Relationships Between Attitude Toward Physical Education, Physical Activity and Sedentary Behavior, and Knowledge Among Middle School Students

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Background/Purpose: Physical education (PE) is a critical channel for school-based physical activity (PA) promotion. The purpose of this study was to examine the relationships between adolescents' attitude toward PE, PA and sedentary behavior, and knowledge of PA and fitness (PAF knowledge).

Method: A total of 350 6th to 8th grade students (boys: $n = 145$) recruited from a diverse public middle school located in a southern U.S. state. The school enrolled 455 students, 211 of whom were eligible for free/reduced meals. A majority of the students were White/Caucasian ($n = 258$), followed by Black/African Americans ($n = 176$) and other ethnicities ($n = 21$). The school offered single-sex PE classes five days a week, following the multi-activity sports-based curriculum. Surveys were administered to collect data for demographic information, attitude toward PE, PA and sedentary behaviors, and PAF knowledge using validated measures. Hierarchical linear regressions were conducted to examine the associations between attitude, PA and sedentary behavior, and PAF knowledge, using RStudio 1.1.453.

Analysis/Results: The results showed that gender was a significant predictor of overall PA ($R^2 = .05$), PA after school ($R^2 = .06$), and sedentary behavior ($R^2 = .02$). Grade played a significant role for PA but not for sedentary behavior in this study. Regression analysis showed significant predictions from attitude to overall PA ($\beta = .32, p < .01, R^2_{\text{partial}} = .31$), PA at school ($\beta =$

.28, $p < .01$, $R^2_{\text{partial}} = .26$), and PA after school ($\beta = .32$, $p < .01$, $R^2_{\text{partial}} = .13$), after controlling for gender and grade. We also observed significant predictions from enjoyment (affective dimension of attitude) and usefulness (cognitive dimension of attitude) to overall PA ($\beta = .29$, $R^2_{\text{partial}} = .30$; $\beta = .32$, $p < .01$, $R^2_{\text{partial}} = .31$, respectively), PA at school ($\beta = .24$, $R^2_{\text{partial}} = .25$; $\beta = .29$, $p < .01$, $R^2_{\text{partial}} = .27$, respectively), and PA after school ($\beta = .31$, $p < .01$, $R^2_{\text{partial}} = .13$; $\beta = .30$, $p < .01$, $R^2_{\text{partial}} = .12$, respectively). No significant prediction was observed from PAF knowledge to PA or sedentary behavior ($p > .05$).

Conclusions: The results demonstrate the significant role of attitude toward PE (both cognitive and affective dimensions) in PA or sedentary behaviors among middle school students. Gender and grade also moderate the relationships between attitude and behaviors. PA promotion efforts in similar schools should take into account these factors to maximize intervention effectiveness.

The Role of Physical Education Within a Comprehensive School Health Promotion Program

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Background/Purpose: To address the obesity epidemic and promote children's health, an increasing number of K-12 schools offer programs designed to promote physical activity and positive health behavior. Many of these programs have addressed the school nutrition environment and general physical activity opportunities within the school setting but physical education is often neglected in the design of interventions. Empirical inquiry conducted to establish the role of physical education within the school health environment may help researchers to develop suitable interventions that integrate this subject area.

Method: Grounded in the Social Ecological Model (SEM) a case study method was employed to acquire the insights of key stakeholders (N=67) in a school nationally recognized for promoting physical activity and health. This school received the Gold award from the Alliance for a Healthier Generation for health promotion. Physical education and movement was a primary focus such that all students in K-8 received daily physical education. Data were collected using formal interviews, informal interviews, observations, and document analysis. The focus of interviews was to uncover stakeholders' beliefs about the physical

education program and its value within the school model. The lead investigator spent 42 full days in the school over four consecutive months conducting formal and informal observations. The validated Systematic Observation for Fitness Instruction Time (SOFIT) tool was used to estimate students' activity level and intensity within physical education lessons. The SOFIT measure categorizes student activity, lesson context, and teacher interaction. Over the course of the study 37 observations of grades K-8 were conducted.

Analysis/Results: The SOFIT data show that students were engaged in moderate-to-vigorous physical activity for 26 minutes (51%) of physical education lessons, and engaged in management/transition activities (28%); organized game play (26%); fitness activities (17%); knowledge acquisition (14%); and skill development (11%), with a small proportion of miscellaneous/other activity (2%). Teachers spent an average of five minutes per lesson (10%) promoting physical activity, fitness, and skill development. Qualitative data were analyzed utilizing grounded theory and constant comparison. Following open coding, initial themes were grouped and converged using axial coding to generate more comprehensive themes. Parents' and students' perceptions of physical education were high, and almost all parents cited the physical education program and the impact of daily physical education on their children's health as a primary reason why they elected to enroll their children in the school. Despite positive perceptions from parents and students, physical educators felt marginalized within the school infrastructure and expressed frustration at the lack of administrative support for physical education. Systemic barriers to program quality included lack of program leadership, feelings of marginalization, and insufficient collaboration.

Conclusions: Findings raise concerns about the difficulty of sustaining a high-quality physical education program even in a school recognized for its significant support of physical activity. Organizational and interpersonal factors impeded the ability of physical educators to have a stronger impact in a school emphasizing health promotion. Accordingly, future research is warranted to assess the quality, credibility, and sustainability of school health and wellness programs nationally recognized for health promotion.

Three-Day Food Analysis of Young Adults as Part of Health Education

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Background/Purpose: Diet modification and physical activity are key factors for the prevention of cardiovascular disease and cancer. Accurately assessing habitual diets at an individual level is important in health education. Diet records and diet history methods have typically been used for this purpose (Sasaki et al., 1998). Therefore, physical educators should focus on both nutritional intake as well as physical activity as part of any health education. The purpose of this research was to record and analyze college students' eating habits and to investigate the effects of nutrition analysis as a health education tool.

Method: We evaluated a 3-day food record analysis, which was designed to be entirely self-administered. A total of 45 participants (Female=25) aged 19–25 completed the food record and analyzed it. It contained instructions for recording food intake and an example of a correctly completed day's record. The subjects kept the food record (either consecutively or nonconsecutively) for two weekdays and one weekend. The participants were asked to record the amount of food consumed using multiple types of household tableware in order to increase the accuracy of portion sizing. A web-based food analysis program (Fitbit.com) was used to analyze the diet records. We analyzed the data and compared the results to the dietary guidelines for Americans (USDA, 2015). Moreover, we conducted deductive qualitative content analysis to report on the students' dynamic perception for a 3-day food analysis. The analysis included the following categories: 1) reading; 2) categorization and coding based on SDH Factors; 3) reviewing and recoding; 4) interpretation and theme formulation; and 5) refinement of themes.

Analysis/Results: Average nutrition intake levels were compared to the recommended nutrition intake values. Males and female consumed 87% (2435 cal.) and 74% (1640 cal.) of the recommended nutrition intake (Male: 2800 cal., Female: 2200 cal.). Average intakes of Protein (Male: 21, Female: 17%), Fat (Male: 32%, Female: 32%) and Carbohydrate (Male: 47%, Female: 50%) met the target amounts range for both groups (Protein: 10~35%, Fat: 25~35%, Carbohydrate: 45~65%). Dinner rates did not exceed the recommendation limits (below 50%) for both male (36%) and female (35%). However, the low average intakes of vegetables across both male (9%) and female (16%) groups in comparison to recommended intake levels (40%). 6 themes emerged from students' perceptions: recognition of eating habit, necessity of balanced food, more fruits and vegetables consumption, diversification in protein foods Choices, refined grains to whole grains, nutrient dense foods, physical activity engagement.

Conclusions: We examined a self-administered diet history using a 3-day food analysis as a health education tool. This approach can allow young adults to recognize their daily nutrition intake and compare it to that of the national recommendation. This analysis procedure is key for understanding individual eating dynamics, and it can provide a useful foundation for developing future healthy-eating habits. We hope this approach will be used by health educators to teach college students how to develop a comprehensive view of their eating patterns. Moreover, the potential of these strategies in health education is being explored and developed.

Three-Year Cardiorespiratory Fitness Growth and School-Level Correlates in High School

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Background/Purpose: Cardiorespiratory endurance is found to be associated with all-cause mortality in adults, and associated with academic performance in school-aged children (Lee et al., 2012; Welk et al., 2010). While fitness testing in schools often includes cardiorespiratory fitness (Morrow et al., 2008), many studies in this area fail to take into consideration school-level factors such as curriculum conditions that can influence student fitness. Using an existing large-scale dataset, this study aimed to examine high-school students' cardiorespiratory fitness growth and its school-level correlates in schools where the same curriculum was implemented.

Method: The participants included 77,327 ninth, tenth, and eleventh graders (48% female) from 57 high schools in a Mid-Atlantic state. The participants ranged from 14 to 18 years old. The *Five for Life – Advanced* curriculum (Focused Fitness LLC, 2015) was implemented in these high schools throughout three years. Physical educators conducted the 20-meter progressive aerobic cardiovascular endurance run (PACER) in accordance with the guidelines (Plowman & Meredith, 2013). Student age, sex, and grade level were also collected at student level. The school-level variables included student/faculty ratio, percentage of students receiving free and reduced lunch (FARM), and school academic performance (SAP, percentage of students passing the state assessment in each school).

Analysis/Results: Because the data had a nested structure, namely individuals tested multiple times and

nested in schools, we conducted hierarchical linear modeling to accommodate for the varied testing intervals in different schools and the three level data structure (Raudenbush & Bryk, 2002), where the PACER test performance was the dependent variable. The result showed that ninth-grade girls averaged $30.56 \pm .66$ laps, while boys on average scored $17.54 \pm .38$ more than girls. Boys' and girls' PACER performance had divergent quadratic growth curves in high-school years with positive first-order ($\beta = 2.67$) and negative second-order ($\beta = -1.12$) coefficients. Student/faculty ratio ($\gamma = -1.44$) and FARM ($\gamma = -5.44$) were negatively associated, whereas SAP was not significantly associated with student PACER performance ($p > .05$). Overall, the model explained about 46.24% of global variances in PACER performance in high school years.

Conclusions: The results showed that students' cardiorespiratory fitness growth formed quadratic curves under the curriculum condition of *Five for Life* in high-school years. Specifically, as the students moved to higher grade levels, the growth rate declined. Boys and girls had divergent growth curves in high-school years. It is not surprising that student/faculty ratio and FARM are negatively associated with PACER performance. The insignificant association between SAP and PACER was likely due to the fact that SAP and FARM were confounded.

Trends of Sedentary Behavior in High School Students in the United States, 2003–2015

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Background/Purpose: Sedentary behaviors (SB) are associated with higher risk for chronic disease among adolescents. The habit of SB as a childhood affects adults as well. Therefore, it is important to investigate the trend of SB among adolescents. The purpose of this study is to evaluate secular trends in recreational SB (Hours of TV watching and computer usage) among US high school students. In addition to evaluating SB trends among the various subpopulation, including different gender, race-ethnicity, and body mass index (BMI) levels.

Method: Data from a total of 20,009 high school students who participated in the Youth Risk Behavior Survey (YRBS) during 2003 to 2015 were analyzed for this study. Time spent in recreational SB was measured

using two questions of YRBS; (1) on an average school day, how many hours do you watch TV? and (2) on an average school day, how many hours do you play video or computer games or use a computer for something that is not school work?. BMI was categorized into three levels: (1) obese (i.e., BMI \geq 95th percentile by age and gender); (2) Overweight (i.e., 85th percentile \leq BMI $<$ 95th percentile by age and gender); (3) Normal weight (i.e., BMI $<$ 85th percentile by age and gender). SAS (v 9.3) and Stata (v. 12) were applied to examine the trends of SB among high school students in the United States. Tests for trend over the years were performed using linear and quadratic-specific orthogonal polynomial coefficients.

Analysis/Results: For the overall sample, there was a negative linear trend of TV watching hours ($\beta = -.11$, $p < .001$), however, computer using hours was a positive linear trend ($\beta = .17$, $p < .001$). Between 2003 and 2015, TV watching hours decreased from 2.31 hour/day to 1.25 hour/day and computer usage increased from 1.10 hour/day 2.01 hour/day. Further, for nearly all subpopulations, linear trends were observed, in that TV watching hours decreased and computer using hours increased from 2003 to 2015.

Conclusions: Continued surveillance of temporal changes recreational SB hours is necessary to monitor how such changes may underlie changes in health outcomes such as obesity and chronic disease.

Undergraduate Student Experiences in an Online Physical Education Course

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Background/Purpose: Online physical education activity courses have become an increasingly popular option for college students. The purpose of this study was to examine the experiences of undergraduate students enrolled in an online university physical education course. Multiple sections of this course are offered each semester enrolling almost 1,800 students annually. All course materials and requirements are standardized between all sections of the course. Students use a wearable activity tracker to record their physical activity and sync their device to allow their instructor to see their progress in relation to the weekly course grading criteria. As with many technology devices, technical issues arise, and the course has gone through

numerous changes to help better meet the needs of the students. The main goal of this study was to understand common problems noted by students in order to improve the online course experience.

Method: Participants were 964 university students enrolled in 17 different sections of an online physical activity course. Data collection included a seven question survey focusing on student experiences in the course administered at the end of the academic term. The survey included seven questions on a five point Likert scale with four questions ranging from strongly agree to strongly disagree. Two questions ranging from no to yes more than 3 times and one question ranging from I never contacted them to more than one week. Qualitative data were collected from two open response questions to allow students to voice their opinions of the course.

Analysis/Results: A Cronbach's Alpha was conducted as well as means standard deviations and frequencies. The survey consisted of 7 items ($\alpha = .72$). Frequencies indicated that 80% of students ($n = 774$) did not need help from their instructors and 93% ($n = 190$) of students that contacted their instructor heard back within 48 hours to resolve any issues. When asked if students believed the activity tracker altered their daily activity habits, 76% agreed that it did change their daily activity habits (e.g., walking to class). Additional quantitative and qualitative results indicated a positive experience for students within the class.

Conclusions: Based on these findings it was concluded that the majority of students did not have any issues utilizing the wearable technology in the course. For students that did have issues, they were able to contact an instructor and hear back in a timely manner. It was also found that the majority of students believed that using the activity tracker did change their daily activity habits. However, the majority of students indicated that they did not intend to continue to use the activity tracker after the course ended.

Unfolding Young Children's Physical Activity Participation During School Hours

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Background/Purpose: Physical activity (PA) promotion remains a big challenge as over half of the children ages of 6-11 in the United States do not meet the 60

minutes of daily moderate-to-vigorous physical activity (MVPA) guidelines (Hastie, 2017). PA opportunities during school hours include physical education (PE), recess, lunch time, and classroom break, which are crucial components to help young children accumulate MVPA time (SHAPE America, 2013). However, the distribution of young children's MVPA during those PA intervals is not clear as well as how that may be differ based on various demographic background. The purpose of this study was to evaluate young children's daily MVPA levels at various time segments, including PE time, lunch time, and recess time. The effects of gender (boy versus girl), weight status (healthy versus unhealthy), and ethnicity (Hispanic versus nonHispanic) on MVPA in each time interval were also examined.

Method: A cross-sectional research design was used in this study. Participants were 342 third-grade students recruited from four elementary schools in North Texas ($M_{age} = 8.40$, $SD = .50$; girls = 155, 45.3%; Hispanic = 146, 42.7%; healthy weight [BMI in healthy fitness zone] = 191, 55.8%). PA was objectively measured using accelerometers for five consecutive school days (6-7 hours/day). The school-based MVPA in PE time, recess time, and lunch time were calculated and coded in each time interval. The demographic information was provided by the school district. Descriptive analyses were applied to capture the distributions of MVPA in each time interval. The multivariate analyses of variances (MANOVA) were conducted to test the group differences for the study variables.

Analysis/Results: On average, the overall school-based MVPA of these third graders was 102.06 min ($SD = 37.95$) within a school day ($M = 391.87$, $SD = 15.52$). The results showed that over half of the school-based MVPA were from the combination of PE time (33%), recess (19%), and lunch time (9%). Specifically, 30% of the school-based moderate PA were contributed by the PE time and most of the vigorous PA were composed of the PE (50%) and recess (49%). MANOVA results demonstrated significant effect for gender ($p < .001$, $\eta^2 = .22$) and weight status ($p < .05$, $\eta^2 = .09$), but not for ethnicity. Boys had significantly higher overall school-based MVPA (107.92 versus 90.36, Cohen's $d = .39$), with higher vigorous PA in PE time (7.81 versus 5.67, Cohen's $d = .37$) and recess time (8.59 versus 4.54, Cohen's $d = .93$) than girls. Healthy weight children had higher vigorous PA at recess (7.02 versus 6.28) and at lunch time (1.51 versus 0.61) than unhealthy-weight children.

Conclusions: These findings highlight the important role of school-based PA in developing physically active

and healthy children for the goal of “50 million strong”. Besides the primary contribution of PE time, recess time also can contribute a substantial amount of MVPA during a school day. The findings suggest that school-based PA promotion should provide both structured (i.e., PE) and unstructured (i.e., recess) PA opportunities to engage young children, especially girls during early school years.

Use of Virtual Reality on Teaching Anatomical Concepts for Students Studying an Upper Division Motor Movement for Special Populations Class

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Background/Purpose: Many students enroll in kinesiology to become physical education teachers or enter physical or occupational therapists. A developing kinesiology major needs to understand the majority of disabilities that they will encounter in their work. This requires a clear understanding of human anatomy and physiology. Virtual reality has demonstrated stimulation of learning and comprehension, as it relates to symbolic and experiential information (Bowman, Hodges, Allison, & Wineman, 1998). Virtual Reality is not new and has been highly used for enjoyment in recreation and gaming (Stansbury, 2016). However, more recently the discussion has been of its capability as a successful a means of instruction in the contemporary classroom, and considered a way to increase engagement from a new perspective (Moro, Stromberga, Raikos & Stirling, 2017). More to the point, previous research literature has demonstrated that virtual reality has created new and potential opportunities for learning in biology and human anatomy (Trelease, 2016). A regional university in the southern U.S. collaborated with the Bill and Malinda Gates Foundation to create a University Digital Fellows program for faculty to analyze various technologies to improve learning and classroom engagement. Students utilized the Oculus Rift hardware, reported by previous literature as a successful tool for anatomical modeling (Moro, Stromberga, & Stirling, 2017).

Method: Participants included 33 undergraduate college students enrolled in a Motor Skills for Special Populations class, allowing them to understand disabilities and common adaptations used in motor movement. Comparing the instructional treatment group to the aggregated data of the previous two years classes, collected over multiple semesters involving about 160

previous students, between the years of 2015 to 2017. Final grades of both groups analyzed with a Mann-Whitney U test to compare final letter grades due to nonparametric data use. Students filled out a semantic differential scale on software use and access. Additionally, Descriptive statistics and student make up for the treatment and aggregated control group were consistent with a normal class.

Analysis/Results: Of those who participated in the virtual reality instructional group (n=33), the majority reported the virtual reality hardware and software was easy to use (80%), highly enjoyable (88%), success in learning (64%), and highly engaging (84%). In regards to final grades, that statistical analysis of a Mann-Whitney U test noted a statistically significant difference between the two groups (U=.001). Notably that the aggregated control group scored significantly higher than the virtual reality treatment group.

Conclusions: Key findings note that the use of a virtual reality anatomical program in this study did not show a benefit to learning via the participant’s final grades, regardless of statements of engagement. Concern in this study does exist on the specific treatment group, a review of class participants revealed that while they were demographically similar to past groups. The class transcripts noted that most of the participants fell far lower in overall academic achievement the past few years. A recommendation is to consider further research on the topic and begin to utilize for tracking across multiple semesters for a more equal comparison with control groups.

Using Critical Incident Technique to Investigate Anxiety in Physical Activity Settings Among College Students

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Background/Purpose: Physical activity (PA) participation is linked with many benefits including a reduction in anxiety (Rebar et al., 2015). Anxiety is a normal human emotion characterized as an individual’s reaction to a stressful situation. Most of the literature surrounding anxiety and physical activity focuses on the anxiolytic effects of activity; it is also important, however, to explore aspects of activity that provoke anxiety and discourage individuals from engaging in PA. One way to investigate sources of anxiety in physical activity is to use the Critical Incident Technique. The purpose

of this study was to examine college students' experiences in various physical activity settings that incited anxiety and to examine the implications these negative experiences had on intentions to participate in the activity again.

Method: Data were collected from 122 undergraduate students (23% male, 77% female; $M=21.23\pm 1.77$ years) from Kinesiology courses at a university in the Southeastern United States. Participants completed an online questionnaire during a regularly scheduled class period. They were prompted to think of a specific event when a physical activity setting made them anxious and explain the event in as much detail as possible. In addition, the participants were asked how significant individuals contributed to their anxiety in the specific event. Finally, they detailed how this event affected their decision to participate in the activity again and what strategies could be used to decrease anxiety in the situation they described. The responses were inductively analyzed using the process outlined by Flanagan (1954) and were reviewed by another rater to establish interrater reliability.

Analysis/Results: Every participant could think of a time when a physical activity setting triggered feelings of anxiety. Two main themes emerged: common settings (sport settings, credit-based classes, and workout facilities) and sources of anxiety related to fragile self-beliefs and the threat of negative social evaluation.

Conclusions: Most participants who experienced anxiety in a sport setting described typical precompetition anxiety (Landers & Arent, 2005) or a fear of failure about their performance. Another common theme in sport settings was anxiety from interactions with a coach. It is important to note that compared to the other settings, anxiety experienced in sport settings did not deter individuals from future participation. Individuals who experienced anxiety in credit-based PA classes noted anxiety from the teacher, low perceived competence and social interactions. Those who felt judged often self-handicapped their performance to protect their self-esteem (Su, McBride, & Xiang, 2015). At workout facilities, participants experienced anxiety due to a lack of knowledge or unfamiliarity with the facility and negative social interactions. Across these settings, the underlying theme of fragile self-beliefs was apparent, often due to a lack of confidence in one's ability (Endler, 1997). Also, negative social evaluation (i.e. feeling judged by peers or negative interactions with a teacher or coach) was consistently mentioned as anxiety-producing. Understanding factors that may produce anxiety can help practitioners create environments that are welcoming for all and promote maximum participation.

Validation Studies of Three Physical Activity Questionnaires in College Students

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Background/Purpose: This study aimed to examine reliability and validity of the three modified physical activity (PA) questionnaires in Chinese compared with accelerometry measure of PA.

Method: A total of 59 college students (27 males and 32 females) voluntarily participated in this study. Each participant wore the ActiGraph activity monitor (wGT3x-BT) for seven consecutive days following the wearing protocols. In addition, the participants completed the three questionnaires which were modified from International PA Questionnaire—Long Version (IPAQ-L), International PA Questionnaire—Short Version (IPAQ-S), and Globe PA Questionnaire (GPAQ). Prior to data analysis, each of the three questionnaires' energy expenditure (EE) in vigorous PA, moderate PA, and overall PA were calculated using METs to Kcal formula based on ACSM's *Guidelines for Exercise Testing and Prescription*. Accelerometry's EE in vigorous PA, moderate PA, and overall PA were calculated based on Freedson VM3 Combination (2011) EE algorithm and Troiano (2008) cut points from ActiLife 6.11 software.

Analysis/Results: Cronbach alpha coefficients were conducted to examine the internal consistency of the three questionnaires, the alpha coefficients of IPAQ-L and IPAQ-S were $\alpha = .75$; $\alpha = .74$, indicating acceptable internal consistency, but the GPAQ's alpha coefficient was very low ($\alpha = .13$). To examine the criterion-related validity of the three questionnaires, the Pearson correlation coefficients were performed. The results showed that the EE in overall PA of the accelerometry was significantly correlated with that of IPAQ-L ($r = .49, p < .01$), that of IPAQ-S ($r = .64, p < .01$), and that of GPAQ ($r = .56, p < .01$), indicating each questionnaire showed an acceptable validity for EE in overall PA. In contrast, the results only showed that the EE in moderate PA and the EE in vigorous PA between the accelerometry and the GPAQ were significantly correlated ($r = .50, p < .01$; $r = .28, p < .01$), but not between accelerometry and IPAQ-L or the accelerometry and IPAQ-S.

Conclusions: This study indicated that IPAQ-L and IPAQ-S had acceptable reliability but GPAQ did not. IPAQ-L, IPAQ-S, and GPAQ were valid tool that can be used to assess Chinese college students' EE in overall PA. In addition, GPAQ was a valid tool for assessing Chinese college students' EE in moderate PA and EE in vigorous PA.

Virtual Reality Exercise on College Students' Motivation and Energy Expenditure

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Background/Purpose: Sedentary behavior and physical inactivity are a global public health concern. While commercially-available virtual reality (VR) exercise systems have been used in several healthcare settings among clinical populations, evidence regarding the efficacy of this technology on healthy adults' health outcomes remains largely unexplored. This study's purpose was to investigate differences among college students' situational motivation and energy expenditure (EE) during immersive VR, nonimmersive VR, and traditional stationary biking sessions.

Method: Forty-nine healthy college students (35 males, $M_{\text{age}} = 23.6$ years old) completed three separate 20-minute biking sessions: 1) immersive VR biking on the VirZoom VR bike using PlayStation 4; 2) nonimmersive VR biking on the Gamercize bike using Xbox 360; and 3) traditional biking on the Spirit Fitness XBU55. Students' situational motivation was assessed via the Situational Motivation Scale following each session. This 16-item survey included four constructs: intrinsic motivation, identified motivation, external regulation, and amotivation. Energy expenditure in kcalories/hour was assessed with ActiGraph GT3X+ accelerometers. One-way repeated-measures ANOVA evaluated mean differences for these outcomes among the three biking sessions.

Analysis/Results: Although nonsignificantly different, students demonstrated greater EE during VirZoom VR biking (401.9 ± 170 kcal/hour) than during Gamercize biking (334.5 ± 118.5 kcal/hour) and traditional biking (396.3 ± 169.5 kcal/hour). Significant differences between biking sessions were observed, however, for intrinsic motivation ($F(1, 48) = 91.75, p < 0.01, \eta^2 = 0.657$) and external regulation ($F(1, 48) = 9.8, p = 0.03, \eta^2 = 0.169$). Specifically, post hoc Bonferroni comparisons indicated greater intrinsic motivation (6.3 ± 0.72) and external regulation (2.7 ± 1.4) for VirZoom VR biking compared to the other two biking sessions.

Conclusions: Findings suggested that VirZoom VR biking elicits similar EE compared to traditional biking, with an advantage observed in the fact the VirZoom VR bike was able to promote greater situational motivation during exercise. This suggests immersive VR exercise biking may be an attractive alternative to promoting increased motivation and PA participation among college students

while eliciting approximately the same physiological adaptations. Future research is warranted among other populations to confirm these observations.

Weight Gain and Fitness Loss of Children Over the Summer

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Background/Purpose: Schools are considered an ideal location for the promotion of physical activity and the prevention of obesity due to the fact that most children attend school and that school have the facilities, equipment, and necessary supervision to promote physical activity. Unfortunately, many children do not have access to physical activity programming or safe physical activity space during the summer. Recently, summer weight gain and fitness loss has emerged as a concern for practitioners and researchers working to prevent overweight/obesity and to promote physical activity in children. This is especially true for physical educator and physical activity leaders who work hard to provide opportunities for youth to be active and gain fitness only to see declines over the summer. The purpose of this study was to explore the trends in weight gain and cardiovascular fitness loss over two summers in youth participating in a Comprehensive School Physical Activity Program (CSPAP).

Method: Participants were 404 children in grades 1 through 4 from three urban elementary schools in a capital city in the Western United States. 95% of children were of ethnic minority decent and were receiving free or reduced lunch. As part of the school CSPAP program evaluation each child completed the Progressive Aerobic Cardiorespiratory Endurance Run (PACER) and had their height and weight measured at the beginning and end of each academic year. Body Mass Index (BMI) was calculated using the formula kg/m^2 . Means and standard deviations were calculated for BMI and PACER laps. After screening for outliers, a general linear mixed effects model was employed to examine changes over time by sex and grade.

Analysis/Results: BMI was 18.4 during the Spring 2015, 18.7 Fall of 2015, 18.3 Spring 2016 and 19.6 Fall 2016. PACER laps were 26.8 during the Spring 2015, 25.9 Fall of 2015, 27.4 Spring 2016 and 27.0 Fall 2016. The results from the general linear mixed effects models suggest that for BMI, there was a nonsignificant trend toward an increase in BMI after the summer of

2015 and a significant increase in BMI after the summer of 2016 compared to baseline ($p < 0.001$). For PACER laps, there were trends toward decreases in PACER laps after the summers of 2015 and 2016, however the mean differences were not statistically significant compared to the baseline time-point. Grade level and sex did not modify any of the observed time trends.

Conclusions: Summer breaks attenuated the BMI and PACER improvements observed during the school year. This highlights the importance of additional and affordable or no cost physical activity opportunities for youth in the summer months.

Wellness Behaviors of First-Year College Students Over an 11-Year Period

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Background/Purpose: Students entering college are faced with choices regarding their overall wellness and health behavior. The interdependent model of social, occupational, spiritual, physical, intellectual and emotional dimensions of wellness are important aspects in leading a healthier lifestyle. Understanding the choices in these dimensions of wellness can help university health and physical education professionals understand current behaviors and identify programs that may improve students' well-being throughout their college years. The purpose of this study was to examine the wellness behaviors of first-year students from a Northeastern U.S. university over a 11-year period.

Method: 12,267 first year students (5808 females) completed the TestWell Holistic Lifestyle Questionnaire online over an 11-year period from 2006-2017. The average age for males and females was 19.06 years and 18.85 years, respectively. The Test-Well Questionnaire consists of 100 questions grouped into 10 categories: physical fitness, nutrition, self-care/safety, environmental wellness, social awareness, emotional awareness, emotional management, intellectual wellness, occupational wellness and spiritual/values. Students responded to each question using a Likert scale of 1 (Never/Almost Never), 2 (Occasionally), 3 (Often), 4 (Very Often) and 5 (Always/Almost Always). An overall composite score was given for each student along with a score in each individual category. An overall score composite score of 800-100 was considered Excellent, 600-790 considered Good and Less than 600 considered Room for Improvement. An individual category score

of 80-100 was considered Excellent, 60-79 considered Good and less than 60 considered Room for Improvement.

Analysis/Results: The overall composite score was 718.77 with an average score of 707.31 for males and 731.46 for females, indicating that the students scored in the Good Range. The percentile score by category was: Physical (59.52), Nutrition (61.08), Self-Care (70.34), Environment (64.58), Social (71.77), Emotional Awareness (86.96), Emotional Management (79.62), Intellectual (69.90), Occupational (82.55) and Spiritual (72.44). Emotional awareness, emotional management and occupational wellness exceeded the 80th percentile. Nutrition, self-care, environment, social, intellectual and spiritual categories fell between the 60th and 79th percentile, indicating positive choices were being made. However, the physical category scored lower than the 60th percentile.

Conclusions: The students appear to be making good choices in the emotional dimension relating to awareness and acceptance of one's feelings, feeling positive and enthusiastic about oneself and life. The occupational wellness category is strong in first-year students, showing a personal satisfaction and enrichment in their life related to their attitude about their work. Although it is a great start with a good foundation, they need to make some additional positive changes in their lifestyle in nutrition and self-care dimensions. Their social and environmental dimension continues to remain strong as they look positively on their environment and interdependence on others and their community. Students recognize their creative activity along with their knowledge and skills in the intellectual dimension and their search for meaning and purpose through their spiritual dimension. It is important that university health and physical education professionals focus on the physical wellness category as areas of improvement for students by emphasizing the need for regular physical activity as a means to reduce risk factors for disease.

What Factors Influence Preservice Teachers in Possessing Fitness Orientations?

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Background/Purpose: Occupational socialization theory (Lawson, 1983) suggests that physical education teachers are strongly influenced on the profession roles and responsibilities of teachers before they enter a formal physical education teacher education degree program. Prior research on the occupational

socialization of preservice physical educators suggests that incoming recruits typically possess teaching, hard-core coaching, or moderate coaching orientations (Curtner-Smith, Hastie, & Kinchin, 2008, Vollmer & Curtner-Smith, 2016). However, it has recently been hypothesized that a fitness orientation is now possessed by prospective physical education teachers (Richards & Padaruth, 2017). Data from a pilot study conducted in 2016 suggested that fitness orientations are evident within physical education teacher education programs. The aim of this study was to identify what influences preservice teachers to possess this orientation. Socialization orientations can have both a positive and negative influence in relation to how preservice teachers absorb faculty messages during their formal training. Therefore, it is important to investigate the factors that have influenced fitness oriented preservice teachers' so physical education teacher education faculty can understand and address the prior experiences of future incoming recruits.

Method: Participants were preservice teachers (n=14) enrolled in a hybrid physical education teacher education program in the North-East United States. Qualitative data were collected through autobiographical essays, peer-teaching observations, document analysis, and stimulated-recall interviews. NVivo 11 Pro software package was employed to analyze data using analytic induction and constant comparison techniques.

Analysis/Results: Data suggested that preservice teachers' possessed five different socialization orientations within the sample (hardcore fitness, fitness/coaching, teaching/coaching, hardcore coaching/moderate fitness, and balanced). Three preservice teachers' possessed hardcore fitness orientations, with six possessing moderate fitness orientations. Fitness oriented preservice teachers' were primarily influenced by two factors. First, a perceived decline in physical education quality as schooling progressed. Second, fitness related goals that occurred as a result of participation in elite level sport.

Conclusions: Further investigation into fitness oriented preservice teachers is needed, as empirical data on this population is very limited. It is suggested that faculty address the orientations of all incoming recruits in order to identify any trends that occur among specific groups.

Your State's Physical Activity Plan: Can It Enhance Your CSPAP?

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Background/Purpose: Most states have some type of public health plan that includes a physical activity (PA) component, and many have identified strategies and intended outcomes related to PA. However, most states have not developed stand-alone physical activity plans modeled after the National Physical Activity Plan (NPAP), as recommended. The purpose of this study was to identify state-specific plans that included PA, and to identify those plans that included children and schools. The following research questions were answered: 1) Do they exist in every state? 2) Do they specifically mention children and schools? 3) Are strategies and tactics included that align with the NPAP? and 4) Do they make recommendations as set forth by the PA Guidelines for Americans? Implications related to Comprehensive School Physical Activity Plans (CSPAP) are revealed.

Method: Researchers developed and conducted a standardized Internet search audit of each of 50 US states and the District of Columbia to determine the prevalence and characteristics of health planning documents that include physical activity. A standardized search term protocol was used to abstract data using the Google search engine. The primary outcomes considered in this analysis included states that consider children a priority population, alignment with the *Physical Activity Guidelines for Americans* (aerobic, muscle-strengthening, and bone-strengthening in children), congruency to the Education sector as outlined in the NPAP, and utilization of strategies and tactics to guide Plan goals and objectives.

Analysis/Results: Two hundred fifteen (215) state-level public health plans were analyzed. Seventy-one percent (71%) focused on children as the priority population. The Education sector, as described in the NPAP, was the most targeted across health planning documents (66.8%), with 33.2% of the plans having no information about or no alignment with the Education sector. Specific strategies and tactics have been identified for select states and will be presented.

Conclusions: Schools need to know the status of physical activity plans that are supported by health agencies in their state, and leverage those plans and the agency's support for expanding and publicizing their CSPAP. If modeled after the NPAP and following the National PA Guidelines, children and the educational environment should be a focus, and strategies should be included for meeting the objectives of the Plan. A CSPAP needs support from local community and state partnerships to give children a plethora of PA opportunities before, during and after school, and to engage communities, staff, and

families. The researchers will share how state plans with stakeholder support from a variety of population sectors (i.e. business/industry, parks and recreation, media, transportation, etc) can contribute to enhanced CSPAP.

Youth's Knowledge About Marijuana and the Law

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Background/Purpose: Marijuana is the most commonly used illicit drug according to the 2015 National Survey on Drug Use and Health. In 2016, 9.4 percent of 8th graders reported marijuana use in the past year and 5.4 percent in the past month (current use). Among 10th graders, 23.9 percent had used marijuana in the past year and 14.0 percent in the past month. Rates of use among 12th graders were higher still: 35.6 percent had used marijuana during the year prior to the survey and 22.5 percent used in the past month; 6.0 percent said they used marijuana daily or near-daily (O'Malley, P., Miech, R., Bachman, J., Schulenberg, J., 2016). Nine states and Washington, DC, have legalized marijuana for recreational use for adults over the age of 21. Medical marijuana is legal in another 29 states. The purpose of this study was to determine California adolescent's use of and knowledge about marijuana after marijuana was legalized.

Method: Convenience sampling was used to recruit middle and high school aged youth. The range of ages were from 10-17 with most participants, 16-17. Seventy percent identified as female. All major ethnicity groups were represented, however, 50% identified as Hispanic and 35% as African American. Thirty-nine percent identified as Catholic, 26.5% as Protestant and 26% with no religious affiliation. The survey was developed from the Health-Related Behavior Questionnaire with additional legal questions. It focused on General Knowledge of Marijuana, Marijuana and the Law, and the Usage of Marijuana. The questionnaire was piloted to a group of college age students and high school teens. After revision, the survey was approved by the university IRB for distribution through SurveyMonkey.com. Permissions to distribute the link were obtained from the school principal and classroom teachers. Informed consent was obtained from each participant.

Analysis/Results: Descriptive statistics and Chi-square analysis was used to determine if questions with correct/incorrect answers were significant beyond expected. Most answered general knowledge questions

correctly. The one question significantly answered incorrectly was regarding the effects on the brain. Seventy-two percent held the opinion that marijuana is somewhat to very beneficial to health. Half had never consumed marijuana but of those that had, 32% first tried between 13-16. Twenty one percent of users smoked it all were aware of the many ways to consume. Twenty five percent of those that have used, smoked at least once per month. Marijuana and the Law was the most difficult section. Participants skipped or answered "I don't know" to more questions than expected. Participants were unaware of the amounts of marijuana that can be in possession at one time and were also unaware of what use is legal in public and in private locations.

Conclusions: The number of smokers in our sample was low possibly due to the high number of female participants. Studies show that men smoke marijuana more than women. Education on the specific physical and psychological effects on the developing brain as well as the legal issues should be implemented

Sociocultural and Social Justice

Rebound the Film and Perceptions of Disability: A Qualitative Study

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Background/Purpose: Abstract concepts are brought to life when using film in the college classroom. Educators have used film to examine students' multicultural awareness, and as an appealing means of teaching about disability (Rorrer & Furr, 2009). Furthermore, film offers an enjoyable pedagogical approach for Millennial students to learn (Donahue & Miller, 2016). The purpose of this study was to explore undergraduate college student perceptions of disability sport and inclusion after viewing a film documentary on wheelchair basketball. The researchers collaborated with producers of the film documentary *The Rebound: A Wheelchair Basketball Story* to explore how viewing the film may shape attitudes toward disability.

Method: Convenience sampling was used to recruit focus group participants from three undergraduate general education lifetime fitness and wellness courses. Students viewed the film as part of a regular class, and those who consented to participate in the study took part in focus groups led by the researcher who was not the instructor of record for the classes. The total sample was 17 students, split among three focus groups,

at a large university in the Mid-Atlantic region of the United States. The average participant age was 19.5 years with a range of 18-22 years. There were eight males and nine females. The constant comparative method was used between the two researchers to analyze the focus group transcripts. The researcher guided the focus groups toward student reactions to the film, attitudes toward disability sport after viewing, and impactful film moments.

Analysis/Results: The thematic analysis revealed five interrelated themes: (a) “we just have to treat them as human beings”: expectations of disability, (b) “it got me so wrapped up in the story of the team and the individuals of the team”: education through storytelling/experiences, (c) “it’s so much more important to focus on what they can do instead of what they can’t do”: showcasing ability and validating disability sport, (d) “it was definitely something much bigger than a game of basketball”: sport as a motivation for life, and (e) “if he can do that, why can’t all of us do that?”: comparisons to self. In short, participants came to understand how the film helped to dispel their previously held stereotypes through the portrayal of real people, their families, and a quest for a national wheelchair basketball championship win.

Conclusions: It is important to examine students’ perceptions of disability and inclusion, and to analyze the impact a disability sport documentary can have on the perceptions of undergraduate college students. Unlike news clips and social media, documentary film prompts viewers to engage and act by building empathy and involving the audience directly. This involvement immerses the audience fully in the situation of others, creating connections and relatedness, and inspiring paradigm shifts. College students are future community activists, business leaders, service professionals, and executive officers who are the change makers of the future. The findings from this study will inform college and university programs on ways to address social inclusion, and sociocultural attitudes and perceptions about disability through documentary film.

Active Science in Low-Income Public Schools: PE Teacher Perceived Barriers, Facilitators, and Benefits

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Background/Purpose: Only 20% of children ages 5-17 in the United States met physical activity (PA)

guidelines in 2017. Increasing PA among youth can lead to multiple physical and cognitive benefits, as well as decreasing the risk for developing future chronic diseases related to sedentary lifestyle. One critical forum for increasing PA is physical education (PE) at schools, and evidence is mounting that PA may act to prime the developing brain for learning. However, an emphasis on standardized testing has led to an emphasis on classroom learning time and a commensurate decline in time available for PE, particularly in low performing schools. Developing PA approaches that also advance academic content acquisition may be useful in addressing this issue. Active Science is a novel program that combines PA with science, technology, engineering and math (STEM) learning, and is currently being employed in multiple settings both inside and outside of schools nationwide. Teacher perceptions of Active Science implementation fidelity, feasibility, and potential outcomes are key to adoption but have not yet been assessed in public school PE classes. The purpose of this research is to understand those PE teachers’ perceptions, and utilize them to improve program adaptation, translation and dissemination.

Method: Five physical educators at four elementary schools from a low-income, primarily Hispanic (76%) public school system were interviewed pre and post-implementation of the Active Science program in their participating 3rd grade PE classes (N=638 students, k=27 class rooms). An adapted version of the Health Belief Model was used as a framework for theme identification and analysis. Interviews were transcribed and coded for common themes, which were used to identify areas in the program that need to be adapted and changed.

Analysis/Results: PE teachers reported that Active Science was both feasible to implement and highly engaging for students, improving both PA motivation and participation in their classes. Necessary administrative support and teacher time allocations were potential barriers for Active Science implementation in PE classes, while school Principal investment, training sessions, and technical support from Active Science program staff were important facilitators of success.

Conclusions: PE teachers perceived Active Science as both beneficial to students and feasible to implement, but also requiring explicit resource prioritization and administrative support. Future efforts to integrate traditional academic topics such as science into in PE classes should be adapted to address potential facilitators of success and barriers to implementation.

Chinese College Students' Understanding of American Fitness and Sport Culture

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Background/Purpose: Although fitness and sport are universal, many Chinese misunderstand American fitness and sport culture due to the lack of interactions between people in the two countries. Since fitness and sport play an important role in American culture, helping Chinese students understand American fitness and sports can help them better understand American culture overall. Therefore, the purpose of this study was to examine if fitness and sport presentations, observations, seminars, and teaching sports such as American football would help enrich Chinese students' perceptions of U.S. fitness and sport culture.

Method: Nine American doctoral students visited six Chinese universities (rural and urban) over three weeks and gave presentations on gender issues in physical education and sports, religion in sports, collegiate athletics administration, football player development, technology in physical education, and collegiate strength and conditioning. The nine American students also team-taught American football to the students at three of the six Chinese universities. After the presentations and teaching sessions, focus group interviews of primarily PE undergraduate and graduate students were conducted in both Chinese and English. Two of the nine American students are fluent in both languages and have been professionally trained in both China and America. A Phenomenological conceptual framework was used to guide the focus groups and interview questions. Interviews were recorded, interpreted, and transcribed.

Analysis/Results: Content analysis was used to generate themes embedded in the interview data. Information on the six university websites concerning the visits of the nine American students were also analyzed to triangulate data collected in the study. Member checking and peer debriefing were used to ensure trustworthiness of data analysis. The following themes emerged from the interview data: (a) Chinese students consistently demonstrated a strong interest in and attachment to the National Basketball Association (NBA); (b) Chinese students also watched other professional American sports (e.g., the National Football League and the National Hockey League); however, they were unfamiliar with American fitness and sport

culture more broadly; (c) Chinese students conflated American fitness and sports with physical education and did not understand the differences between the two; (d) NBA sport stars played a critical role in attracting Chinese students to American sport culture; and (e) Rural Chinese universities were more eager to learn American fitness and sport culture than the urban Chinese universities as they had fewer interactions with Americans in fitness and sport settings.

Conclusions: American fitness and sport are optimal avenues to promote American culture in China due to Chinese students' strong interests in American sport. While internet, TV, movies, and videos have greatly facilitated the dissemination of American fitness- and sport-related information, Chinese students' understanding of American fitness and sport culture is still limited. Further research and cultural exchange are needed to help facilitate more robust discussions of and experiences with American fitness and sport culture.

Dr. Robert "Whirlwind" Johnson: Point, Set, Match

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Background/Purpose:

This purpose of this research was to inform the larger education community of medical doctor, Robert Johnson, and his impact on social justice through his role in the global sport of tennis. The biographical, historical and socio-cultural review of the impact contributed by Dr. Johnson, cannot be over-stated (Smith, 2004). A man of color born during the 19th century in a former slave state, goes to earn his undergraduate degree at Lincoln, in Pennsylvania, becoming a football star nicknamed, "Whirlwind." He medical school at Meharry in Nashville, TN. Returning to his native home of Virginia to practice medicine, Dr. Johnson (also known as "Dr. J"), joins the ATA. This is the Black national tennis association in the USA, created in 1916-17, while segregation was the law of the United States. So few globally know he creates the ATA Junior Development Program (for African American youths). He built a grass court in his backyard creating a minority tennis camp.

Method: An exhaustive archival related literature review was conducted along with personal analysis from contact among, special collection librarians, sport historians, nationwide tennis legends among the ATA, and his family. An interrater reliability was

performed (among three coders, all with advanced degrees), to ensure historical facts for accuracy. Finally, the researcher utilized multiple data collection sources to enhance validity and reliability of this examination thus (Pitney & Parker, 2009) creating a data source triangulation.

Analysis/Results: This historical and archival investigation provided the discovery of Dr. Johnson as the most impactful person in the development of minority youth tennis. His success was magnified by identification of talent in Althea Gibson, and sending her to Florida A&M University. Mentoring her as the first person of color to win a Grand Slam tennis title was earth shattering in the 1950s. Years later through the ATA Junior Development Program, the Richmond, VA native, Arthur Ashe came through Dr. Johnson's tennis camp and tutelage. Groomed properly for the sport, time and era, his gentleman ship was his most obvious attribute.

Conclusions: The total involvement of Dr. Johnson in the creation and enhancement of minority youth developing into quality and elite tennis competitors, was the foundation. Turning one's home into a full time tennis camp is another. It is the blossoming of many players, but specifically the one man and woman to earn Gram Slam titles, which propelled Dr. Johnson in the International Tennis Hall of Fame. Located in Rhode Island, Dr. Johnson became only the third man of color (after Ashe, and Yannick Noah of France), to be inducted. More specifically, as a contributor to the sport, his global acknowledgement by HOF induction, as the only man of color (not as a player), to be so honored, thus far. There have been a few books, and popular press articles on "Dr. J" yet many across this nation have no idea of him nor his impact.

Examining Pathways to Physically Active Occupational Choices

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Background/Purpose: The purpose of this study was to learn about attitudes, behaviors, and physical education memories of persons currently employed in physically demanding jobs. Health benefits of physical activity (PA) are well documented (e.g., Blair & Morris, 2009). The Centers for Disease Control and Prevention (USDHHS, 2008) indicates both leisure and occupational PA contribute to reaching PA recommendations for these benefits. The Human Movement Framework

(Pettee-Gabriel, & Morrow, 2010) guided this study and provides insight into the complexity of factors contributing to PA engagement. Previous research on occupational PA focuses on activity accumulation (e.g., Steele et al., 2003) while neglecting potential contributing factors leading to seeking out such occupations. The Human Movement Framework helps bring both areas into focus while dissecting participation in PA.

A study examining college students' PA and their attitudes of past physical education experiences revealed a potential misalignment between the intention of physical education (inspiring lifelong PA) and actual PA participation post graduation (Kimball et al., 2009). Results led to an author interest in both the long-term impact of physical education participation and facilitators to adult participation in both leisure and occupational PA. A gap exists in the body of research regarding inquiry into these relationships. Viewing adult occupation as an extension of college-age activities, the present study was modeled on Kimball's work.

Method: An electronic questionnaire was developed looking at occupational PA, leisure-time PA, and physical education attitudes. Job-related PA questions included reporting job type, activity level (subjective), and if they chose the job because of the activity demands. The Standford 7-day Recall (Blair et al., 1985) is a previously validated tool (Richardson et al., 2001) for reporting habitual physical activity. Previous physical education experiences and current attitudes about those interactions were drawn from Kimball et al. (2009). Additionally, a single, open-ended question gave respondents the opportunity to provide any additional thoughts or comments related to exercise, physical education, or physically active occupations. Surveys were shared through workplaces with occupational PA.

Analysis/Results: Results ($n=41$) reveal interesting trends. Responses per question range from 35 to 41. Responses indicate 95% considered their job to be *moderately* or *very* physically demanding, and $\frac{2}{3}$ ($n=26$) reflected the physical nature of the job attracted them to it. Most reported enjoying PA (92%) and 72% noted favorable physical education memories (feeling comfortable performing activities in front of peers). Conversely, only half (47%) noted feeling their high school physical education teacher treated all students equally regardless of their skill or ability level.

Conclusions: One poignant, open-ended response included "while throwing and catching are fun, there should have also been functional training (lifting, carrying, etc.). When you tie these skills to body development it would better prepare students for physically active careers, and better tie physical fitness to healthy

bodies...". For physical education teacher preparation, these findings may impact the inclusion of occupation in discussions of future PA potential with high school students.

Implementation of an After-School Literacy and Physical Education Program for Urban Youth: Challenges and Lessons Learned

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Background/Purpose: The REACH (Reflective Educational Approach to Character and Health) after-school program aims to provide a safe place for youth in grades 4-8, who live in low-income communities in urban environments, to participate in a variety of sports in an after-school setting. REACH programming takes place weekly in partnership with schools. Basketball is used as a hook to work on character development using guided reflections and words of the week, and literacy skills by having program participants reading subject-specific work. This paper sought to uncover challenges that arose in implementing this program in a low-income neighborhood in New York City.

Method: During the 2014- 2015 academic year, the researchers conducted a year-long study of the after-school program. The program consisted of the implementation of the REACH after-school curriculum at a public K-8 school in Harlem, NY. Sessions ran weekly for 2.5 hours following the regular school day. At the conclusion of the program, six key stakeholders in the REACH program were interviewed including, (a) the lead coach; (b) an intern working with the program and acting as an academic tutor; (c) a director of the REACH organization; (d) two after-school teachers/leaders who worked for Children's Aid Society and saw the kids every other day when REACH was not in session; and (e) the assistant principal who was in charge of the after-school programming at P.S. 780 (pseudonym). The researchers employed a qualitative case study approach. This project was preceded by a full-year pilot study in a nearby public school.

Analysis/Results: Two researchers coded the data separately and a third researcher acted as a peer reviewer. Data were coded using the constant comparative method using open and axial coding. Several data sources were used to triangulate data. Sources included: semi-structured student interviews, observations in

sessions, class visits with other after-school teachers, an interview with the assistant principal, and interviews with supporting personnel.

Three themes emerged from the data analysis. The first, "environment" centers around the school and community environment that students had to navigate on a daily basis. The second theme, "community involvement" discusses some barriers students had to consistent participation in the REACH program. The third theme, "role modeling," revolves around the coach, Ray, who was a strong positive role model and intertwines the role models the students look up to in their community and in professional sports.

Conclusions: These three themes are analyzed through a lens of culturally responsive pedagogy (Ladson-Billings, 1995) and a new theory of Positive Youth Development in sport-based programs presented by Holt et al., (2017). These data present a detailed analysis of the implementation of a sport-based after-school program in an urban environment. The paper presents the challenges faced in the implementation of such programs as well as lessons learned that hopefully will be able to guide future design and implementation of programs that work with urban youth in after-school settings.

Influence of Physical Fitness on Health-Related Absence in Preschool Children

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Background/Purpose: Available research indicated that physical fitness could positively impact children's health (Justin, Bruijn, & Julien, 2018). Extensive studies of health-related fitness disclosed positive impact on children in China, limited studies tended to investigate the association between physical fitness and school absence. The purpose of this study was to investigate the association between physical fitness and health-related absence in preschool children in China. The study assumed that physical fitness was significantly associated with the rate of school absence only due to sickness or injury.

Method: A sample of 305 preschoolers (boys=148, girls=157) participated in this study in Eastern China. They were grouped into three categories based on age

which classified as young, middle, and old classes (N=104, 94, 107, respectively). The physical fitness tests were conducted by researchers and physical educators collaboratively, including 10 meters shuttle run, double foot jump, sit & reach, height & weight, tennis throwing, balance beam. All tests followed China National Physical Fitness Assessment Standards which was published in April 2018. The preschoolers' health-related absence between September 2016 and January 2018 were obtained through school clinics (except summer and winter vacation, total 13 months). The data were analyzed using descriptive statistics for demographic information, general linear and logistic regressions for relationships, independent T-test, non-parametric test, and ANOVA for comparisons.

Analysis/Results: Sick days and rates of health-related absence were decreased when age increasing, with 8.89 days (3.08%), 5.28 days (1.83%), and 2.22 days (0.81%) in the young, middle, and old grades, respectively. The comparison among three categories indicated significant differences ($p < 0.01$). All scores of physical fitness tests showed the similar trends ($Scores_{young} = 66.17$; $Scores_{middle} = 70.15$; $Scores_{old} = 70.41$). The general linear regression analysis revealed significant associations between the yearly absent rates and score of 10 meters shuttle run as well as double foot jump ($R^2 = 11.3$, $p < 0.01$). Analysis of binary logistic regression indicated that the score of 10 meters shuttle run significantly influenced absent rates ($\beta = 0.795$, $exp = 2.214$, $p < 0.01$), which also informed that the odds of preschoolers with lower scores in 10 meters shuttle run, being at the risk of increasingly two percentages and above absent rates, were 2.2 times more likely than for preschoolers with higher test scores in 10 meters shuttle run. Nonparametric Mann-Whitney test found significant differences in the sick days during 13 months across fitness scores ($p = 0.035$). In other words, the sick days significantly increased when fitness scores decreasing.

Conclusions: The study suggested that physical fitness level, especially the scores in 10 meters shuttle run and double foot jump could have significant impact on sickness-or-injury-only absence in preschool age. Besides addressing how fitness score impacts Chinese students' academic performance (Li & Ji, 2016), preschool administrators and stakeholders may want to consider how proper instruction within 10 meters shuttle run and double foot jump influence preschoolers' motivation when participate in such fitness activity. In addition, it begs the question of how these two physical fitness tests address the developmental appropriateness in preschooler population within China.

It's Not About the Hair: Swimming Avoidance Among Minority Youth

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Background/Purpose: Nearly 70% of African American youth in the United States have "low or no swim ability" (Irwin et. al, 2009). This low swimming participation has been explained with reasons ranging from fear of drowning (Irwin, et. al, 2011), socioeconomic factors, concerns about hair (Irwin et. al, 2010), facility access (Golob et. al, 2013), and social exclusivity (Hastings et. al, 2006). The purpose of this study was to evaluate factors related to swimming avoidance for urban minority high school students unaffiliated with swimming programs or facilities.

Method: After IRB approvals and parental consent, adolescent participants ($n = 214$) in physical education and health classes at two high schools in neighboring urban districts completed a survey soliciting demographic and swimming participation information. Of the participants (55% female; 87% African American, 8% multi-racial, 5% Caucasian), 52.8% identified as a "swimmer" and 47.2% as "nonswimmer." In select classes, students were separated based on their swimming ability, and interviewed in focus groups of 2-3 ($n = 140$). Semi-structured interview guides followed the basic thematic domains of the survey instrument.

Analysis/Results: Interviews were manually transcribed and analyzed inductively to examine common themes related to swimming participation. Additionally, descriptive statistics and frequencies were run on survey questions to serve as a source of data triangulation. Preliminary content analysis revealed three predominant themes, including: a) low social significance (not a "cool" sport for African Americans - 54.5% suggested that swimming was a Caucasian sport), b) generations of nonswimmers (parents and grandparents don't swim, thus never teaching children) and c) perceived limited facility access (students lacked knowledge on where they could swim). One additional theme was evident- the wide-ranging definition of 'swimming', especially among adolescent males. This is related to avoidance because many considered wading or playing in shallow water "swimming," but in actuality avoided deep water requiring competency.

Conclusions: Initial analysis suggested that 52.7% of youth were swimmers, an improvement from previous

reports. However, only 25.7% reported actually being able to swim for “an extended period of time,” or “competitively.” This may suggest that these - mostly male - students are especially susceptible to drowning given their perceived ability but limited skills, consistent with Gilchrist & Parker’s (2014) findings that at ages 11–12 “blacks drown in swimming pools at 10 times the rate of whites.”

Similar to Irwin et al. (2010), our quantitative analysis concluded that facility access was not a significant predictor of swimming ability. However, qualitative interviews contradicted this. Very few students could articulate where they could swim, and many cited facilities outside the city, up to 25 miles away.

The most consistent theme suggested that swimming lacked social significance. Students suggested swimming wasn’t “cool” compared to socially desirable football and basketball. Additionally, students described generations of swimming avoidance in their families, consistent with Wiltse’s (2014) historically informed answer to the disparity in swimming. A freshman aptly articulated this: “If people’s parents don’t know how to swim...then they aren’t going to think it’s important for you to know how to swim either. So now, we learning, but we’re so far behind other races.”

John McLendon: More Than a Physical Educator and Coach

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Background/Purpose: This sociocultural and historical presentation highlights the civil rights advocacy and physical activity/sport contributions of the individual known as the “Father of Black Basketball” (Klores, 2008). Although a talented basketball player desirous of playing collegiately at the University of Kansas (KU), John McLendon was denied the opportunity due to early 20th century American apartheid. Undeterred, this physical education student sought mentorship from the inventor of basketball, Dr. James Naismith. This collegial relationship lasted a lifetime. McLendon’s sport philosophy was interwoven within his social conscience. He was a staunch advocate for social justice and integration in society-at-large and sport in particular (Katz, 2007). “Johnny Mac,” believed that mutual understanding and racial differences could be mediated through integrated sport competition. His advocacy for

social justice on and off the basketball court throughout the 20th century validated his convictions.

Method: An extensive archival literature review and analysis of McLendon’s career via published periodicals, books, and journal articles, as well as casual conversations with knowledgeable informants (e.g., archivists, retired coaches, friends, and sportswriters) provided the requisite data. Additionally, visits to Tennessee State University (formerly Tennessee A&I) where McLendon won three consecutive NAIA Championships, and Cleveland State University where he became the first African American Division I basketball coach helped frame the study. Lastly, the use of multiple data collection sources to the point of saturation enhanced both reliability and validity, thereby serving as a form of “data source triangulation” (Pitney & Parker, 2009).

Analysis/Results: This study revealed that John McLendon was arguably American basketball’s greatest social integrationist. Without question he was one of the most influential individuals in the development of contemporary basketball. His stand against racial discrimination as a physical education student at the KU led to a boycott of the university’s swimming pool and practice teaching policies. Notwithstanding, McLendon became the first African American to receive a physical education degree from KU. Professionally he led similar crusades to integrate collegiate basketball and facilities (e.g., hotels, movie theatres, restaurants, etc.) within the cities that hosted national tournaments. McLendon’s involvement in American basketball was far reaching at every level.

Conclusions: John McLendon was destined for greatness due to his zeal for education, passion for competitive sport, and willingness to challenge an unjust system. Few individuals have impacted basketball as McLendon, who was inducted into several halls of fame including the Naismith Memorial Basketball Hall of Fame as a contributor (1979), and most recently a basketball coach (2016). His not so “secret game” against Duke University Medical School in 1944 led to the integration of collegiate basketball in North Carolina. Equally impressive was his coaching acumen, which emanated from his mentor and honed at small Black Colleges (HBCUs) in the south. His three consecutive NAIA Basketball Championships (1957-1959) is unparalleled and may have been the seminal point of his career. This marked the first time a HBCU team had ever won a championship against a white team. His legacy as an educator, coach, administrator, and social advocate is laudable and worthy of emulating.

Listening to the Voices of Black and Latina/o Youth in Out-of-school Sites

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Background/Purpose: Young people learn about physical activity (PA), health, fitness, and the body from a variety of sites outside of school physical education (PE) (Sandford & Rich, 2006). Some of these sites include print media (Oliver, 2001), after-school physical activity clubs (Garn et al., 2014), fitness centers (Laverty & Wright, 2010), and social media (Goodyear, Armour, & Wood, 2018). Yet, as young people learn from multiple sites, little is known about their meaning-making processes around PA, health, fitness, and the body in out-of-school contexts. Therefore, it is important to explore and listen to young people, particularly Black and Latino/a youth whose voices are often marginalized (Paris, 2012). The purpose of this study was to explore the meaning-making processes of Black and Latino/a youth in PA, health, and fitness outside of school.

Method: To explore young people's meaning-making processes around PA, health, and fitness, an 18-month visual ethnography (Pink, 2013) was employed in a community-based after-school program with 10 Black and Latino/a youth (aged 14-18) in a large urban area. Data were collected using visual and non-visual methods, through participant observation, semi-structured interviews, and visual diaries (Creswell, 2013; Pink, 2013). Data were analyzed through inductive coding (Emerson et al., 2011) and thematically (Saldana, 2015) based on participants thoughts and feelings around PA, health, and fitness outside of school. This resulted in the following two themes.

Analysis/Results: "Being skinny doesn't mean being in shape" – While young people connected PA, health, and fitness to physical appearance, they were also aware of the multiple, complex, and contradictory meanings that surround an idealized body shape. In talking about print and online media, young people were aware of notions of consumerism, noting that magazines in particular seem to be driven by advertisements. They were critical of messages from these sites outside of school, as demonstrated by one participant who said, "being skinny doesn't mean being in shape." Even though these young people were critical, they simultaneously expressed sadness, frustration and anger when constantly being faced with "one-sided" images in the media.

"They need to fill a certain mold" – On the one hand, young people were able to be critical of images

of thin, slender woman and muscular men, that were dominant in the out-of-school sites. On the other hand, they did not know what to do about the overwhelming negative, even "white-washed" messages they received around PA, health, fitness, and the body. In talking about how to move forward, one participant said, "it probably needs to be done generationally."

Conclusions: The Black and Latino/a participants demonstrated they learn a great deal about PA, health, fitness, and the body from sites outside of formal school settings. There are, however, concerns as the messages they receive continue to be negative and culturally limiting. Giving them a space to discuss this gave these youth an opportunity to be critical and think about how to create possibilities for change in the future.

Perception of Gambling Among African American College Student Athletes

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Background/Purpose: Gambling is an emerging high-risk behavior that has sounded the alarm bell on campuses nationwide (Stuhldreher & Forrest, 2007). Gambling is considered problem gambling if a person experiences negative consequences, such as feelings of guilt, inability to control gambling, and time lost from school/work (Stuhldreher & Forrest, 2007). Gambling is a very prevalent legalized activity that can be considered a nondrug related behavior with addictive potential (Thrasher, Andrew, & Mahony, 2007). However, few studies have examined gambling among African American college student athletes. Therefore, the purpose of the study the perception of gambling among African American college student athletes.

Method: A convenient sample of college students from classes at a small southeastern private historically black college and university was utilized in the study. Knowledge and data of gambling among African American College Student Athletes was measured using a Modified version of the south oaks gambling screen survey (Guedes and Souza, 2015). The responses on the questionnaire ranged from Yes, No, Check how many apply, Not at all, Less than once a week, and once a week.

Analysis/Results: Chi square analysis and analysis of variance were utilized to determine the difference between demographic categories and the Perception of gambling among African American college student

athletes questions. Forty four students (89.80%) reported some of the time to Question #8 “When you gamble, how often you go back another day to win back money you lost?” Forty three students (87.75%) reported Father/Mother to Question #7 “which of the following people in your life have (or had) a gambling”. Forty two students (85.71%) reported Yes, less than half the time I lost to Question # 9 “Have you ever claimed to be winning money gambling but weren’t really? In fact, you lost”. Chi square analysis revealed that Males had more yes responses compared to females ($X^2 = 23.72$, $p = .00$). Chi square analysis also revealed that males had more “Less than once a week” responses compared to females. ($X^2 = 14.21$, $p = .00$).

Conclusions: More studies are needed among historically black colleges and universities. Recommendations are made to further educate African American college students Athletes in improving their knowledge toward gambling.

Sportsmanship as It Relates to Refugee Youth Sports Participants

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Background/Purpose: Sports are often viewed as a “universal language” as sports are performed in similar ways all around the world, thus providing a bridge for cultural differences (Annan, 2004). Since sports can be used as a vehicle for individuals to gain a sense of belonging (Kelley, 2011), sport organizations are interested in educating youth to their country’s culture (Giullianotti, 2010).

In the United States, when youth begin their athletic journey, they usually begin to participate at the municipal/city level in order for them to learn the norms and values within American sporting culture (Coakley, 2017). Youth sport programs in the USA have tended to overlook the importance of sportsmanship at this level and instead focused on winning (Wells, Ellis, Paisley & Arthur-Banning, 2005), though sportsmanship and participation is often enforced in most sports for children under 10 years old. Sportsmanship has been described by Arnold (1984) as having three components: 1) sportsmanship as a means of social union, 2) sportsmanship as a means in the promotion of pleasure, and 3) as a form respect for others. The purpose of this study is to see how refugees are treated within their sports programs as it relates to Arnold’s (1984) approaches to sportsmanship. For this study we

focus on the first approach. This view states, if sports are to be preserved and flourish, a great amount of success is dependent upon those participating in the sport acting fairly and respectable toward all other participants, whether that be opposing players, referees or coaches.

Method: This study employed a phenomenological approach (van Mannen, 1997, 2007), employing a case study perspective. Researchers inquired about the lived experiences of refugees from Syria and Jordan and the ways in which these athletes were treated in their new society in Texas. Through semi-structured interviews (Jeans, O’Connor, & Alfrey, 2015), we inquired about the structure and culture of youth sports in subjects’ home country, as well as their experience participating in youth sport programs in America. The interviews were transcribed verbatim and then uploaded to Nvivo for content analysis.

Analysis/Results: Preliminary findings indicates refugees between the ages of 14-18 have seen a growing amount of acceptance and have been treated in ways that align with Arnold’s approaches to sportsmanship, i.e. social acceptance and fair treatment by players, coaches and referees. Similarly, we found that due to their feeling of acceptance, these youth athletes plan on continuing to participate in sports.

Conclusions: This case study provides support for benefits of participating in youth sport programs, by showcasing the benefits of participating in sports for refugee children. Since these athletes did not feel as though they were separate from their peers in school and in fact felt accepted through their participation in sports. We preliminarily conclude that through their participation in youth sport programs, refugees can in fact increase their acceptance within the community and are given the same treatment on the playing fields as all other youth athletes.

The Effects of FitnessGram® on LGBTQ Students

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Background/Purpose: The Cooper Institute estimates that FitnessGram® is implemented in over 65,000 schools in the United States alone (Cooper Institute, 2014). Furthermore, FitnessGram® data has been used in over 300 publications between 2010-2015 worldwide (Gard & Pluim, 2017). It is therefore fair to claim FitnessGram® has become a normative practice in

physical education pedagogy and research. Recent (Fitzpatrick & McGlashan, 2016; Landi, 2018a, 2018b) and previous research (Clarke, 1998, 2004; Sykes, 2011), however, has illustrated that normative physical education environments produce unfavorable conditions for gender and sexuality diverse students (LGBTQ). Therefore, the purpose of this paper was to examine how the implementation of FitnessGram® ‘affected’ (Deleuze & Guattari, 1987) LGBTQ students.

Method: Data were generated during a critical ethnography (Thomas, 1993) that investigated the experiences of 60 LGBTQ youth (aged 13-25) in health, physical activity, and education settings within New Zealand. The ethnography lasted five months and used individual semi-structured interviews (Creswell, 2012), group interviews (Fontana & Frey, 2005), observations (Marshall & Rossman, 2011), and artifact collection (Pink, 2015). Data were analyzed using new materialist techniques: (a) dredging (Fox & Alldred, 2017) and (b) mapping (Ringrose & Coleman, 2013). Trustworthiness was established via crystallization (Ellingson, 2009).

Analysis/Results: *Limiting Affects.* The overwhelming number of LGBTQ students did not enjoy physical education. One of the main reasons for disliking physical education was the PACER test. Students described physical education as a disciplined environment meant to ‘wear down’ the body. In other words, physical education did not promote creativity or enjoyment through movement, but rather the body was continually marked in deficit terms to be ‘improved upon’. The PACER test exemplified the banality of physical education par excellence. With every beep, students felt they were being told where, at what times, and how to use their bodies. Students reported considerable stress and verbal harassment during FitnessGram® testing. *PACER Resistance.* The implementation of the PACER test also produced opportunities to resist normative practices. While students were expected to meet specified performance standards, they were concomitantly critical of fitness testing. Instead of conforming to the PACER test, students colluded using verbal and physical communication to prematurely ‘drop out’ of testing. They did this by scheming with allies within the class in order to escape the verbal harassment that comes with finishing early. By prematurely exiting the test, students produced false data points that were sent to the Cooper Institute. As more students collectively revolted against the test, practices in physical education were forced to adapt.

Conclusions: The authors’ argue the use of FitnessGram® in physical education produced a stressful environment for LGBTQ students and this negatively affected their

perceptions of physical education, health, and their bodies. On the other hand, the implementation of FitnessGram® produced material conditions for students to band together and revolt against normative physical education practices. We conclude by claiming that students may have been victims of normative practices, but they used it as an opportunity to change the physical education program.

Trash Talk as a Social/Moral Construct of Sport

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Background/Purpose: Sportsmanship rules were developed to prevent uncertain ethical conduct and to control intimidation and gamesmanship. Trash talk, an intentional behavior that negatively influences the purity of sport, establishes dominance while psyching the opponent out. Trash talking is the use of insulting or boastful verbal and/or physical communication intended to demoralize the opponent. The purpose of this study was to examine: 1) how and why athletes administer and receive trash talk and 2) the social community relative to trash talk as a potential positive benefit to the moral community, which is sport.

Method: Convenience sampling was used with participants (male=295; female=203) representing current and former high school, college, and professional athletes who have at least one year of first-hand experience in competitive high school sport. All athletes were evaluated with the “Trash Talk Inventory” (TTI), developed based on previous research and experience. The TTI consists of 21 statements with a 5 point Likert scale. The TCI measures the positive benefits of trash talking in motivating self, peers, and opponents to a higher level of competition.

Analysis/Results: The TCI’s Face, logical, and construct validity were assessed. The instrument was piloted with students from 4 different universities from the west to the southeast. Factor analysis revealed one component and Cronbach alphas ranged from .72-.76. A 2 X gender (male/female) Sport (basketball, baseball, football, track & field/cc, tennis, volleyball) analysis using ANOVA procedures in SPSS version 21 was used. Where appropriate post hoc analysis was conducted using LSD procedures. A significant difference was found by sport $F(7,482) = 3.127$, $p = .003$, partial $\eta^2 = .04$. No significant difference was found by gender ($p=.372$). Volleyball ($p=.002$), basketball ($p=$

.001) and football (.0001) held significantly higher views about trash talking as personal motivation compared to all other sport participants.

Conclusions: It appears that the team sports of volleyball, basketball, and football are the ultimate “huddle sports” where constant social interaction uses trash talk to motivate. The other sports do not have this constant social interaction. This social interaction may explain the positive benefits of how these team athletes use trash talking to motivate self, others, and opponents. Further research is needed on the positive benefits of trash talking as motivation with a conversation needed in administrative circles about the positive benefits of trash talking.

Utilizing Adapted Sport Documentary as Pedagogical Methodology: Exploring Student Experiences

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Background/Purpose: Using film in the college classroom employs a blend of visual and audible learning opportunities for the student that brings abstract concepts to life. As a pedagogical methodology, film can have a “profound impact” on perceptions of disability (Schwartz et al., 2010). Students have recognized changes in their own perceptions from viewing films on disability because the portrayal of real people engaging in daily living activities dispels stereotypes (Schwartz et al., 2010). Interventions that have used films as well as discussions and written activities have been particularly successful at improving knowledge, perceptions, and acceptance of disability (Lindsay & Edwards, 2013). Thus, the purpose of this study was to explore the impact of a documentary film through writing to engage reflection questions, including the screening experience, student feelings, and student perceptions of disability and disability sport.

Method: Participants were 204 undergraduate students enrolled in a general education lifetime fitness and wellness course ($M_{age}=19.89$; 55.4% female, 81.8% Caucasian) at a university in a Mid-Atlantic state. Participants viewed the film during a typical class meeting and were asked to complete a nine-item questionnaire at the film’s conclusion. The questionnaire included six demographic questions and three long-format writing to engage questions which were intended to elicit the participants’ feelings about the viewing experience. After data collection was

completed, data were compiled into a spreadsheet, and the first and second authors independently open-coded the long-format questions. First, the coders assigned a code (i.e., short name) to each response. Responses which spanned several content areas were provided more than one code. Following, codes were reassembled and grouped into broader categories.

Analysis/Results: First, demographic variables were summarized descriptively. Secondly, descriptive statistics (e.g., frequency counts) for responses to each of the three long-format questions were compiled. In total, participants’ responses were coded into 332, 258, and 240 codes for the three long-format questions. The most commonly coded responses to the first question (i.e., Can you describe your experience watching the documentary) were coded as inspirational ($n=80$), gaining new knowledge ($n=29$) and emotional ($n=25$). Similarly, inspirational ($n=56$) and gaining new knowledge ($n=27$) were the two most commonly used codes for the second question (i.e., Can you describe how you *feel* about your experience?). For the final question (i.e., How does watching the film shape your attitudes or actions toward inclusion, adaptive athletes, and disability sport?), the most common response codes were disabled people are able ($n=32$), new knowledge ($n=32$), inclusion is important ($n=26$), and equality ($n=18$).

Conclusions: Documentary film offers an avenue for enlightenment toward disability and inclusion. Writing to engage helps students develop greater control of the concepts, skills, processes, and issues addressed, and deepens the learning from the documentary film experience. Future research should extend the use of the documentary film as a teaching and learning tool, to gain a comprehensive understanding of its impact. This includes replicating the research with focus group interviews, utilizing quantitative pre/post surveys, and extending the writing to engage reflection prompts for enhanced critical thinking, analysis, and evaluation.

Sport and Coaching

Crucial Hours: Pedagogy Training for Graduate Teaching Assistants

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Background/Purpose: Graduate teaching assistant (GTA) has increasingly become a misnomer regarding

physical activity courses, in which GTAs routinely serve as lead instructors. Yet many GTAs receive negligible pedagogical training and feel unprepared to teach. Conversely, physical education teacher education programs grounded in constructivist principles provide a strong nurturing environment for teaching candidates. The purpose of this study was to determine the extent to which a constructivist-oriented GTA training program impacted GTAs' ability to align student learning objectives, learning cues, and teacher-provided feedback in planning and teaching in physical activity courses.

Method: In this study a constructivist-oriented training/mentoring program was created and implemented, fostering university GTAs' ability to align student learning objectives (SLOs), learning cues, and teacher-provided feedback in the planning and execution of their lessons. Eleven GTAs new to a university physical activity instruction program participated in a presemester three-hour constructivist-oriented training session followed by three observational mentoring sessions throughout the semester. Near the conclusion of the semester, each GTA, two of their undergraduate students, and the director of the activity program sat for semi-structured interviews regarding the impact of the training/mentoring intervention. Interview transcripts, field notes, formal observations, lesson plans and written training exercises were analyzed using constant comparison.

Analysis/Results: The training/mentoring intervention enhanced most GTAs' ability to align SLOs, learning cues, and feedback in the execution of their lessons, but had little effect on their written lesson preparation in those areas. Undergraduate students reported experiencing alignment and cohesion in most GTA lessons. The GTAs felt less isolated, less anxious, and better equipped to teach after mentoring sessions.

Conclusions: The findings suggest that novice teachers may quickly accept the ideas that can be implemented in teaching and, yet, overlook the necessity to plan effectively using the knowledge delivered in both group sessions and individual mentoring. The findings of the current study showed that GTA training for physical activity instructors can greatly improve instructional effectiveness. A handful of hours (3, in a group training, and approximately 5 more in one-on-one mentoring/observation) can have a substantial effect on the teaching efficacy of graduate teaching assistants, and, in turn, on the learning experiences of their undergraduate students.

A Two-Year Evaluation of PE/PA Professional Development Workshops

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Background/Purpose: A thorough review of literature indicates four key characteristics of quality PD: (a) it provides opportunities for active engagement, (b) is facilitated with care, (c) fosters communities of continued learning, and (d) focuses on improving student learning outcomes. Guided by Guskey's (2000, 2003) framework for evaluating PD, the purpose of this study was to utilize the four quality PD characteristics to evaluate the effectiveness of one-day PD workshops on improving teacher participants' knowledge, practices, and dispositions pertaining to workshop topics.

Method: A comprehensive mixed-methods evaluation of eight PD workshops was conducted over a two-year time period (2016-2018). Workshops were coordinated by a statewide PD provider, delivered by experienced facilitators, and emphasized two different topic areas: physical activity integration throughout the school day ($n = 4$) and social/emotional learning in physical education ($n = 4$). The evaluation consisted of prepost workshop surveys, end of workshop surveys, researcher observations, participant interviews, and artifact collection. Prepost surveys were collected electronically from 35-51 participants four weeks prior and after each workshop. The surveys included measures of self-reported knowledge (5-6 items), objectively measured knowledge (10-14 quiz items), utilization of implementation strategies (4-5 items), perceived barriers to implementation (5 items), the presence of a professional community of practice (5 items), teacher efficacy (3 items), job satisfaction (3 items), and work engagement (9 items, 3 subscales). End of workshop surveys were collected from 261 participants (76% female, 86% Caucasian, 53% PE teachers) and consisted of 10 participant satisfaction items, three trainer effectiveness items, and three open-ended feedback prompts. All survey items, except for the objectively measured knowledge items, were completed on a 7-point Likert scale. Two researchers formally observed each workshop from start to finish and recorded field notes and digital images reflecting the quality PD characteristics. Lastly, follow-up interviews with nine participants were conducted 6-8 weeks after the workshops and participants were asked to share artifacts evidencing workshop strategy implementation.

Analysis/Results: Paired-samples t-tests and repeated-measures MANOVA revealed statistically significant ($p < .05$) improvements in four of the eight outcome variables, including self-reported knowledge, utilization of implementation strategies, professional communities of practice, and teacher efficacy. Participants reported high levels of satisfaction with the workshops ($M = 6.6/7$, $SD = 0.4$) and provided extremely high trainer effectiveness scores ($M = 6.9/7$, $SD = 0.3$). Inductively (open-ended feedback, interviews) and deductively (field notes, artifacts) analyzed qualitative data corroborated these results and themes aligned with the key characteristics of quality PD described above.

Conclusions: This study substantiates existing research that one-day workshops can improve teachers' knowledge and confidence, but have limited impact on teacher practices and student learning (Darling-Hammond et al., 2017). Although self-reported utilization of implementation strategies improved, mean values remained neutral and follow-up interviews did not provide substantial evidence of teacher implementation or student impact. Findings suggest that the workshops were enjoyable for teachers and aligned with the four characteristics of quality PD, to varying extents. PD providers should continue to consider workshop content, delivery, and follow-up to ensure alignment with known characteristics of quality PD.

Afterschool Sport Participation and Academic Achievement of African American High School Students

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Background/Purpose: Physical activity programs for youth have been offered variously in and outside the school, but only 18.4% of U.S. high school students reported being physically active at least 60 minutes per day (CDC, 2010). Schools provide physical education classes, recess, and other physical activity programs but are decreased or eliminated. Previous studies have found that youth sport program participations are associated with greater academic performance (Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2010). However, it remains unclear how students balance their academic achievement and sport program participation. Furthermore, researchers extended this study by comparing afterschool sport program participation/nonparticipation and GPA of high school students. Additionally, this study was

investigated to determine how difficult for participants to balance afterschool sport program participation and academic achievement among high school students.

Method: A convenience sample was utilized from a high school in the southern United States. A total of 208 participants were recruited but 198 (Males: 101 & Females: 97) of the surveys were usable for the analysis of this research. Participants were asked to complete the participation of afterschool sport program and demographics. The GPA and balance of academic achievement and afterschool sport participation were composed on a five-point Likert scale.

Analysis/Results: Among high school students, 74.7% of them participated in afterschool sport programs. More specifically, 24% of nonparticipants were GPA between 3.6 and 4.0, while only 9.5% were this range among afterschool sport participants. Nonparticipants' GPA was likely to distribute evenly, while participants' GPA was centralized between 2.6 to 3.5. In addition, there was statically difference on GPA between afterschool sport program participants and nonparticipants ($X^2=15.563$, $p=.004$). 60% of afterschool sport program participants felt that it was slightly or not at all difficult to balance their sport participation and academic achievement. Furthermore, the results revealed statistically significant differences between GPA and the balance of academic achievement and afterschool sport participation among high school students ($X^2=56.287$, $p=.000$).

Conclusions: The findings from this research suggest that afterschool sport program participation of high school students can be affected on their academic achievement. The findings of this study might be beneficial that teachers or coaches can recognize the gap between the perspective of academic achievement and participation of afterschool sport program among high school students. Furthermore, it may be helpful for teachers and coaches to develop the appropriated curriculum that students would be able to provide the positive association between academic achievement and afterschool sport participation.

An Examination of Emotions Experienced by First-Year Graduate Teaching Assistants

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Background/Purpose: Graduate teaching assistants (GTA) add value to their institutions by serving as

lead instructors, supporting research, and completing administrative duties. This time served as a GTA has been associated with both positive and negative feelings (Boman, 2013; Meanwell & Kleiner, 2014; Russell, 2009; Schweighardt, 2017; Young & Bippus, 2008). Despite university efforts to train GTAs, many associate their experience with negative feelings, such as a lack of preparedness (Russell, 2009) and frustration (Meanwell & Kleiner, 2015). On the positive side, as a result from their training, GTAs experience improved confidence (Meanwell & Kleiner, 2015), lower levels of anxiety (Boman, 2013; Schweighardt, 2017), and improved teaching effectiveness (Boman, 2013). The purpose of the present study was to examine the emotions experienced by GTAs in a Physical Activity and Wellness Program (PAWP) during their first semester. **Method:** The four participants (2 male; 2 female) were all new GTAs at a major university in the southeast region of the United States. Data collection included reflective journals, focus group interviews, and individual interviews. Reflective journal entries were completed at five time points: during the summer, after orientation, after the first week of classes, at midterm, and at the end of the semester. GTAs responded to the prompt, "What were your thoughts about being a GTA (time point)?" Focus group and individual interview questions were directed by journal responses and were conducted at three time points: early in the semester, at midterm, and at the end of the semester.

Analysis/Results: Focus group and individual interview data were transcribed verbatim and included in analyses with journal entries. Borrowing from the method and analysis used by Meanwell and Kleiner (2014) with GTAs in the field of sociology, we used content analysis to examine the data. Specifically, we were looking for the use of emotion words (e.g. confidence, nervous, etc.). We then categorized the emotions as positive or negative and compared their incidences. Many emotions were used to describe their experiences as GTAs in their first semester. As a whole, their first semester experience was characterized as a positive one (e.g. excited, confidence, comfortable, etc.). Although positive overall, GTAs also described contexts that elicited negative feelings (e.g. frustration, overwhelmed, nervous, etc.). Specific contexts, such as orientation and other training methods evoked notably positive emotions, as GTAs felt confident and prepared to complete their duties.

Conclusions: The emotional experiences described by the GTAs can be used by coordinators and faculty to better prepare and socialize GTAs in their first semester. Specifically, universities can replicate the instances

that provoked positive emotions and remove unnecessary tasks that provoked negative emotions.

Athlete/Parent Perceptions of Values Obtained Through Participation in Youth Sport

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Background/Purpose: Youth sport athletes have previously stated participation and fun are the driving forces behind their involvement in youth sport programs. Youth athlete's perception of parental values also help to shape these beliefs. Therefore, the majority of the research in this area has focused solely on athlete's values, as well as athlete perceptions of their parent's values, leaving the parents as underutilized sources of information. Thus, the purpose of this exploratory study was to compare athlete's perceptions of parental values with parent's perceptions of athlete values gained through participation in youth volleyball.

Method: This study was conducted in strictly a youth recreational setting. Participants were 75 female youth volleyball players and 65 of their parents. Athletes ranged in age from 8-14 ($M = 10.67$, $SD = 1.38$), with 1-6 years of playing experience ($M = 2.3$, $SD = 1.27$). Parents ranged in age from 28-63 ($M = 41.22$, $SD = 6.82$). Participants were asked to complete the 2nd Youth Sport Values Questionnaire (YSVQ-2). The YSVQ-2 consists of 13 items and includes five moral values (obedience, fairness, sportspersonship, helpfulness, and contract maintenance), three competence values (achievement, showing skill, and self-direction), and three status values (winning, public image, and leadership). Athletes and their parents were separated so there was no undue influence on each other. Both parents/guardians and athletes were asked to complete the instrument. Parents were asked to answer based on their children's perceived values while children were asked to answer based on their parent or guardian's perceived values. The child and parent perceived values composite score and individual question scores were analyzed using independent sample *t*-tests.

Analysis/Results: The composite score between athlete perception of parent's values and parent perception of athlete's values was significantly different ($p < .05$). Specifically, perceptions of all four competence-based values questions were significantly different ($p < .05$) and perceptions of two of the five moral-based values questions were also significantly different ($p < .05$).

However, parents and athletes held similar beliefs for status-based values questions ($p > .05$).

Conclusions: The study indicates that parent's perception of athlete sport participation conflicts with their child's perception of what parents feel are values gained through participation. Specifically, athletes felt their parents believed participation in youth sport was to gain moral values and improve performance whereas parents did not feel that athletes cared as much about these outcomes. Understanding why this discrepancy exists may shed light onto expectations of both athletes and parents as it pertains to involvement in youth sport.

Big Brother: The Reality of Hiring Practices in the 21st Century

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Background/Purpose: Professional dispositions are a key focus and assessment of many undergraduate physical education teacher education (PETE) programs. However, many of these assessments do not take into account a student's digital presence. It is this concept that is often analyzed as part of the hiring process by modern-day school administrators. This study evaluated if and how school administrators use web-based searches of job candidates during the hiring process, including whether or not to move forward with a candidate. The results from this study will inform teacher educators and teacher candidates of the importance of their existing digital presence related to future employability. Potential benefits include increasing awareness related to the modern age hiring process in schools.

Method: Participants included 359 school administrators from across the country, including superintendents, principals, vice principals, and department supervisors who on average have 13.42 years of experience in their position and interview 5.44 teachers a year. Administrators received a link to participate in a cross-sectional survey and were asked to indicate how they do or would use web-based searches to analyze a job candidate's online presence and professionalism, as well as how this may affect employability of the candidate.

Analysis/Results: Descriptive statistics were used to evaluate the school-administrators use of web-based

searches during the hiring process. 74.4% of the administrators surveyed reported that they commonly use web-based sources to screen potential employees, including, Facebook (72.7%), Google (67.4%), and Twitter (41.5%). The primary reasons that administrators identified for conducting a screening included professional presentation (81.1%), school-fit (53.5%), and to learn more about candidates qualifications (35.1%). Administrators also identified reasons in which they would be extremely likely to not progress with a job candidate based on information found in a web-based search, the most common being that a candidate lied about qualifications (63.8%), evidence of discriminatory comments (60.7%), and evidence of drug or alcohol use (49.9%). Lastly, administrators identified factors that were extremely likely to increase the likelihood of hiring a job candidate based on their web-based search, the most common being evidence that supports their background qualifications (42.9%), conveys a professional image (40.1%), and great communication skills (32.9%).

Conclusions: The survey results indicated a significant trend toward the regular use of web-based searches of job candidates by school administrators as a critical part of the hiring process. It is clear that administrators are using negative information regarding the job candidate as an indicator to discontinue the hiring process. Likewise, positive information about the job candidate can increase the likelihood of hiring the teacher. While it is not clear how important a candidate's digital presence is to their overall employability, these results suggest that preservice programs should incorporate and inform preservice teachers on the importance of a professional digital presence as a critical part of their future job search.

Breaking Down Intercollegiate Athletic Reform: A Scouting Report

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Background/Purpose: There is an immense amount of literature describing the need for reform in intercollegiate athletics. McMillen (2002) believed big-time college sports erode the integrity of our institutions of higher learning where athletes breaking the rules persist as the norm and the term "student-athlete" is an oxymoron. Mahony, Fink, and Pastore (1999) suggested that scholars have pointed to the incidences of corruption in

sport and called for significant changes to the current structure of intercollegiate athletics. In light of this, the purpose of this preliminary study is to examine the opinions of various stakeholders of intercollegiate athletics including athletic directors, faculty athletic representatives, senior women administrators and head coaches on what they believe should be examined more closely in future intercollegiate athletic reform.

Method: A Survey was sent to over 500 stakeholders in various positions within intercollegiate athletics. Data was collected online using a web-based package called SelectSurveyASP. For this study a modified version (four contacts) of the Dillman “Tailored Design Method” was used to increase participant response rate.

Analysis/Results: A total of 122 surveys were returned. The results of this study found five major themes of intercollegiate athletic reform that the participants felt should be examined more closely in the future. They include, a) Title IX, b) financial concerns, specifically increasing coaches’ salaries, c) athlete welfare, d) academic issues, and e) the opinion that football and men’s basketball were the source of many of the reasons for reform.

Conclusions: The purpose of this preliminary study was to examine the opinions of specific university athletic individuals in an effort to understand various aspects of athlete reform and what athletic directors, senior women’s administrators, faculty athletic representatives, and head coaches felt needs to be examined for future athletic reform. The answers to this inquiry may influence the lives of many college age student-athletes, coaches, and administrators. Further research is needed to gain insight on the lasting impact such reforms might have on intercollegiate athletics. This study found five major themes of intercollegiate athletic reform that the participants felt should be examined more closely in the future. They include, a) Title IX, b) financial concerns, specifically increasing coaches’ salaries, c) athlete welfare, d) academic issues, and e) the opinion that football and men’s basketball were the source of many of the reasons for reform.

Conceptualizing the Meaning of Disability and Inclusion Through Community Service Learning

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Background/Purpose: The goal of this study is to understand the impacts of community service-learning (CSL) offered in the introductory course of adapted physical education (APE) on developing preservice

physical education teachers’ knowledge acquisition. Guided by Mezirow’s (2000) transformation theory, Kiely’s (2005) study on service-learning and transformative learning, and sociocultural model of disability (Fitch, 2002; Marten, 2009), this study sought to address the transformative learning of preservice physical education teachers regarding their perception toward disability and inclusion as a result of their CSL experiences.

Method: The learning experiences of eight preservice physical education teachers (6 females, 2 males) enrolled in an introductory APE course (Fall 2017) was explored by using a qualitative case study approach (Stake, 1995). All preservice teachers participated in a semester-long CSL of the APE program at a local high school. They engaged in activities of meeting and developing a rapport with the community partners including APE teachers, special education teacher, and paraprofessional, observing and analyzing the current APE program, planning and teaching APE lessons, and reflecting own practices and experiences. Fifteen to eighteen students with disabilities (e.g., autism spectrum disorders, blind, cerebral palsy, Down syndrome, intellectual disability, and multiple disabilities of cerebral palsy, intellectual disability, deaf, and English as a second language) attended the APE program (45 minutes/session) once a week. At the end of the course, the preservice teachers all participated in semi-structured, face-to-face interview ranged from 30-60 minutes. Their work samples in the APE course (a weekly reflective journal, reflection on service learning program, and personal essay on inclusion in physical education) were also collected to triangulate with the interview data. The strategies used for the research rigor were triangulation and member checking (credibility), self-reflective journaling and theoretical position (reflexivity), and thick description (resonance) (Zitomer & Goodwin, 2014).

Analysis/Results: Inductive thematic analysis was used to understand the transformative learning of preservice physical education teachers in the CSL (Creswell, 2013). Collected data were coded by the events, feelings, meaning, and patterns, and then sorted into themes (Boyatzis, 1998; Stake, 2010). The emerging categories and themes were also analyzed within and between cases. Preliminary themes are: *beyond empathy, understanding of a human difference, teacher’s influence on students, inability and limitation, capability and possibility, it’s about fairness, and acceptance and respect.*

Conclusions: The preservice teachers reflected that their perception of disability and inclusion transformed as a result of the CSL. The preservice teachers believed that inclusion should be promoted to enable students

with disabilities to be involved in diverse learning experiences. They also perceived disability as a difference, so the capability of students with disabilities should not be prejudged by their label. Even though the preservice teachers recognized the importance of inclusion, they still showed some concerns (i.e., how to include) about including students with disabilities in general physical education because their CSL experiences were teaching an APE program.

Demographic and Cultural Influences on Perceived Swimming Ability in Urban Youth

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Background/Purpose: Ten people die every day from unintentional drowning, with African American children (age 5-19), proving especially susceptible to water-related accidents and death, with drowning rates 5.5 times that of White children (CDC, 2014). These drowning rates are aligned with the significant disparity in overall swimming ability in minority communities, where 70% of African American and 58% of Hispanic children in the United States have “low or no swim ability” (Irwin, Drayer, Irwin, et. al, 2008). A better understanding of demographic and cultural factors that influence swimming participation in minority communities is a critical piece of establishing preventative programs for urban youth. Therefore, this study was designed to better understand the factors that predict perceived level of swimming ability in urban youth.

Method: After IRB approval, 214 youth from two high schools in separate urban school districts (Male=43%) completed a survey about their demographic characteristics, perceived swimming ability, and factors related to their swimming participation. The previously validated questionnaire had a total of 25 questions and consisted of six domains: (a) income/financial influences, (b) facility access/safety, (c) interests/motivation, (d) personal appearance, (e) parents/caregivers, and (f) contact hours (Irwin et al., 2011). The questions ranged on a 4-point Likert scale from strongly disagree (1) to strongly agree (4).

Analysis/Results: Two multiple regressions were run to predict each of six domains’ relationship with the swimming participants. The first regression analysis sought to understand if the six constraint domains predicted whether youth perceived themselves as

a swimmer or nonswimmer, controlling for gender, age, and race. Overall the regression model was significant $F(6,187) = 6.05, p < .001, R^2 Adj. = 0.18$. Race ($b = .15$), along with financial influences ($b = .15$) and caregivers ($b = .16$) were the only significant predictors of youth perceiving themselves as swimmers or non-swimmers. The second regression analysis went a step further to explore if constraints predicted perceived swimming ability. Controlling for age, gender, and race the overall regression model was significant $F(6,187) = 11.01, p < .001, R^2 Adj. = 0.32$, with financial influences ($b = .37$), caregivers ($b = .20$), and contact hours ($b = .16$) as significant predictors.

Conclusions: Results from this study suggest that financial constraints and caregiver support were the most predictive factors on perceived swimming ability among minority youth. When coupling the depressed financial position of most families in this urban city with the high percentage of minority residents with no or low swimming ability, it would be unrealistic to place the onus on parents of teaching life-saving swimming basics. Although neither school district required swimming in their physical education curriculum, implementing such a requirement could be an effective way to address drowning rates and the lack of swimming ability in this community without relying on the families’ financial means or caregiver ability or encouragement.

Determining Deliberate Practice Activities in Women’s Team Sports

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Background/Purpose: Deliberate practice has been identified as a necessary component to the development of athletes in both team sports (Helsen, Starkes, & Hodges, 1998; Soberlak & Cote, 2003) and individual sports (Hodge & Deakin, 1998; Starkes et al., 1998). Male team sport athletes in field hockey and soccer indicated that many of the demanding practice activities included in their development were also enjoyable, a contrast to the definition of deliberate practice (Ericsson, Krampe, & Tesch-Romer, 1993). Determining which practice activities make up deliberate practice in a specific sport has yielded consistent results with two practice activities: individual practice with a coach and game-like practice situations with the team. The purpose of this study was to examine the extent to which general practice activities met the guidelines for deliberate practice in team sports for females.

Method: Participants were current female collegiate athletes from an NCAA Division I school in the deep south in volleyball (n=16), soccer (n=23), softball (n=25), and basketball (n=10). Subjects were 19.94 years old, Caucasian (60.8%) or African American (21.6%), from hometowns with less than 10,000 people (39.2%) or from large cities with a population greater than 1,000,000 people (23.0%). A questionnaire of practice activities related to team sports including practice with others, practice alone, sport-related activities (training/improvement) and daily activities was constructed using input from current college and high school coaches. Subjects were asked to rate activities on a 10-point scale in terms of its relevance to success in the sport, the level of physical effort required to perform the activity, the level of mental concentration necessary to complete the activity, and how much they enjoyed the activity.

Analysis/Results: The grand mean for all activities in relevance, physical effort, mental concentration, and enjoyment were calculated. Significant differences were determined with dependent t-tests that had a Bonferroni adjustment applied ($p < .05/32 = .0016$). The values significantly different from the grand mean were identified. None of the activities met the definition of deliberate practice with high values for relevance, physical effort, and mental concentration with lower values for enjoyment. For practice with others, live scrimmages, defensive tactics, and defensive techniques were rated the highest although in practice alone, the development of strength and conditioning received the highest overall rating for relevance. T-tests revealed several significant differences between sports, sport type, and body size. No significant differences were demonstrated in live scrimmages when practiced with others or in practice alone with a coach, both of which have previously demonstrated in research.

Conclusions: None of the activities listed met the initial definition of deliberate practice, primarily due to the higher ratings for enjoyment. While a general pattern of development may exist for female athletes, the importance of deliberate practice activities varies across sports. Body size and sport type may determine what practice activities are considered deliberate practice.

Emotional Intelligence, Emotional Exhaustion, Job Satisfaction, and Subjective Wellbeing in Physical Education Teaching

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Background/Purpose: Emotional intelligence has received a significant attention across a variety of sports due to its potential contribution to athletic performance, team sports organizations, and competition day emotions (Welty Peachey, Zhou, Damon, & Burton, 2015; Juravich & Babiak, 2015; Laborde, Dosseville, & Allen, 2016). Indeed, the studies conducted in the area of leadership and administration suggested that emotional intelligence was positively associated with leadership emergence, effectiveness, and behaviors including (Walter, Cole, & Humphrey, 2011). Despite the importance of emotional intelligence in various areas, relatively little research has been conducted in sport leadership contexts (Lee, 2018). Moreover, the scope of the existing research in sports is also limited to its effect on performance-related outcomes, rather than health-related outcomes. Thus, to fill this void, this study sought to investigate the relationships between emotional intelligence and subjective well-being through job satisfaction and emotional exhaustion among high school athletic directors.

Method: A total of 394 athletic directors ($M_{age} = 48.75$, $SD = 8.68$) working at public high-schools in the U.S. participated in this study. Data were collected through a survey that was developed and distributed through an online survey platform. Participants completed cross-sectional questionnaires related to emotional intelligence, job satisfaction, emotional exhaustion, and subjective well-being. We conducted a confirmatory factor analysis (CFA) to examine the factorial validity of the measurement model (Brown, 2006) and structural equation modeling (SEM) to examine the relationships among study construct.

Analysis/Results: The concurrent CFA indicated that the measurement model was a good fit, $\chi^2/df = 607.048/309 = 1.96$, CFI = .93, TLI = .91, RMSEA = .05 (90% CI: .044, .055). The Results of SEM indicated that the structural model was a good fit for the data, $\chi^2/df = 708.659/316 = 2.24$ ($p < 0.01$); TLI = .90; CFI = .91; RMSEA = .06 (90% CI .051-.062). Additionally, all of the pathways in the structural model were associated with significant β weights (i.e., $t > 1.96$). Regarding the proposed hypotheses, emotional intelligence was positively associated with subjective wellbeing ($\beta = .51$; $p < .01$) and job satisfaction ($\beta = .47$; $p < .01$), and negatively associated with emotional exhaustion ($\beta = -.38$; $p < .001$). Job satisfaction was positively related to subjective wellbeing ($\beta = .25$; $p < .001$) emotional exhaustion was negatively associated with subjective wellbeing ($\beta = -.37$; $p < .01$).

Conclusions: The results highlight the important role of emotional intelligence on athletic directors' subjective wellbeing. Athletic directors should, therefore, take

measures to increase their emotional intelligence through professional learning opportunities and school support structures. Specific explanations of the underlying frameworks used in this study (i.e., Job demand-resource model) and significant theoretical and practical implications will be discussed during the presentations.

Enhancing Diversity in Swimming: Focus Group Ideas Toward Solutions

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Background/Purpose: Past research findings have highlighted that underserved children in the United States (US) have high levels of “no or low” swimming competence and participation. Lack of swimming ability has been shown to elicit higher rates of drowning, and, in particular, African American youth have approximately three times the rate for fatal drowning compared to their more advantaged peers. The purpose for this research was to estimate the current swimming ability for youth in the US and uncover solutions to this deadly problem.

Method: A cross-sectional study using survey research and focus group interviews, was launched during the spring of 2017 in Houston, TX, Jacksonville, FL, Las Vegas, NV, Los Angeles, CA, and Memphis, TN. Local YMCA organizations and staff were trained to administer surveys (N=1428) and hosted four focus group interviews (N=15). All focus group interviews were audio and video recorded, and led by at least one research team member. Coding of the focus group data was performed using repeated readings of transcripts. Further, field and debriefing notes were included during the initial coding process. Researchers continually searched for overarching themes and patterns.

Analysis/Results: Data analysis uncovered four major themes: *Influence of parent/caregiver’s swimming ability, reasons to enroll/not enroll in swim lessons, fear factor, and parental influence/encouragement.* The first theme was conspicuous in all four focus groups, and was confirmed with survey data that revealed if a parent reported a “good” swimming ability, the child was 4.3 times more likely to report a “good” swimming ability. The age at which parents with “good” swimming ability introduced their child to the water was as an infant, and the term “*dunking babies*” was used often as a way to

explain what they believed to be a common and effective practice. *Reasons for enrolling* their child into lessons were to allow their child to be comfortable in the water to support positive future family experiences with swimming. The *fear factor* theme was pronounced as all participants described a healthy fear of the water. But all wanted their children to learn how to swim in order to overcome the danger rather than avoid water all together due to the fear. And the last theme, *parental influence/encouragement*, was also often discussed as a childhood imperative. Learning how to swim was a “*life skill and not negotiable.*”

Conclusions: Despite various demographic and worldview differences, all participants voiced the opinion that they would do whatever they could to allow their child to become a proficient swimmer. Most participants believed that formal swimming lessons should be the norm, and would lead to an essential “life skill.” Many participants expressed a fear of the water, but it was described as “healthy fear” and would help their children to be safe. Finally, participants expressed that parents have an important role in ending the cycle of drownings by being a role model and providing encouragement during the learning process. As a consequence, these solutions could support a decrease in fatal and nonfatal drowning rates.

Expert Versus Novice Thought Process Before, During, and After a Volleyball Match

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Background/Purpose: Research into sports development and expertise has been explored for many years, however, studies involving sports officiating are limited. The focus of research has examined the decision making process (Ste-Marie, 1999), priming decisions (MacMahon, Starkes, & Deakin, 2007), and positioning effects (Plessner & Schallies, 2005) through videos and photographs. Real-world applications are a needed component to advancing officiating training (Catteeuw et al., 2009). A recent study of expert and novice hockey officials included think-aloud audio and video recordings of officials during contests to capture current thoughts about specific calls during competition (Hancock & Ste-Marie, 2014). Understanding the thought processes of an expert official during a game will aid in the development of training programming for novice officials. The

purpose of this study was to investigate the differences among thought processes pre, during-, and post-game between expert and novice volleyball officials. This study was completed in live games with expert and novice volleyball officials. It will add to the expertise literature in sport and officiating.

Method: Expert (n=12) and novice (n=8) volleyball officials wore microphones and participated in structured interviews pre and post-game to examine thoughts about the upcoming match and the completed match. Pregame interviews were administered to officials to describe what they were thinking prior to a match and if they are working on a specific component officiating for that match. Post-game interviews allowed officials to self-evaluate their performance based on the pregame interview. Officials were prompted during the match at set point intervals, during time outs, and between games about their thoughts on the match.

Analysis/Results: The results indicated that novice officials' prematch thoughts centered on proper mechanics and match protocol. Post-game comments from novice officials focused on self-analysis of missed calls. In-game comments from novices included unstructured, inconsistent statements about actions surrounding the court. Expert volleyball officials' preand post-match thoughts aligned with gaining an understanding game strategy and player ability. Knowledge of the history of the teams allowed officials to preplan for situations close to violations and provided a rationale for making/not making certain calls.

Conclusions: Elite officials demonstrate a higher understanding of game strategy and how ability and strategy interrelate with officiating. Additional results and analysis in a larger sample size may help determine patterns of development for expert volleyball officials.

Expert-Novice Differences in Specialized Content Knowledge of Rhythmic Gymnastics Coaches

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Background/Purpose: From Shulman's (1986) original conception of pedagogical content knowledge (PCK), researchers (e.g., Ball, Thames & Phelps, 2008; Ward, 2009) have shared a consensus about content knowledge (CK) that comprised of common content knowledge (CCK) and specialized content knowledge (SCK). SCK is a knowledge specific to teaching and CCK is the knowledge of performance and skills related to teaching a subject matter. SCK and CCK is a requirement for

effective teaching of physical education. In physical education context SCK is composed of error detection and instructional task presentation. There are, however, few studies examined SCK in coaching context. Thus, the purpose of this study was to examine SCK of coaches in rhythmic gymnastics.

Method: The study was based on the expert-novice paradigm and aims to identify differences between both groups in SCK (e.g., error detection and instructional task presentation variables) when coaching rhythmic gymnastics. Participants were all female novice (N=4) and expert (N=4) coaches. Novice coaches had less than five years of coaching experiences but experts had more than ten years. For data collection coaches watched a video clip of competition exercise (e.g., hoop & club events) by novice rhythmic gymnast. Coaches were asked to evaluate composition and performance (e.g., difficulty body, combination of combined rhythmic steps, dynamic elements, mastery of the apparatus etc.) using Federation International de Gymnastique (FIG) scoring system. Then they were asked to complete a content map (Ward, Lehwald, & Lee, 2015) based upon their FIG score code to improve difficulty and technical scores. Coaches' FIG scores were compared to international judge 's score to discover how their error detections are alike. Coaches' FIG scores were used for error detection knowledge estimates and content map categories were for instructional task presentation knowledge. Data were analyzed using descriptive statistics.

Analysis/Results: Results showed that in relation to error detection, novice coaches showed smaller standard error (hoop = 1.5; Club=1.23) than expert (hoop = 1.43; Club=2.85) in the FIG scores. In relation to instructional task presentation, novice coaches showed more in extension task (M = 12.75, SD = 1.29) than experts (N=8.5, SD=3.41) but they showed less in refining task (M=2.0, SD=1.63) than experts (N=5.0, SD=2.16). Informing and applying task games categories were similar.

Conclusions: Findings provide evidence to support the previous study (Ward et al., 2018) indicating that SCK is not acquired simply by experience of coaching. Limitations of the study (sample size is small, more specific demographic information is needed) was discussed to identify the relationship between SCK and specific demographic variables. This is the first study in coaching context to examine the SCK of coaches.

Exploration of the Health and Physical Activity General Education Requirements of HBCUs and TCUs

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Background/Purpose: College students who complete physical activity (PA) and health education (HE) courses receive numerous physical and cognitive benefits (Casebolt et al., 2017). The activity-based courses provide students with persistent opportunities to engage in an array of physical activities. Whereas the health education courses present current information about overall wellness. However, the number of institutions that require these courses has dramatically declined over the last nine decades (Cardinal, Sorensen, Cardinal, 2012). Additionally, Henry et al. found that only 56% of colleges offer at least one personal health course (2017). This limiting access to health-related courses poses a barrier for college students to develop physically active lifestyles and increase physical literacy.

Being that Historically Black Colleges and Universities (HBCUs) and Tribal Colleges and Universities (TCUs) serve underrepresented students, it is imperative to examine the prevalence of these health-related courses at these minority serving institutions (MSIs).

The purpose of this study was to examine the general education requirements and accessibility to health education and physical activity courses at HBCUs and TCUs.

Method: Using publicly available information, online course catalogs ($N = 98$) of four-year HBCUs ($n = 85$) and TCUs ($n = 13$) were examined to determine the general education requirements pertaining to health education and physical activity courses. Additionally, course offerings of each institution was examined to determine student access to both PA and HE courses. Each institution was categorized based upon the general education requirements and the types of courses offered.

Analysis/Results: The majority (96.9%) of sampled institutions offered at least one health education or physical activity course, while 67.3% of the institutions required either a health education or physical activity course be completed to fulfill general curriculum requirements. Whereas private HBCUs were more likely to require the completion of a PA or HE course than public HBCUs, public TCUs were more likely to require the completion of a PA or HE course than private TCUs. Overall, PA and HE courses are more prevalent at HBCUs (98.8%) than TCUs (84.6%).

Conclusions: The rate of HBCUs and TCUs that require the completion of HE and PA courses to graduate exceed that of nonHBCUs/TCUs (Henry et al., 2017). The prevalence of these courses can serve to mitigate physical inactivity among students and increase general health knowledge in an effort to establish life-long health-enhancing behaviors.

Unfortunately, institutions of higher education have begun to reduce the mandatory number of credit hours to graduate in order to expedite completion and decrease costs (Council of State Governments, 2013). This has resulted in the elimination of required HE and PA courses. As such, it is imperative to explore the role of institutions with missions to *develop the whole person* in educating students about health issues that overwhelmingly impact their communities.

Exploring Gender and Culture Barriers to Female Student Physical Activity

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Background/Purpose: Research demonstrates that participation in physical activity leads to improved physical and psychological well-being, yet studies show that female college students in particular often have inadequate exercise. The causes for this reluctance are complex and often related to the social, cultural, and gender structure of society. Moreover, female students do not all have the same experiences or perspectives, so intersectionality studies are critical to understand the multiplicity of girls' identities to meet their diverse needs. With these concepts in mind, the researcher focused on the two following research questions: (1) What are the perspectives of female college students enrolled in a sports activity course on the benefits of physical activity? (2) How might female college students from various cultural backgrounds have different perceptions of the role of gender in physical engagement?

Method: The context of this study was a sports activity course at a large midwestern research university. Focal participants included 3 female students who represented different cultural backgrounds and different skill levels in the course: 1 White undergraduate student, 1 international graduate student (India), and 1 international undergraduate student (China). The study was qualitative using an interviewing approach. The interviews were audio-recorded, transcribed, and analyzed; and major themes emerged.

Analysis/Results: The female students identified several holistic benefits of participating in the sports activity course. In support of the literature, they claimed that regular physical activity positively impacted their academic studies by reducing stress, increasing confidence, and improving concentration. The participants also identified health benefits of participating in the sports activity class, such as avoiding junk food, eating healthier foods, and being motivated to exercise outside

of the course. A significant finding of the study was that the participants expressed very different perspectives about the role of gender on physical activity. Gloria (pseudonyms used for all participants) expressed discomfort exercising under the what feminist literature refers to as the “male gaze,” and reported avoidance strategies to find ways to exercise away from their surveillance. In contrast, Adu denied the presence of gender barriers in physical activity, instead insisting on individual free will rather than acknowledging potential social biases and stereotypes. Jia recognized gender stereotypes but expressed mixed feelings toward them, as she felt positively toward the male students who played more easily against her than those who did not. These findings revealed the complexity of gender dynamics and the diversity of female students’ perspectives and experiences of the same sports activity course.

Conclusions: The results of this study highlight the holistic benefits female students can have through participating in a sports activity class and may indicate that intervention is needed to increase female college students’ physical activity. Schools should create positive learning environments for female students, develop effective teaching strategies, and understand female students’ complex attitudes toward physical activity. Furthermore, schools need to consider gender and ethnic differences when developing physical activity interventions for college students, as the voices of these participants reflect the multiplicity of female students’ perspectives.

Factors influencing Expert Physical Education Teachers’ Professional Development in Shanghai

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Background/Purpose: Research has documented that physical education (PE) teachers often experience low status and marginalization (Lux & McCullick, 2011). One counter to these experiences is to provide strong professional development opportunities. The professional development of PE teachers can be influenced by many factors. Few studies examine expert PE teachers’ professional development in China (Yin, 2016). The purpose of this study was to explore factors influencing expert PE teachers’ professional development in Shanghai.

Method: A qualitative approach using individual semi-structured interviews was used to collect data from 20

expert PE teachers (10 males and 10 females, aged 35-50 years). Nineteen were senior teachers (equal to associate professor in China), another 1 was first-class teacher (equal to assistant professor). Seven participants were elementary PE teachers, five were middle school teachers and eight were high school teachers. The interview transcripts were analyzed to find common themes using the constant comparative method. During analysis, triangulation, negative case checks, member checks, and an extensive peer review were used.

Analysis/Results: Eight themes emerged as factors influencing expert PE teachers’ professional development: (1) Personal efforts, including having a strong sense of initiative, hard work, constantly surpassing the status quo, and gaining recognition from others. Hard work was the strongest factor; (2) Professional beliefs, represented in six aspects: love the teaching PE profession, strong professional identity, good career and responsibility, positive and enterprising attitude, good professional ethics, good career ideals. Professional ethics and career ideals are valued most; (3) Teaching and research practice, including cutting-edge teaching ideas, studying national policy documents, actively carrying out the practice of teaching reform, actively doing research, combining teaching with research, publish the findings. PE teaching reform was the most frequent factor; (4) Professional reflection indicated in terms of understanding the role of reflection, engaging in methods of reflection, reflect constantly in practice, writing reflection records, analyze reflection, apply reflection to work; (5) Expert guidance, including researcher guidance, learning from excellent teachers, peer teaching, teacher coach guide, talent base training, and inservice training. Research and peer teaching were most valued; (6) Valued by leaders, including educational policies, resources provided by the government, support from administrative departments, guidance from teaching and research departments, attention of school leaders, and the support of teacher leaders support. Educational policies and teacher leaders were the most valued; (7) Environmental support, including the quality of the physical environment, working atmosphere, family environment, colleagues’ encouragement, students’ love and interpersonal relationship. Most valued was the family environment; (8) Work stress, like work remuneration, working conditions, teaching and research stress, interpersonal relations, work prospects, rules and regulations, family. Work prospects were the most concerning.

Conclusions: This study shows that there are eight factors influencing expert PE teachers’ professional development in Shanghai, and different factors’ importance may vary. Given the findings, this study

recommends that PE teachers should deal with these factors, so as to enhance their professional level and reduce marginalization. PE teachers should learn from the expert teachers to ensure their own professional development.

Factors of Adapted Physical Activity Practicum Affecting College Students' Attitudes

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Background/Purpose: Within adapted physical activity, hands-on experiences have been strongly advocated for by numerous researchers (e.g. Folsom-Meek, Groteluschen, Krampf, & Nearing, 1999; Hodge, 1998; Rowe & Stutts, 1987). Service learning is a common strategy used to provide hands-on experiences to college students to gain experience with diverse populations, such as people with disabilities (Finley & McNair, 2013), and have shown to create positive changes in a variety of outcomes, such as better attitudes toward disability. Existing literature, however, has shown inconsistent effects of service learning programs, particularly on college student attitudes toward disability (e.g. Bergman & Hanson, 2000; Schoffstall & Ackerman, 2007). The purpose of this study, therefore, was to identify specific service-learning characteristics or components that contribute to larger changes in college student attitudes, using meta-analysis.

Method: A systematic literature search identified 1984 potential studies from 6 different databases (Cinahl, Eric, Medline, PsycInfo, SportDiscus, Web of Science), and a total of 14 studies met the necessary criteria for quantitative analysis. The inclusion criteria were the study: (a) included a sample of college student participants, (b) included a service-learning program that was related to physical activity and served individuals with disabilities, and (c) examined the change in attitudes of students based on the service-learning program. Studies were excluded if the necessary data to calculate effect size was not available in the article or upon request. Potential factors affecting the quality of the service-learning programs were (a) mandatory versus voluntary participation, (b) receiving lecture, (c) total intervention time, (d) use of theory, and (e) the type of student involvement. Effect sizes were estimated as Hedge's g using random effects, and heterogeneity among effect sizes was assessed with Q and I^2 statistics.

Analysis/Results: The results confirmed that there are significant differences among effect sizes of the included studies ($Q=25.71$, $p<0.05$, $I^2=45.54$). The results also suggested that several service-learning characteristics may lead to different magnitudes of change in attitudes toward disability. Service-learning programs that are a mandatory requirement for college students had a smaller impact ($\delta=0.27$, $SE=0.07$, 95% CI 0.13, 0.41) on attitudes than programs with a voluntary basis ($\delta=0.59$, $SE=0.07$, 95% CI 0.46, 0.73, $Q=10.91$, $df=1$, $p<0.05$). Interestingly, the impact of service-learning programs with an included lecture component was smaller ($\delta=0.37$, $SE=0.07$, 95% CI 0.24, 0.51) than that of programs without lecture ($\delta=0.71$, $SE=0.14$, 95% CI 0.46, 1.00, $Q=5.33$, $df=1$, $p<0.05$). Additionally, programs that emphasized more direct contact and involvement had a smaller impact on attitudes ($\delta=0.40$, $SE=0.05$, 95% CI 0.30, 0.50) than programs that emphasized indirect contact and working together to achieve a common goal ($\delta=0.84$, $SE=0.13$, 95% CI 0.58, 1.10, $Q=13.18$, $df=1$, $p<0.05$). Theoretical foundations, total contact time, and intervention duration were not found to contribute to significant differences in attitudes toward disability.

Conclusions: The present analysis suggests that not all service-learning programs are created equal, and factors like voluntary status and type of involvement may lead to greater changes in attitudes toward disability.

Female Basketball Player Behaviors and Attitudes About Practice and Development

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Background/Purpose: The development of an athlete contains a variety of both practice and play activities. As youth level coaches have their own ideas and background information about how and what to do for young athletes, it is important that we as coaches and researchers provide the most accurate and effective training programs to promote quality development in sport. Gaining an understanding of what skills to teach, when to teach those skills, and how best to teach those skills can help youth coaches, players and their parents realize what activities to focus on at the different stages of development. The purpose of this study was to ascertain the sport history of current female basketball players regarding the sports they played and how long they had been involved in basketball related activities.

The opinions and attitudes toward developmental practice activities was also collected.

Method: Current female basketball players (N=72) completed a retrospective questionnaire about their overall sports experiences and specifically their basketball origins and activities. The questionnaire was developed in-line with the protocol established by Law, Ericsson, and Cote (2005) which provided prompts about general developmental activities and then asked about specific activities related to the development of basketball. Subjects were asked about the age they started sports, how many sports and what sports they played growing up, what levels they played each of those sports (recreational, travel team, scholastic), if they received private training in any sports, and if they participated in pick-up games in any sports. Subjects were asked to rate a series of practice activities as to their importance in their personal development as a basketball player. Additional questions allowed subjects to indicate how much they had practiced specific developmental activities and also how well they perceived their abilities to be.

Analysis/Results: Descriptive statistics were collected and an ANOVA using division as the independent variable were applied. Players who were currently playing at the NCAA Division I (DI) level reported more individual awards as a basketball players and many of those awards were from regional, state, and national voting bodies. Players at the DI level were also on teams, either scholastic or travel teams, that had greater success in the end of season tournaments. Independent t-tests revealed divisional differences in time spent in ball handling and dribbling, cardiovascular training, and attending showcase events. Differences were also observed between positions.

Conclusions: Players looking to be recruited and play at the DI level should expect to receive attention and nominations from regional and state-level coaches. Team success is also an important factor in the exposure of talent to more recruiters. Positional players are focused on the primary activities of their position and have spent little time in other developmental activities.

High-Impact Practice: Preparing Sport Management Students Before Internship

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Background/Purpose: Experiential learning has become a popular pedagogical practice around the world, and has become a critical component of sport management programs. Sport management programs engaged in experiential learning— through both internships and structured volunteer projects – has become a widespread pedagogical practice; nearly 90% of sport management programs in the United States have mandatory internship requirements (Jones, Brooks & Mak, 2008). This study's main purpose was to extend the current understanding of sport management internships by examining students' perceptions of how sport management curriculum prepared students for the capstone experience.

Method: Participants were undergraduate sport management students (n=140), from a regional, Southeastern institution, enrolled in a 12 credit hour, senior level capstone internship. Results indicate that participants' perceive and rate experiential learning experiences to be the most valuable aspects of sport management curriculum, compared with required courses in the program. Students' perceived value of sport management coursework for preparing them for internships and sport industry careers was gathered over 5 academic semesters utilizing a 5-point Likert Scale. To further assess student perceptions of what they found to be most valuable from this applied learning experience, we retrospectively examined student reflection papers. Authors then analyzed student artifacts independently using open coding (Corbin & Strauss, 1990).

Analysis/Results: Data were analyzed for recurring themes and students most commonly reported personal and professional competence outcomes as benefits of experiential learning. Specifically, students' perceived ability to negotiate the challenges of group work, gain real-world experience, cultivate professional skills (i.e. critical thinking and leadership); personal growth; and vocational exploration.

Conclusions: Our work suggests that the Commission on Sport Management Accreditation (COSMA) and other discipline-specific accreditation bodies encourage sport management and other programs, respectively, to explore how to improve curricula in ways that implement complex, real-world experiential experiences that parallel the needs of students in the places in which they live. Discussion, implications of these data and suggestions for subsequent assessment practices are provided, so student learning outcomes pertaining to experiential learning can be replicated to foster needed professional competencies for graduates of sport management programs.

Homeschool Parents' Perceptions of Physical Education and Physical Activity

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Background/Purpose: Homeschooling is an educational option providing parents an opportunity to teach their children at home. Homeschooling is one of the oldest forms of education, in fact, some of the earliest American education was based in the area of homeschooling (Rakestraw & Rakestraw, 1990). Current data indicate that almost two million American students or approximately three percent acquire schooling outside of the public school system (Redford, Battle, & Beilick, 2016). Little research exists regarding homeschooling and physical education. It is also unclear whether homeschool students are receiving appropriate instruction in physical education aligned to current standards and outcomes. Therefore, the purpose of the current study examined homeschool student's parents' perceptions of physical education/activity. Primary research questions were focused on whether parents value physical education and physical activity, and what they do to promote them during the homeschool experience.

Method: The primary data collection technique used was a survey questionnaire designed by the authors. A total of ten homeschool parents participated in the survey. The survey was distributed to parents who had enrolled their children in a homeschool physical education program offered through a university physical education teacher education program located in the upper Midwest of the United States.

Analysis/Results: Inductive analysis and constant comparison were used to analyze data. Results indicated that a majority of participants overwhelmingly were supportive of their children engaging in physical education class and thought it was important to include as part of a child's homeschool experience. Participants, however, struggled to keep their children actively engaged in physical education experiences throughout the school year. Regarding participants perceptions of physical activity, they were also very supportive of it and spoke to its importance on a daily basis for their children. Examples of how they kept their children physically active included swim lessons, Wii Fit and Wii Dance, as well as other aerobic types of activities. A majority of parents were unaware of state or national standards/outcomes for physical education and therefore weren't using them as a guide for their children's physical education experiences.

Conclusions: The results of this study indicate that perceptions of physical education among homeschool parents is high and homeschool parents see physical education as critical for their children. However, options available for this to occur are lacking, and therefore many homeschool children do not regularly attend physical education classes. Along with this, parents were unaware of physical education state or national standards and outcomes to assist them in providing appropriate physical education content to their children. Participants also noted the importance that keeping their children physically active was on a regular basis, but again indicated the difficulty that occurred when trying to keep them active. The homeschool community is growing, and although physical education appears to be important in the eyes of parents, it also does not look to be offered on a regular basis, which could be detrimental to homeschool students for a variety of reasons. Further research examining aspects of the homeschool community and physical education is necessary.

Korean Student-Athletes: Are There Social Justice Issues?

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Background/Purpose: Korean society stresses the academic success of adolescents, yet often overlooks the learning of student-athletes. The pressure to bring honor to their country causes athletes, coaches, and staff to concentrate on winning competitions instead of providing enough academic preparation. Thus, Korean student-athletes typically have low school attendance and fail to integrate well into university life. In addition, student-athletes commonly lack readiness and preparedness for employment, so they often face identity crises and struggle to transition smoothly into society. The purpose of this study was to explore Korean student-athletes' views about their academic preparation and confidence to gain full employment upon graduation. A secondary purpose was to investigate Korean student-athletes' views about their academic experiences and their level of satisfaction as students.

Method: The context of this study was two school sites in South Korea: a community college and a national university, and participants included 30 student-athletes (20 men, 10 women). The research design was a descriptive survey, and the participants were administered the *Korean Athletes' Academic Satisfaction and*

Future Employment Survey(KAASFES). Utilizing SPSS software, descriptive statistics were used to analyze the data.

Analysis/Results: The major findings of this study were that most participants believed that academic learning is important for athletes and expressed that there should be higher requirements for class attendance. Yet, only half indicated that they were proud of their GPA. These results support the literature that student-athletes know the value of academics for their future but have little control over their sports schedules and commitments. Even if they want to invest more time and energy in their studies, they fear that it could hurt their athletic performance. Thus, student-athletes may find themselves trapped in the system. Similarly, over half of the student-athletes were hopeful about finding jobs after graduation, but few anticipated they would secure positions related to sports. This finding is troubling because they have invested minimal time in their classes, so they will likely struggle to secure jobs unrelated to sports as well.

Conclusions: In light of the findings, the Korean athletic system needs to make changes to better support the lives of student-athletes. The research findings are applicable not just to the Korean education and athletic context, but also more generally, as athletic-academic balance for student-athletes is a widespread concern for educators around the world. Most athletic systems place heavy pressure on athletes without preparing them for a smooth transition into society and without supporting them to have a stable life in the future. The athletic life may bring fame and honor to the athlete, their school, and their nation, but for the student-athletes, this is often only a short-term glory; thus, schools, communities, and families have a high responsibility to prepare student-athletes for healthy lives after their sports careers. Findings from the literature and the present study suggest ways to achieve better balance between academics and athletics, as well as integrate preretirement planning and identify athletes' social support networks to strengthen their transition into life after athletics.

Learning Science-Based Healthy Lifestyles Knowledge in Physical Education

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Background/Purpose: Physical education is expected to help learn knowledge necessary for developing and maintaining healthy lifestyles (Ennis, 2007). Two science components critical to healthy lifestyles are nutrition/eating and physical activity. The purpose of this study is to identify the effects of a unit in the *Science of Healthful Living* curriculum (Ennis, 2015), Healthy Lifestyles, on learning healthful-living knowledge in middle school students. This study was intended to determine the extent of the curriculum to (a) enhance students' overall healthy-lifestyles knowledge and (b) to improve specific healthful living knowledge in the five knowledge domains.

Method: This study is part of a large-scale curriculum intervention research. The intervention curriculum included a 20-lesson Cardio Fitness Club unit and a 20-lesson Healthy Lifestyles unit. The comparison curriculum followed a separate health education and sport-based physical education. The data reported in this study came from the Healthy Lifestyles unit period that emphasized nutrition and physical activity behavior knowledge. Residual adjusted percent-correct gain scores from 4,828 students taught by 18 teachers randomly assigned to teach the intervention curriculum and 18 teachers teaching the comparison curriculum were analyzed to answer the research question. Students' knowledge about healthy lifestyle in both conditions were measured using a validated standardized knowledge test at the beginning and the end of semester.

Analysis/Results: The group means by teacher were used as the unit of analysis. An independent-sample t-test showed that the intervention students gained more knowledge ($M = .17$, $SD = .04$) than those in the comparison condition did ($M = -.15$, $SD = .21$); $t_{df=34} = 6.501$, $p = .002$, $d = 2.21$. The MANOVA multivariate analysis revealed that there was a statistically significant differences between the two groups (Hotelling's $T = 18.396$, $F_{(5,30)} = 110.35$, $p = 0.00$, $\eta^2 = .948$, estimated power = 1.00) in the five knowledge domains. Post-hoc analyses showed that the intervention had a statistically significant greater effect on learning the science of physical activity ($F_{(1,34)} = 167.80$; $p = 0.00$; $\eta^2 = .83$), action plan ($F_{(1,34)} = 57.57$; $p = 0.00$; $\eta^2 = .916$), nutrition ($F_{(1,34)} = 288.26$; $p = 0.00$; $\eta^2 = .894$), caloric balance, ($F_{(1,34)} = 393.21$; $p = 0.00$; $\eta^2 = .92$) and the SMART strategies ($F_{(1,34)} = 55.10$; $p = 0.00$; $\eta^2 = .62$).

Conclusions: The results indicate that students in the Science of Healthful Living curriculum gained greater overall and specific healthy-lifestyle knowledge than those in the comparison curriculum condition did.

This finding corresponds to the propositions theories that a constructivist curricular environment is considered essential to fostering appreciation of knowledge for healthful living and mastering the content (Azzarito & Ennis, 2003; Chen & Ennis, 2004). The constructivist curriculum characterized by using physical tasks to learn cognitive knowledge provides activation cues that require mental engagement with intensive physical activity to enhance learner commitment (Diakidoy et al., 2003). The findings show a positive, predictive association between constructivist curriculum and achievement in learning the knowledge of healthy lifestyles. The findings further suggest that learning healthy lifestyles knowledge relies on meaningful and appropriate cognitive content.

Learning to Teach Physical Education for Health: Breaking the Curriculum Safety Zone

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Background/Purpose: Rovegno (1994) proposed a theoretical concept, curriculum safety zone (CSZ), to explain uneasiness and resistance by preservice teachers when teaching what they did not feel confident teaching. The purpose of this study is to determine the possibility for preservice teachers to break CSZ when teaching a concept-based, health-first physical education curriculum. This study attempts to answer two questions: (a) will teaching while breaking CSZ affect student learning? (b) will a well-designed, scripted curriculum play a role in breaking CSZ? **Method:** A mixed design was used with 28 intact 6th grade classes from 28 middle schools randomly sampled from Nanjing, China (student N=1,111, 50.2% boys, 49.8 girls). The schools were randomly assigned, evenly, to an experimental condition where a six-lesson health-first curriculum was taught and a comparison condition with a sport-based curriculum. Each condition was taught by 14 preservice teachers with senior standing from a sport-based teacher education university. Learning was assessed using validated pre and post-instruction standardized knowledge tests (Ding, Sun, & Chen, 2011). Knowledge growth was calculated using residual-adjusted percent-correct scores. Expectancy beliefs, attainment value, intrinsic value, and utility value were measured using the Chinese version (Ding et al., 2011) of the Expectancy-Value Questionnaire for Physical Education (Xiang, McBride, Guan, & Solmon, 2003). In both conditions,

observations and semi-structured interviews were conducted with every teacher. Class means of knowledge growth and expectancy-values were analyzed using t-test and ANOVA. Observation fieldnotes and interview transcripts were analyzed using open, axial, and select coding to form themes and grounded theories.

Analysis/Results: Students in the experimental schools gained more knowledge ($M=.65$, $SD=.18$) than those in the comparison schools ($M.40$, $SD=.26$) ($t_{26}=2.92$, $p=.007$, effect size=1.10). All were similarly motivated (expectancy-value dimensions: $F_{1,26}=.01-1.83$, $p=.19-.90$). Observations revealed that experimental school students and teachers were surprised by the written assignments associated with each lesson and the high quality in completed assignments. Interviews indicated that the experimental school teachers noticed student in-class conversations shifting from casual topics to “heart rate” “intensity,” key concepts in the curriculum. Their confidence to teach outside the “CSZ” was explicitly and positively displayed and was attributed to the scripted lesson plans. The confidence was fragile, though, and was affected by gymnasium space available for teaching. Students in the control condition spent 50% of class time practicing the tests in the physical education examination for high-school admissions, including items of fitness exercises and sport skills. They showed low enthusiasm and felt “dull” and “boring.” Observations recorded more “off-task” time than in the experimental schools. The teachers noticed that skilled students would play sports they liked; others would watch and rest. In interviews, they reported experiencing difficult time “managing” the students.

Conclusions: Breaking CSZ needs a strong curriculum to guide preservice teachers through the process by overcoming uncertainty. Apparent and immediate student learning achievement reinforces the process and provides encouragement. A constraining teaching environment could hinder the confidence and processes breaking CSZ. Breaking CSZ is possible, which will assist teacher transition from teaching in CSZ to teaching outside of CSZ in physical education.

Parents' Perceptions of Coaching Sportsmanship

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Background/Purpose: While sport administrators have placed an emphasis on winning awards and scholarships, educators and academics have continued to look into the character development occurring through

participation in youth sport (Bolter & Weiss, 2012; Green, 2014). Coaches have a tremendous influence over athlete's development, due to the amount of time spent with their athletes (Erickson & Cote, 2016; Horn, 2008). Since youth sport programs are focusing heavily on winning rather than character development of athletes, Bolter & Weiss (2012) set out to develop a measurement scale (Sportsmanship Coaching Behaviors Scale, SCBS) to analyze how coaches are coaching sportsmanship. Validation of the measurement has previously been tested with high school athletes (Bolter & Weiss, 2012), adolescents between the ages of 10-15 (Bolter & Kipp, 2018), and teachers (Bolter, Kipp & Johnson, 2018). Schwab, Wells, and Arthur-Banning (2010) found that when comparing parents and youth athletes' perceptions of sports programs, both saw sportsmanship behaviors the same way, but parents rated sportsmanship as being more important than athletes. With parents controlling the purchasing decisions for youth program participation (Green & Chalip, 1998), this analysis validates the construct validity of the 24-item SCBS instrument to measure the parents' perceptions of the coaching sportsmanship behavior.

Method: A convenience sample of parents attending youth sporting events (N= 1275) were approached before their child's game and a sample of 303 (23.7%) was obtained. The Bolter and Kipp (2018) 24 item version of the SCBS uses Lykert-style items (1 = never to 5 = very often) to measure 6 dimensions of the coaches' behavior as it relates to coaching good sportsmanship characteristics. These responses to the 24 items measuring the six dimensions (setting expectations, punishing poor sportsmanship, teaching good sportsmanship, models good sportsmanship, emphasizes good sportsmanship and rewards good sportsmanship) and four general demographic questions regarding parent's age, gender, race and length of participation were collected for analysis.

Analysis/Results: Age ranged from 23-75 years old and self-identify as 55%, 25%, and 10%, as White, African American, and Hispanic/Latino respectively. To test for construct and factorial validity, a CFA using the composite scores from the parents, where composite scores were ran toward sportsmanship as a 1st order factor, using IBM SPSS AMOS 25 software. Our 6-factor model results indicate that the 24-item SCBS instrument is a valid measurement tool in assessing parents perceptions of their child's coach coaching sportsmanship behaviors $X^2(90) = 63.887, p < .001, NFI = .943, GFI = .929, CFI = .950, RMSEA = .142$.

Conclusions: These findings provide further support for the usage of the SCBS as a measure of the parents'

perceptions of the coaches behavior so that this construct can be used to compare the importance of this variable by demographics and the role of sportsmanship coaching perception into future structural models examining program success and valuation.

Perception of Coaching Competency Among African American College Student-Athletes

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Background/Purpose: An efficient coach can influence the nature and the quality of the experience of his/her athletes and for this reason he/she must have excellent scientific techniques (Cushion & Jones) and knowledge, regardless of the age or the competition level of his/her athletes (Giatsis, Zetou, & Tzetzis, 2005). He/She should be able to aim to his/her athletes' self-confidence and to be able to control them under stressful situations, especially at a high level (Chen, Chang, Hung, Chey, & Hung, 2010), a useful attribute, not only within the narrow framework of a team, but in their lives in general. Therefore, the purpose of the study was to examine the perception of coaching competency among African American college student athletes.

Method: A convenient sample (N = 50) of student-athletes from classes at a small southeastern private historically black college and university was utilized in the study. Coaching competency was measured using a Modified athlete's perception of effective coaching traits survey (Holstein, 2010). The responses on the questionnaire ranged from 1 to 5 on a Likert scale with 1 being Strongly Disagree to 5 being Strongly Agree.

Analysis/Results: Demographic data from the questionnaire was analyzed using descriptive statistics. Independent t-test and ANOVA were utilized to determine the differences between the demographic categories and the Coaching Competency questions, alpha = .05. Students reported means above 3.5 for the following questions: Question #2, "Is hard work a trait of a good coach? M = 4.38", Question 3, "Are team-bonding activities part of being a good coach? M = 4.18", Question 4, "Is loyalty a trait of a good coach? M = 4.24, and Question 23, "Does knowing your players as a coach a trait of a good coach?, M = 4.14". Independent t test revealed that females scored higher than males in regard to Question #2, Is hard work a trait of a good coach? (t = 2.88, p = .006), and Question 10, Is having high intensity and energy a trait of a good coach? (t = 2.32, p = .024). Analysis of variance revealed that Juniors and Freshman scored higher than

Sophomores and Seniors regarding Question #6, Is being realistic a trait of a good coach? ($F = 3.30$, $p = .028$). In addition, Analysis of variance also revealed that Basketball athletes scored higher than athletes in other sports in regard to Question #15, Is helping his/her players off the court a trait of a good coach? ($F = 3.06$, $p = .011$)

Conclusions: Results from this study are similar to others in that athletes in Basketball and Football scored higher than those in other sports regarding questions on coaching traits. However, more studies are needed among historically black colleges and universities. Recommendations are made to further examine Coping Competency among African American college student athletes

Perception of Coaching Leadership Among African American College Student-Athletes

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Background/Purpose: Leadership is an important element when it comes to collegiate sports. Leadership is one of the most significant components in human resource management in corporations as well as in sport teams. Leadership in athletics refers to the process of inspiring or influencing athletes of a team to perform their tasks enthusiastically and competently to meet the team's goals (Bridges & Raquemore, 1996). College student athletes are affected by leadership shown by their coaches. Students should be knowledgeable about how leadership affects your performance as college student athletes. The purpose of the study was to examine the leadership among African American College Student athletes.

Method: A convenient sample ($N = 50$) of student-athletes from classes at a small southeastern private historically black college and university was utilized in the study. Coaching leadership is measured in this study by the Modified leadership sport scale (Zhang, 1997). The questions utilized how the athletes feel about their coaches' leadership qualities. The questions ranged from 1=Almost never to 5= Almost Always.

Analysis/Results: Demographic data from the questionnaire was analyzed using descriptive statistics. Independent t-test and ANOVA were utilized to determine the differences between the demographic categories and the perception of coaching leadership questions. Athletes reported a mean of 4.02 for Question 1. "Coach to the level of the athletes." "Athletes reported a mean of 3.67 for Question 6. "Disregard athletes' fears and dissatisfactions."

Athletes reported a mean of 3.67 for Question 8. "Clarify goals and the paths to reach goals for athletes." Athletes reported a mean of 4.02 for Question 11. "Use alternative methods when the efforts of athletes are not working well in practice or competition". Independent t-test revealed that Males scored higher than females in regards to Question #11, Use alternative methods when the efforts of athletes are not working well in practice or competition ($t = 175$, $p = .05$), and Question 30, To get approval from the athlete on important matters before going ahead. ($t = 1.86$, $p = .05$). Analysis of variance revealed that Sophomores and Juniors scored higher than Freshmen and Seniors in regards to Question #12, Let the athletes try their own way even if they make mistakes. ($F = 6.19$, $p = .00$) and Question #14, See the merits of athletes' ideas when different from the coach's ($F = 2.45$, $p = .05$).

Conclusions: Results from this study are similar to others in that there was a significant difference between gender and classification and their coaching of perception leadership. However, more studies are needed among historically black colleges and universities. Recommendations are made to further examine the perception of leadership among African American college student athletes.

Physical Education Preservice Teachers' Perceptions on Assessment

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Background/Purpose: Evidence suggests that assessment is an underutilized component of physical education teachers' teaching practice (DinanThompson & Penney, 2015). Using the lens of occupational socialization theory (Richards & Gaudreault, 2017; Templin & Schempp, 1989), this can be seen as a product of the way in which they were socialized to view physical education, particularly in relation to their own acculturation experiences in which assessment was not emphasized (Starck et al., 2018). Physical education teacher education (PETE) can be viewed as an intervention to help preservice teachers develop assessment literacy (Hay & Penny, 2013). The purpose of the current study was to understand preservice physical education teachers' perspectives on assessment as they near the end of their teacher education program.

Method: Participants included 41 preservice physical education teachers (XX males, XX females) enrolled in PETE programs at four large universities from the southeast region of the United States. This study used a sequential explanatory design (Creswell et al., 2003) in which all participants were asked to complete a cross-sectional online survey and then participate in follow-up interviews to expand upon beliefs captured through the survey. The survey included a brief demographic questionnaire, the Value Orientations Inventory (Ennis & Chen, 1993), and the abridged Teachers' Conceptions of Assessment III (Brown, 2006). Follow-up interviews were conducted following the completion of the survey.

Analysis/Results: Quantitative data was analyzed descriptively (Tabachnick & Fidell, 2013) whereas qualitative data were analyzed using standard interpretive procedures (Patton, 2015). Data sources were then compared in order to triangulate qualitative and quantitative information (Strauss & Corbin, 2015). Quantitative results revealed that students rated assessment as important in relation to (a) influencing instructional decisions, (b) informing about student learning and progress, and (c) helping inform students about their progress. These perceptions were reinforced through interview data. Interview data also revealed, however, that while students were able to explain the need for reflection, they had a difficult time understanding how to and providing examples of assessment in practice. Preservice teachers also noted many schools in which they had completed field experiences were not receptive to assessment practices outside of mandated fitness testing.

Conclusions: Preservice teachers in this study demonstrated there is a clear positive and enthusiastic attitude toward assessment as they conclude their teacher education preparation. These positive attitudes did not, however, translate into practice as the students noted a clear disconnect between PETE programming and actual in-field application. Qualitative interview data indicate that this disconnect is likely related to a lack of experience with quality assessment practices during their own formative physical education experiences, paired with the little in-field modeling of quality assessment practices during PETE (Dinan-Thompson & Penney, 2015; Starck et al., 2018). These results draw attention to the need for PETE faculty to provide a variety of field-based learning experiences while also creating a culture in which preservice teachers are encouraged to reflect upon and critique the subjective theories of physical education they develop through acculturation (Richards et al., 2018).

Reexamining Motivational Differences With SDT Utilizing Educational and Economic Variables for Spectators of Auto-Racing Sport

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Background/Purpose: Self-determination theory (SDT) has been widely applied to identify individual motives in sport with components of competence, relatedness, and autonomy. However, research in this direction might ignore application of spectator motivation in auto-racing sport that was the largest fan attendance for a single sport event in America (Humphrey & Ruseski, 2009). Given the variables of educational and economic statuses of the spectators, research attention needs to be extended to examine spectator motives in sport events with the SDT key components specified into related factors. What are motivational factors related to SDT components for the auto-racing spectators who have discrepant economic statuses? Do educational levels make differences of their motives to attend auto-racing competitions? The purpose of this study was to examine motivational differences among the spectators with various social economic statuses and educational levels.

Method: An event survey was administered during a set of auto-racing competitions in the east coast of the United States. The Inventory of Motivation for Auto-racing Sport (Chen, 2012) was utilized, including five specified factors relating to SDT key components (Affiliation, Experience, Gratification, Socialization, Substance), to test motivational differences. A total of 650 participants were randomly selected and organized into subgroups by educational (high school, 2-year college, 4-year college, graduate degrees) and economic statuses (lower, lower-middle, middle, higher middle, and high incomes).

Analysis/Results: Statistics of MANOVA explored a significant difference ($\Lambda = 9.45, p < .01$) on the economic statuses and follow-up post hoc Scheffe test with significant differences ($F = 3.89, p < .01$) on the factors of Socialization and Substance ($F = 3.90, p < .01$). The spectators with lower economic statuses ($M = 5.10$) scored higher than lower-middle, middle, and higher middle economic groups who scored higher than the group with higher economic status ($M = 5.11$) on the Socialization. However, all four lower economic groups ($M_s = 4.70, 4.72, 4.71, 4.85$) scored higher than the higher economic group ($M = 4.20$) on Substance.

MANOVA also revealed a significant ($\Lambda = .96$, $p < .01$) difference on educational variable. Follow-up post hoc Scheffe test indicated significant ($F = 4.52$, $p < .01$) differences. The groups of graduate degree ($M = 6.15$), 4-year college degree ($M = 6.00$), 2-year college degree ($M = 5.85$) were significantly ($p < .05$) higher than the participants of high school education ($M = 5.00$) on the factor of Gratification.

Conclusions: The researchers concluded that a lower education level perceived a lower gratification of spectator motive to attend auto-racing competition. However, higher educational level demonstrated higher spectator motive to attend the events for Socialization. The higher the economic status, the lower the motive would be for the spectators to seek for material benefits (substance). The findings also provided auto-racing management a quantitative data to make marketing decisions as well as to create incentive packages for auto racing spectators according to their educational and economic statuses based on their self-determined motives.

Remove Social Media: Enhancing Interpersonal Connections Through Experiential Experiences

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Background/Purpose: People, especially millennials, are consuming extensive use of technology in daily life. Ease of access makes it obscenely simple to be connected everywhere. In watching individuals walking almost anywhere, their head is down and their fingers flying as they “talk” to someone – yet somebody may be walking immediately next to them. Social media is often the main source of news and information (American Press Institute, 2015). The International Center for Media & the Public Agenda (ICMPA) observed that US students found it amazingly difficult to go 24 hours without use of technology (“The world unplugged”, 2010), and Eyal (2014) even uses the term “addiction” in regards to the use of technology. Immediate access to technology is the norm, not having a Smart Phone is cause for people to look at you in askance: are you from the 21st Century; and how do you exist? In addition, recent studies are questioning a link between social isolation and the prevalence of technology (Allen, 2018; Malloy, 2017; Gonchar, 2016). The purpose of this study was to examine if the absence of technology (more specifically social media) would enhance the experience of undergraduate students in regards to interpersonal connections with their peers and experiential learning.

Method: This is a qualitative study in which undergraduate students were interviewed following a January term class. All students were invited to participate; ten of the possible 28 agreed to be interviewed. The sample was representative of the population at the mid-sized liberal arts institution.

Participants completed one in-person interview after completion of the course. The interviewer asked open-ended questions about the impact disconnection from technology had on the interpersonal connection with their peers. The interviews were then analyzed using coding to identify the main themes of participants’ experiences.

Analysis/Results: Each student responded that not having constant access to technology, especially social media, provided them with the opportunity to make deeper and meaningful connections with their peers. In addition, each student felt more profound learning occurred. Students paid attention to their physical surroundings and verbally participated in class discussion more than they had previously. Active participation in the debriefing process leads to more engagement; more engagement leads to more retention of knowledge. These connections assist in making class more meaningful.

Many of the students discussed how the absence of technology allowed them freedom, and provided an overarching sense of “calm” and allowed multi-faceted and better self-reflection. Each student mentioned the lack of technology created a more stress-free environment, and allowed them the opportunity to “just be” and interact with peers with whom they probably would not have associated with on the home campus: hippies and athletes; nerds with tree huggers; anyone with everyone.

Conclusions: The findings of this study indicate that separation from technology plays a crucial role in deepening interpersonal connections to peers. However, technology makes it easy to become distracted and spend hours using all forms of social media. With the plethora of recent studies investigating social loneliness and excessive technology/internet/Smart Phone use, addressing this concern is critical.

Role Responsibilities of PETE Professors in Master and Doctoral Institutions

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Background/Purpose: The purpose of this study was to investigate the organizational role responsibilities within universities that promoted successful achievement of promotion. Twenty-five full professors at Doctoral Granting/Master Level Institutions in Physical Education Teacher Education were interviewed.

Method: Methodological rigor was applied through the lens of Miles and Huberman's (1994) four-stage process for data analysis with the corresponding transcriptions. Curriculum vitae were also collected in order to aid triangulation.

Analysis/Results: As assistant professors, participants at Doctoral Institutions had 1.98 publications a year, 3.13 presentations a year, published .92 books, taught 15.69 credit hours a year, and engaged in service through reviewing papers, being on university committees, and being involved in state organizations. Participants explained that a need to garner a national reputation was needed in order for promotion. As associate professor participants at Doctoral Institutions had 1.89 publications a year, 2.80 presentations a year, published 2.40 books, taught 15.11 credit hours a year, and engaged in service through becoming associate/head editors of journals, being on university committees, and involved in national organizations. At Master Institutions participants had 1.30 publications a year, 2.23 presentations a year, published 0.10 books, taught 32.44 credit hours a year, and engaged in service through being involved in state organizations and on university committees. Participants explained a need to conduct accreditation reports and teach well in order to be promoted. As associate professors participants at Master Institutions had 1.05 publications a year, 2.01 presentations a year, published 0.5 books, taught 33.65 credit hours a year, and engaged in service through being involved in state organizations and university committees.

Conclusions: There is a difference between Doctoral Institutions and Master Institutions role responsibility, as Doctoral Institutions have to publish more, garner a national reputation, expected to undertake leadership for journals and national organizations, and teach a moderate class load. However, at Master Institutions participants expressed conducting accreditation reports and excellent teaching for being salient in order to be promoted.

Sport Specialization: A Survey of Collegiate and Professional Athletes

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Background/Purpose: In prior decades, young athletes participated in whatever sport was "in-season". Children were encouraged to be involved in sport and to participate in a variety of different activities, develop a wide range of skills and to have fun. Most young athletes chose sports that their friends were playing (Anshel, 2012). Benefits of multi-sport participation include increased self-esteem, leadership and relationships with teammates (Difiori, Benjamin, Drenner, Gregory, Jaanthi, Landry and Luke, 2014). Often, if young athletes chose not to play a particular sport, it was their choice (Anshel, 2012).

Currently, large numbers of young athletes specialize in one sport on a year round basis. Youth sport competitiveness is on the increase, resulting in more competitions for younger athletes (Difiori et. al., 2014). One may ask why this change over the last several decades? Is it for the "love-of-the-game" or is it because athletes and parents pressure their children in hopes for more future benefit? And does it occur as they become teenagers?

Method: After obtaining approval from the IRB, head coaches of NCAA Division I, II, III varsity sport programs (n = 890, 3 professional teams) were sent an email that included a request that the survey link be forwarded to the athletes on their roster. The varsity sport programs included all male and female sports sponsored by the institutions. In addition, an email was sent to several professional team and player organizations.

Participants were requested to provide certain demographic information regarding their gender, sport and collegiate level. Each athlete was provided a weblink to the survey instrument, which was distributed through SNAP technology. The instrument consisted of a single survey.

Analysis/Results: A total of 2246 responses (672 males, 1559 females, 1 transgender) were received. Up to age 12, the average participant was involved with an average of 3.86+/-1.03 sports, but this diminished to 3.41 +/-0.96 (t=20.29, p=0.00) demonstrating a significant decline in sport involvement. Regardless of when the participants decided to specialize, 57.8% specialized due to a love for the sport selected. Only 6.3% specialized due to coaching pressure and another 10.7% specialized due to parental influence.

Conclusions: Although a growing trend exists to specialize in a sport, this trend remains as a desire on the part of the participant rather than external influences. This agrees with a prior study (Anshel, 2012). A significant difference existed in the number of sports played between the ages of 12 and 13 indicating that

age is a pivotal year of influence on young athlete's decisions on specialization.

Teacher Perspectives on the Tennessee Student Growth Measures in Physical Education

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Background/Purpose: Tennessee (TN) is one of just a few states in the US that has implemented a teacher evaluation assessment protocol to measure student growth in elementary physical education. Testing a formerly “nontested” content area is groundbreaking, and research should be on-going to evaluate the implementation. From the results, possible adjustments can occur to better serve the learner, the teacher, and the physical education program. Research has indicated that teachers who are satisfied with their use of time are more likely to stay teaching (Wirt et al., 2005). Evaluation procedures can be time consuming. However, teachers are more likely to stay in their schools if they believe they are being supported and provided quality feedback regarding their instruction (Johnson & Birkeland, 2003). Over the past several years, tested content areas (e.g., Language Arts, Math, Science) have used research to refine their assessments to be more valid and reliable. Therefore, we have a duty to polish and perfect the new Student Growth Measures protocols for physical education to maintain high quality teachers.

Method: This study employed a mixed method design due to the collection of survey data which will include quantitative results and responses to open ended questions during the focus group (Qualitative). Participants included 19 physical education teachers from the West Tennessee area. Each participant provided consent prior to participation. An electronic survey designed to obtain feedback regarding the student growth measures system was sent to all participants. Once surveys were collected, two focus group sessions occurred during an inservice for all physical education teachers. Participants were asked a variety of questions and asked to discuss as a group. The group interviews were 60 in duration and were video-taped and audio-taped.

Analysis/Results: Survey data was analyzed to obtain demographic information. Open ended questions as well as the focus group interviews were transcribed for analysis. Researchers read the transcriptions to determine common key words and themes. The

following themes resulted from the data: 1) feedback is needed, 2) video evidence supports instruction and student learning, 3) too time consuming. Participants were disappointed that scores were not accompanied by specific feedback. If lower scores were to be given, then feedback should be provided to allow for improvement. Participants did appreciate having video evidence to provide students with feedback and to display student growth to administration. Finally, participants believed the portfolio system required too much time for completion. With busy schedules and limited time with students, quality instruction time was lost.

Conclusions: Results show that teachers believe the intent of the Student Growth Measures portfolio is good and can provide some potential benefits to teachers. However, adjustments should occur to better support teachers, students, and the PE program. It is the duty of state leaders to improve the portfolio system to help maintain high quality PE teachers.

The Influence of a Research Master's Degree on Two Young Professionals' Careers

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Background/Purpose: Graduate student socialization has been studied in the general education literature for several years (Gardner, 2008; Tierney, 1997) and has recently received additional attention in the physical education literature (Lee & Curtner-Smith, 2011; Richards et al., 2017). Most of this work has, however, focused on the experiences of PhD students, and comparatively less attention has been given to students studying in master's degree programs (Richards et al., in press). Even less is known about the influence of graduate education on physical education teachers and teacher educators' beliefs. Grounded in occupational socialization theory (Templin & Schempp, 1989), the purpose of this study was to understand the influence of a research-focused master's degree program on the beliefs and behaviors of two recent program graduates, Tori and Ryan, the two years immediately following their graduation.

Method: Tori and Ryan were purposefully recruited to participate in this study (Patton, 2015). Both graduated from the same research-focused master's degree

program in physical education teacher education at a large, public university in the US Southeast. They had been in a romantic relationship for several years and were married before the start of the current study. Data collection began the summer after the master's program concluded and spanned two years. Semi-structured focus group interviews ($n = 6$) and responses to open-ended prompts in an online discussion board ($n = 8$) constituted the dataset for this study.

Analysis/Results: Data were analyzed by two members of the research team adhering to the collaborative qualitative analysis process outlined by Richards and Hemphill (2017). After completing his master's degree Ryan stayed at the same university to work toward a PhD whereas Tori found a job teaching physical education at a local middle school. Even though they took different paths both Tori and Ryan discussed the importance of their master's degree work in informing their practice. Ryan discuss how the master's degree gave him the skillset needed to succeed in a PhD program, particularly in relation to reading and writing research. Tori, on the other hand, drew regularly from what she learned in her master's program in her own teaching. Nevertheless, Tori struggled to work in a school that did not value physical education and Ryan continued to cope with imposter syndrome related to his place in academia. Their relationship helped them to work through some of these struggles by providing a meaningful platform to discuss the intersection of research and practice in one another's work.

Conclusions: Results indicate that Tori and Ryan's socialization through the master's degree program influenced their respective beliefs and behaviors, albeit in different ways. This finding aligns with prior research which has highlighted the potency of socialization during graduate degree programs (Lee & Curtner-Smith, 2011). Master's degree programs can, therefore, be conceptualized as both preparation for doctoral education as well as effective avenues for continued teacher education (Richards et al., in press). Future research should continue to examine the influence of physical education master's degree programs in helping individuals make the transition into their careers.

The Relationship Between Coaching Behaviors, Relation-Inferred Self-Efficacy (RISE), and Self-Efficacy in High School Male Sports

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Background/Purpose: Athletes' perceptions of how coaches view their abilities (RISE) is derived from verbal and nonverbal interactions. The purpose of this research was to investigate the impact of coaching behaviors on high school male student-athletes' levels of self-efficacy and relation-inferred self-efficacy (RISE).

Method: Phase 1 consisted of compiling a list of coaching behaviors, organizing them into themes and putting them through an expert review which evaluated the clarity, content relevance, and representativeness of the coaching behavior items. From this information, a RISE-relevant behavior measure was developed in Phase 2 where student-athletes ($n = 319$) completed a questionnaire to determine what coaching behaviors are most relevant and effective in enhancing RISE perceptions for a high school male student-athlete. In Phase 3, student-athletes ($n = 360$) completed questionnaires designed to measure the relationship between perceptions of RISE-relevant coaching behaviors, RISE, and self-efficacy

Analysis/Results: Following the expert review, Phase 1 identified 29 coaching behaviors. Principal components analysis in Phase 2 revealed 12 coaching behaviors to be most effective at conveying information that high school male student-athletes use to inform their RISE beliefs. In Phase 3 all of the variables were positively correlated, and RISE was found to mediate the relationship between coaching behavior and self-efficacy.

Conclusions: The frequency of RISE-relevant coaching behaviors revealed positive associations with student-athletes' RISE and self-efficacy beliefs, supporting the notion of coaching behaviors working through RISE as a complementary pathway in predicting self-efficacy in high school male student-athletes. Information from this study will allow coaches to better understand how their own coaching behaviors are perceived by the student-athletes they coach and specifically how those behaviors impact a student-athletes level of self-efficacy.

The Role of the Coach in Talent Development of High School Athletes

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Background/Purpose: Coaches can play a central role in the development of athletic talent in athletes (Wolfenden & Holt, 2005). While there is not one right way to develop talent that will fit every athlete,

there are guiding principles for coaches in their decision-making, coaching behavior, and design of practice and competitive experiences. Coaches need to recognize that they can play a significant role in determining whether an athlete reaches his or her full athletic potential and continues to participate and enjoy their sport experience (Chase & DiSanti, 2016). The purpose of this study was to examine from the coaches' perspective how they view their role in talent development of high school athletes. Three models of talent development most prominent in the literature, including the Theory of Deliberate Practice (Ericsson, Krampe, & Tesch-Romer, 1993), the Developmental Model of Sport Participation (Côté, 1999), and the Long-Term Athletic Developmental Model (Balyi & Hamilton, 2004) are outlined in this presentation. Focusing mainly on the Developmental Model of Sport Participation (DMSP) as the conceptual foundation for this study, comparisons are made between recommendations provided by the DMSP and coaches in this study.

Method: Purposive sampling was used to select participant coaches with experience in coaching high school athletes. Five high school coaches from different high school sports (e.g., volleyball, football, basketball, soccer, and cross country) were interviewed. Coaches were female and males, with at least five years of coaching experience. Using a structured interview guide, questions focused on perceptions and methods to develop talent in high school athletes, with specific probes in their views on providing off-season training, specialization in sport, and recommended coaching strategies. Each interview was recorded and lasted an average of one hour.

Analysis/Results: All interviews were transcribed and coded for overarching common themes. Researchers immersed in the data and continued to group responses into common themes until consensus was reached. Results indicated coaches perceived a need for extensive off-season training, did not favor sport specialization, however they believed all their competitors were encouraging sport specializing to reach athletic potential. All the coaches discussed changes in the high school sport experience, the potential for negative parent involvement, and risk of burnout in athletes. Raw data quotes are presented to highlight and illustrate the common themes. Coaches generally agreed with the tenets of the DMSP.

Conclusions: High school coaches face many different roles in and out of their competitive season. It was clear from the results of this study that coaches feel pressure to develop their athletes, especially athletes with a lot of athletic talent. Discussion focuses on applied implications

for coaches and future research ideas that include the role of parents and their interaction with coaches in talent development.

The World Best Performance Trends in Track and Field Events From 1900 to 2017: A Nonlinear Regression Analysis

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Background/Purpose: Pursuing better athletic performance and seeking new world records in track and field events have always been hot topics for athletes and coaches. Scientists have been studying human limitation to explore what are the trends on running, jumping, and throwing events in the 20th century. However, there have been lack researches to study the new development of the athletes' best performance in the new century. The purpose of this research is to study the trend of the best performances in track and field and examine whether the nonlinear regression model can still be used in the best performance trend description and prediction in the 21st century.

Method: A nonlinear regression analysis was conducted in this study. The data of running, jumping, and throwing best yearly performance from 1900 to 2017 were collected from IAAF (International Association of Athletics Federations) and Track and Field News. The annual best performance data were selected from Jan 1st to Dec 31st in each year. The nonlinear regression models were applied to fit best yearly performance data (1900-2017) of each event (Men and Women's 100m, 200m, 400m, 800m, 1500m, 5000m, 10000m, Marathon, High Jump, Long Jump, Shot Put, and Discus Throw). Additionally, both the men and women's performances were analyzed and compared.

Analysis/Results: For both men's and women's jumping, throwing events, and women's short-distance running events, there were almost three decades no new world record set up and the fitting model showed a leveling trend. In comparing the men and women's performance, when turned to 21st century, most the events showed that the asymptotic line were parallel or close to a horizontal line. It means that the gap between men and women's performance was close to be consistent in this century. Although a few new world records have been set up, the improvement has been minimum.

Conclusions: The research suggests that the nonlinear regression model is not valid to describe the

performance trend in track and field when the horizontal asymptotic level is reached. A new approach, such as weather forecasting model and time series model, should be studied and explored in the 21st century in study of the future performance trend in track and field.

Understanding the Stressors Experienced by New York City Physical Education Teachers

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Background/Purpose: Teaching has been identified as a high stress occupation that is prone to burnout (Lindqvist et al., 2014). In urban areas, this stress is compounded by cultural and linguistic differences between teachers and students (Bauml et al., 2016). Urban physical educators are particularly impacted by contextual factors such as large classes, small spaces, and subject marginalization (Henninger, 2007). Teacher resilience can, however, help teachers to survive and thrive in challenging contexts (Eillison & Woods, 2016). Grounded in occupational socialization theory (Templin & Schempp, 1989), the purpose of this study was to understand the unique challenges and stressors faced by physical educators in New York City and how the teachers coped with these stressors.

Method: This interview study (Hatch, 2003) adopted a social-constructivist epistemology to understand teachers' perspectives on their experiences teaching in New York City schools (Kamberelis & Dimitriadis, 2005). Participants included 34 inservice physical education teachers (26 males, 8 females), over half of whom ($n = 18$; 52.90%) were Caucasian. Participants taught across elementary ($n = 10$; 29.40%) and secondary ($n = 25$; 70.60%) schools, were on average 39.64 years old ($SD = 9.63$) and had been teaching for 13.64 years ($SD = 8.30$). Data were collected using in-depth, semi-structured telephone interviews (Patton, 2015) that lasted between 45 and 75 minutes and were audio recorded and transcribed for analysis.

Analysis/Results: Data were analyzed by two members of the research team using the collaborative qualitative analysis method described by Richards & Hemphill (2017). The data analysis resulted in the construction

of themes that captured workplace stressors experienced by the New York City physical educators as well as how they were able to cope with these stressors. The teachers specifically expressed frustration with *limited facilities and equipment* given that many of them did not have adequate gym space and had to share facilities with teachers in other schools. The extreme *cultural and linguistic diversity* challenged many of the teachers. *Subject marginalization* was another common theme across the interviews and continued despite attempts by the city department of education to provide additional funding and resources for physical education. While some teachers expressed *feelings of burnout*, others discussed how relationships with colleagues and students as well as the personal accomplishment they derived from their work, helped them to *develop resilience* and persist through stress.

Conclusions: The results of this study highlight some of the ways in which New York city physical educators' experiences mirror those communicated by physical education teachers in other contexts and localities (e.g., Richards et al., 2018). Nevertheless, the teachers also expressed some unique stressors related to contextual challenges. Some of these challenges, such as linguistic and cultural diversity, maybe become more pronounced in other contexts as schools in the U.S. continue to diversify (Flory, 2016). Teacher education programs should, therefore, focus on helping preservice teachers develop the cultural competence needed to teach students across a variety of contexts (Bauml et al., 2016), and the resilience needed to persist through stress (Mansfield et al., 2016).

Urban Middle School Physical Education Teachers' Attitudes Toward Fitness Testing and Students' Performance on Fitness Tests

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Background/Purpose: Quality physical education is important to adolescent health and physical well-being. For urban schools, contextual and environmental constraints often make school-based physical education challenging. A good fitness testing program has the potential to promote physical activity and fitness. Attitude theory posits that attitude influences how teachers do their work. There is no published research, however, that has examined the relationships between teachers' attitudes and students' performance on fitness tests. The purpose of this study was to investigate the attitudes of urban middle school physical

education teachers toward physical fitness tests and their relationship with student performance on fitness tests.

Method: Middle school teachers ($N = 74$) were recruited from urban school districts on the east and west coasts of the United States. They completed the Physical Education Teacher Attitudes toward Fitness Tests instrument (Keating & Silverman, 2004) whose scores have been validated and also provided demographic information about them and their school. After receiving approval from their school district, the most recent year's FitnessGram® scores were obtained for each teacher. Data were analyzed using descriptive statistics for overall teacher attitude and teacher attitude subdomains and correlational statistics to examine the relationship between each component of teacher attitude (overall, affective, and cognitive) and the percentage of students in the Healthy Fitness Zone (HFZ) on various components of the FitnessGram®. Correlations also were examined by various teacher demographic variables and for boys and girls. Univariate and multivariate analyses were conducted to examine the differences in fitness tests performance variables by demographic and profession-related variables.

Analysis/Results: Teachers' overall attitudes toward fitness testing were just higher than neutral, signaling positive attitudes ($M = 4.37$, $SD = 17.75$). Attitude mean scores for subdomains of cognitive ($M = 4.25$, $SD = 7.95$) and affective ($M = 4.44$, $SD = 11.09$) were also positive. Male teachers had more favorable attitudes than female teachers, but no significant demographic or professional-related variable differences were found for teachers' overall, affective, and cognitive attitudes. Among the findings, the affective subdomain of teachers' attitude on the enjoyment of using fitness tests results was found to have a significant positive relationship with the percentage of students in the HFZ for the push-up test. Additional significant positive relationships between the percentage of students in the HFZ on the push-up test and the percentage of students in HFZ for the curl-up and pacer tests and various components of attitude were also found for girls, but not for boys.

Conclusions: The findings suggest that teachers' affective attitude may have a relationship with students' performance on fitness tests and that relationships may be different for boys and girls. The relationships for teachers' attitude toward enjoyment of using fitness tests results suggests teachers may use them to design activities and lessons that lead students to engage in more physical activity and thus improve their levels of fitness, to include muscular strength, aerobic capacity, and flexibility.

Using Visual Methodologies to Exploring Student and Teacher Voice

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Background/Purpose: Physical education research has experienced a significant growth in the use of participatory visual methods to facilitate individuals in finding their own voices to share “what they know and help them put words to their ideas and share understandings of their worlds, thereby giving participants more control over the research process” (Enright & O’Sullivan 2012, p. 36). One reason for this growth is the value gained with insight into participants’ voices as they speak meaningfully about their experiences and ways of knowing. The purpose of this study was to explore the potential of using participatory visual methods as a pedagogical and methodological tool to facilitate physical education professional learning.

Method: This study examined a combined analysis of data from five visual research projects. In the first project, children ($N=38$) and their teachers ($N=2$) used photo reflection diaries to understand teaching and learning in elementary physical education. In the second project, teacher candidates ($N=15$) took photos reflecting meaningful moments during their 18 week student teaching experience. In the third project, teacher candidates ($N=12$) used visual methods to explore the impact of professional conference attendance. The fourth project involved experienced teachers ($N=4$) using participatory visual methods to facilitate their articulation of change. In the final project, teacher educators ($N=5$) used visual methods in a collaborative self-study to reflect on communication in their PETE courses. In all projects, visual methods served as a pedagogical and methodological tool to examine participant learning.

Analysis/Results: To analyze the combined dataset, open, axial, and selective coding (Corbin & Strauss, 2008) were used for interview transcripts and photographs were analyzed using a reflexive approach (Pink, 2007). Four themes reflect aspects of learning represented through visual methods: a) articulation, b) scaffolding, c) deeper learning, and d) engagement. First, visual methods provided participants a way to document their experiences and articulate their learning, allowing for recall and conversation. Second, when used on a regular basis, visual

methods allowed participants to scaffold their learning from one point in time to the next, providing a baseline for their learning upon which additional insights and introspection were built. Third, the process provided for deeper learning. It allowed participants to 'step back' and look with a different lens, revealing the richness of their learning experience. Finally, visual methods provided a meaningful and enjoyable way for participants to engage. While they were aware the focus of the task was on their learning, the novelty of using cameras combined with the self-directed nature of the task resulted in the process becoming a teaching and learning process rather than as an assessment of their performances.

Conclusions: Participatory visual research provided innovative opportunities for engaging participants in their own learning and researching the process, allowing them to represent their experiences authentically (Pope, 2010) and positioning their perspectives centrally in the research process. The process allowed the access to the complexity and richness of participant's perspectives not possible with conventional data collection methods.

Teaching and Learning

A Cross-Sectional Study of the Changes in Content Knowledge From Freshmen to Juniors in China

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Background/Purpose: Content knowledge consists of common content knowledge (CCK) and specialized content knowledge (SCK). CCK refers to the knowledge of rules, etiquette, technique and tactics. One way to assess CCK is to use a knowledge test (CCK-T; He et al., 2018). The CCK of teachers can also be observed in their demonstrations of motor skills and thus evaluating the performance of teachers (CCK-P) is an important assessment in teacher education. SCK is knowledge about how to teach CCK. Studies of SCK, have shown that it is not easily obtained from experience and needs to be specifically taught (Ward, et al., 2017; Tsuda et al., 2016). The purpose of this study was to examine how preservice teachers' CCK-T, CCK-P and SCK changed before and after physical education teacher education (PETE) coursework.

Method: A cross-sectional design was used to evaluate the CCK-T, CCK-P and SCK of beginning freshman and at the end of the junior year which represents the

end of formal coursework. Participants were 356 preservice teachers from seven universities. 72.8% (259) were freshmen and 27.2% (97) juniors who were soccer majors. Juniors were grouped according to the duration of hours spent in their major. Four Universities (u_1, u_2, u_4, u_6) trained their majors for 288 hours, one for 360 hours (u_3), one for 396 hours (u_5) with only CCK-P data, and one for 468 hours (u_7). CCK-T was measured using a 27-question validated soccer test for physical education teacher (He et al., 2017) requiring a 60% correct pass rate. CCK-P assessed dribbling, passing, receiving and defensive skills. A score of 75% was considered a pass. SCK was assessed using content maps (Ward et al., 2017) and the tasks coded using Rink's (1979) content development categories.

Analysis/Results: Mann-Whitney U tests were run to comparing changes from freshmen to juniors' on CCK-T, CCK-P and SCK for each university. Results showed that PETE training in 5 universities had a significant effect on preservice teachers' CCK-T, with passing rate, $u_2=90\%$, $u_3=81.8\%$, $u_7=76.9\%$, $u_6=69.2\%$, $u_1=60\%$ ($M_{u_2} = 20.6 \pm 3.17$, $p < 0.001$; $M_{u_3} = 18.73 \pm 4.38$, $p < 0.001$; $M_{u_7} = 18.15 \pm 1.86$, $p < 0.001$; $M_{u_6} = 17.46 \pm 3.46$, $p < 0.001$; $M_{u_1} = 17.10 \pm 3.29$; $p = 0.025$), and one had no significant difference ($u_4=35.7\%$, $M_{u_4} = 16.36 \pm 4.96$, $p = 0.790$). Data showed that all universities had a significant difference ($p < .001$) between freshmen and juniors in CCK-P, however there was variability among the different universities: u_1 & $u_7=100\%$ ($M_{u_1} = 62.10 \pm 3.17$, $M_{u_7} = 62.77 \pm 3.70$); $u_2=90\%$ ($M_{u_2} = 59.10 \pm 3.87$) the others were at 55% ($M_{u_3} = 55.00 \pm 5.16$, $M_{u_4} = 54.14 \pm 4.45$; $M_{u_5} = 55.50 \pm 4.95$; $M_{u_6} = 53.46 \pm 3.82$). Six universities had significant differences between freshmen and juniors in SCK, with passing rates at $u_1=35\%$, $u_4=14.3\%$; $u_2=20\%$, $u_3=9.1\%$, $u_7=23.1\%$ ($M_{u_1} = 2.93 \pm 1.98$, $p < .001$; $M_{u_4} = 2.36 \pm .67$, $p < .001$; $M_{u_7} = 1.55 \pm 1.43$, $p < .001$; $M_{u_2} = 1.28 \pm 1.33$, $p = .005$; $M_{u_3} = 2.54 \pm 1.60$, $p = .023$), one had no significant difference with passing rate at $u_6=23.17\%$ ($M_{u_6} = 1.77 \pm 1.27$, $p = .399$).

Conclusions: The effectiveness of training of content knowledge in these universities depends not on the number of hours, but we hypothesize that it is the quality of instruction.

A Scoping Review of Physical Education Teacher Socialization Research Between 1979 and 2015

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Background/Purpose: Occupational socialization theory includes all experiences that influence individuals to enter physical education and that are responsible for their perceptions and actions as teachers (Lawson, 1986). Socialization is viewed as a dialectical process that accounts for individual agency (Schempp & Graber, 1992) and is typically represented across the three interrelated phases of acculturation, professional socialization, and organizational socialization (Richards et al., 2014). Given that teachers are central to understanding student and school success (Day et al., 2007), it is important to understand how socialization influences their beliefs and behaviors. This study, therefore, adopted a scoping review methodology and sought to identify, categorize, and descriptively and thematically review research related physical education teacher socialization published in English-language journals between 1979 and 2015.

Method: The researchers adopted a scoping literature review methodology (Arksey & O'Malley, 2005) that was guided by the following five phases: (a) setting boundaries for the review; (b) identifying relevant studies; (c) selecting studies; (d) charting the data; and (e) collating, summarizing, and reporting results. Based on established inclusion and exclusion criteria (e.g., English-language studies related specifically to physical education socialization that reported primary data), 111 articles were identified by searching online databases, manually searching journals, reviewing the reference lists of articles already identified, and reviewing the curricula vitae of authors who regularly published socialization research. Data from each article were extracted and input into an electronic database in preparation for analysis.

Analysis/Results: The descriptive review provided a quantitative overview of key components of the articles, whereas the thematic review provided a qualitative overview of study results using inductive analysis (Patton, 2015) and the constant comparison (Lincoln & Guba, 1985). The 111 teacher socialization studies were published across 28 journals and included 143 contributing authors (76 male, 67 female). Over half of the studies were conducted in the US. Organizational socialization ($n = 50$) and professional socialization ($n = 44$) were studied more often than acculturation ($n = 10$), and only seven studies spanned across phases. Results of the thematic review were classified by socialization phase, and indicate that recruits develop subjective theories of PE during acculturation, often emphasizing traditional methodologies. Teacher education programs must then overcome initial beliefs, while preparing preservice teachers for life in schools. School culture plays a significant role in either supporting

effective practices, or reinforcing the traditional methodologies.

Conclusions: This scoping review illustrates avenues for future research that have implications for physical education and broader field of education. In particular, there is a need to study the experiences of adapted physical educators and elementary classroom teachers who are often tasked with teaching physical education. Comparative socialization research that seeks to understand the experiences that lead prospective recruits to major in other disciplines, such as exercise science, rather than physical education is also warranted. Finally, socialization is responsive to cultural and social norms, and must be studied, so researchers and practitioners should not assume that results of studies from several decades ago are still relevant to the teachers of today.

Adapting: A Study of Implementing Adaptive Personalized Instruction, Innovation, and Technology From an Instructor's Perspective

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Background/Purpose: As time transforms education, methodology also needs to adapt to course instruction. However, there is a challenge to be effective while also meeting each individual student's learning needs. Through innovation and exploration of instructional approach, student learning can be enhanced by the unending pursuit of quality instruction. Through this study, the process of adaptive learning and innovation is examined through the perceptions and concerns of a university instructor. With the exploration of The Concerns Based Adoption Model and surveying the instructor's stages of concern and levels of use, this study will provide data on an instructor's willingness to modify course delivery to better serve students individually.

Method: This study employed a case study approach due to the data being from a selected class, highlighting the perceptions of one faculty member and their view of adaptive learning. Data was collected quantitatively using a Stages of Concern Questionnaire (SoCQ), a well-used tool for evaluating faculty concerns about the implementation of adaptive learning. Qualitative data was collected using Levels of Use (LoU) protocol which examines the behaviors and actions of the teacher as they implemented research based practice.

Before beginning the study, an SoCQ was sent to the participant, as well as an interview following LoU Protocol. The same was done for a post-course assessment to compare the views of the participant from before and after the course. The SoCQ provided percentiles from the preand-post test results for each stage to determine change that occurred in the participant. The LoU interviews were transcribed and analyzed to provide support to the results of the SoCQ.

Analysis/Results: The SoCQ included 7 stages with percentages included for pre/post results; 0-Unconcerned (81/81), 1-Informational (37/76), 2-Personal (28/72), 3-Management (15/56), 4-Consequence (11/48), 5-Collaboration (7/28), & 6-Refocusing (3/57). These findings indicate that the participant experienced the following: An increase in wanting to more about adaptive learning (Stage 1); developed a stronger curiosity for adaptive learning (Stage 2); was more concerned about the management, time, and logistics for delivering content using adaptive learning (Stage 3); developed a concern for the consequences that adaptive learning had on their students (Stage 4); and is interested in ideas and ways to improve their use of adaptive learning (Stage 6).

Conclusions: Results show that faculty are curious and have a desire to implement adaptive learning into their higher education courses. Implementation does take time, but advancements are possible with proper training and support. Although training could potentially be a barrier for university administration, with appropriate encouragement, motivation, and a desire for quality instruction, adaptive learning could provide faculty with a desired blueprint for higher education instruction. Orientation for using adaptive learning should begin as early as possible to help assist faculty with the process and learning about the correct approach for implementing in their classes. All teachers can implement adaptive technologies and help students succeed in their academic career. Future research in adaptive learning can help organizations better understand the benefits of the approach and how to minimize time devoted to the process.

Adventure Education, Social Skills, and Students With Autistic Spectrum Disorder

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Background/Purpose: Social skill deficits are mentioned as a common feature of autistic spectrum

disorder (ASD) (Task Force on Autism, 2001). There is, however, a distinct lack of evidence-based programs which help foster social skills among this population (Healy & Flynn, 2012). The purpose of this study was to explore the extent to which involvement in adventure education can help foster social development in students with ASD. Specific research questions were: which areas of social thinking were most enhanced through this involvement and in what ways were perceived social skill improvements transferred to other settings outside of physical education.

Method: Ten, male, teenage students aged 13-18, who had a diagnosis of ASD, were participants during a four-week special summer school program. These students attended an ASD Learning Center, situated in a mainstream Irish secondary school. For two successive summers, as part of their physical education program, students took part in three, forty-minute, adventure education classes per week. Quantitative data sources included pre/post social skills assessment using the Autism Social Skill Profile (Bellini & Hopf, 2007), and were analyzed with paired t-tests on SPSS (Statistical Package for the Social Sciences). Qualitative data sources consisted of: daily observations by the teachers, the special needs assistants, and the researcher, pre/post interviews with teachers, and student drawings. Qualitative data were analyzed using two distinct, yet overlapping, processes of analysis derived from a grounded theoretical perspective: open and axial coding (Corbin & Strauss, 2008).

Analysis/Results: Quantitative analysis revealed a significant improvement ($p = .045$) in all social skills measured, identifying “getting the big picture” and “understanding the perspective of others” as areas with particular improvement. Qualitative analysis resulted in four themes regarding the development of social skills: initiation of social interaction, understanding the perspective of others’, outside of PE and an increased student awareness. Initiation improvements referred to the students’ ability to begin initiate language or action for interactions or tasks not considered routine, both of which were evident during trips and school visits. Understanding the perspective of others focuses on improvements made interpreting the motivations, emotions and intents of others. Outside of PE indicates the transferal of social skills to settings outside of physical education. Qualitative analysis also showed that students developed an awareness surrounding the importance of social cognition in the completion of their adventure education tasks. The longitudinal aspect of the study highlights the development of social skills over an extended period, where data showed an improvement between year one and year two.

Conclusions: Adventure education can be effective in developing social skills in students with ASD. Furthermore, social skills developed in a physical education setting, can be transferred to settings outside of physical education. Results also indicate the need for students' with ASD to experience a physical education curriculum that is specific to their needs. The study has shown that the length of the program (consecutive years) had a positive impact on the social skill development of the students. Finally, the adventure program has helped students develop an understanding of social cognition in their daily tasks.

Association Between Bullying Victimization and Physical Education Attendance Among High School Students in the United States

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Background/Purpose: Physical education has been an important venue for helping students achieve the recommended amount of daily vigorous-or moderate-intensity physical activity to improve fitness and potentially body mass index (BMI). However, 52 % of high school students did not attend one or more days of physical education each week in the United States (CDC, 2015). Bullying victimization has been considered to be one of the major contributing factors to this crisis (Tischler & McCaughtry, 2011; O'Connor & Graber, 2014). The purpose of this study was to examine the relationship between bullying victimization and weekly physical education attendance and how this association varied by sex, grade and age among high school students in the United states using data from the 2017 National Youth Risk Behavior Survey (YRBS).

Method: Data were analyzed from the 2017 YRBS for students who responded to a question about bullying on a school property (N=11705). The YRBS is a three-stage cluster-sample design to obtain a nationally representative sample of students in grades 9 through 12 who attend public and private high schools in the 50 United States and the District of Columbia. An independent t-test was conducted to examine the relationship between bullying victimization and physical education attendance. A multivariable general linear model was created to examine whether sex, grade, and age played a role in physical education attendance when victimization occurred.

Analysis/Results: In total, 15% of high school students reported being bullied. An independent t-test showed

that there was a statistically significant difference in physical education attendance between those that were victimized and those that were not ($t=8.556$, $p<0.001$). Additionally, a multiple linear regression revealed that there was a gender difference in physical education among students who were victimized, with girls were less likely to attend physical education than boys ($t=2.290$, $p=.02$). Further, grade also influenced physical education attendance ($t=-2.905$, $p<0.001$), with 9th grade students more likely to attend physical education than 12th grade when victimization occurred. Finally, there was no age difference ($t=1.478$, $p=.14$).

Conclusions: Evidence from this examination suggests that bullying victimization is associated with physical education attendance. Gender and grade differences exist among high school students in the United States. This study provided an initial step toward understanding one of the potential factors for the high absence rate in physical education. Future research should focus on examining the relationship between different forms of bullying and physical education attendance.

Comparison of Preservice Physical Education Teachers' Content Knowledge

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Background/Purpose: Teachers' content knowledge (CK) is a prerequisite for effective teaching. Content knowledge is classified in two areas: a) *Common Content Knowledge* (CCK) and *Specialized Content Knowledge* (SCK). CCK includes knowledge of rules, etiquette, safety, and knowledge of techniques and tactics. SCK includes knowledge of errors, and knowledge of instructional representations and tasks (Ward, 2009). Physical Education Teacher Education (PETE) programs play a major role in improving preservice physical education (PE) teachers' CK in specific content areas. However, the field of PETE lacks studies that demonstrate that preservice teachers are acquiring adequate levels of CCK and SCK in different content areas. The purpose of this study was to compare first and fourth year preservice PE teachers' CK in the sport of volleyball.

Method: A total of 90 preservice PE teachers (38 first year; 52 fourth year) from a university located in the southern United States served as participants (*mean age* = 22.9 [3.9] years) in this study. Participants completed the Volleyball Expertise Content Knowledge

(VECK) Test. The VECK test was piloted with 128 PETE students randomly selected from each of the 7 universities participating in the pilot assessment. Content validity was confirmed by a panel of four content experts in volleyball. The test consists of 24 questions relating to CCK (12 questions) and SCK (12 questions) of the sport of volleyball. The test yielded KR-20 reliability coefficient of 0.83. Independent samples t-tests were independent samples t-tests were performed on the overall test score and each of CCK and SCK score for two groups (first and fourth year preservice PE teachers).

Analysis/Results: Independent samples *t*-test ($p < .05$) on the overall test score showed that although fourth year teachers scored slightly better, there were no significant differences between first year ($M=8.9$, $SD=4.09$) and fourth year ($M=13.1$, $SD=4.77$) preservice PE teachers ($t_{(88)} = -4.521$, $p=.416$). In addition, no significant differences were found in CCK scores ($t_{(88)} = -3.140$, $p=.657$) and SCK scores ($t_{(88)} = -5.05$, $p=.129$) between first and fourth year preservice PE teachers.

Conclusions: The poor performance of preservice teachers on the VECK test are concerning. These results call for PETE faculty to evaluate the validity and relevance of the course content that is currently offered to preservice PE teachers. The results also indicate the need for an evidence-based approach in developing a systematic program that can improve both CCK and SCK of preservice PE teachers.

Content Knowledge Derived From Physical Education Teacher Education Programs

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Background/Purpose: Content knowledge (CK) consists of common content knowledge (CCK) and specialized content knowledge (SCK, Ward, 2009). CCK includes knowledge of the etiquette, rules, techniques and the tactics. SCK includes knowledge of how to teach CCK. Studies show that teachers with strong CK create greater learning gains than those with weaker CK (Kim et al., 2018; Ward & Ayvazo., 2016). We examined what soccer and gymnastics CK preservice teachers learn in PETE programs. Our research questions were: (1) What do the freshmen scores reveal about

CCK and SCK derived from K-12 physical education and extra curricula learning? (2) What do the differences in the freshmen and seniors scores reveal about CCK and SCK derived from PETE programs?

Method: Participants were 1514 undergraduate students enrolled in 16 universities that were representative of all geographical regions of Turkey. We conducted a cross-sectional analysis to examine the depth of CCK and SCK of freshmen ($n=435$), sophomores ($n=397$), juniors ($n=383$) and seniors ($n=299$) doing a four-year degree PETE program. For the first three years, data were collected in the beginning of the fall semester. Seniors' data were collected in the end of the spring semester. To measure the depth of CCK we used a validated 30-question multiple choice soccer test (Dervent et al., 2018) and a 19-question multiple choice gymnastics test (Devrilmez et al., 2018). To determine the depth of SCK we used content maps (Ward, Lehwald & Lee, 2015). The content maps were coded using a modified version of Rink's (1979) content development categories. A ratio was created to show the evidence of content development beyond the informing task where informing tasks were used as a denominator and all other tasks as numerators (Ward et al., 2017).

Analysis/Results: The mean number of correct answers for soccer CCK was 15.55 (51.85% freshmen $m=15.02$, 50.05%; sophomores $m=15.50$, 51.65%; juniors $m=16.42$, 54.73% and seniors $m=15.29$, 50.98%) and for gymnastics CCK 9.45 (49.91% freshmen $m=8.78$, 46.23%; sophomores $m=9.66$, 50.83%; juniors $m=9.88$, 52% and seniors $m=15.29$, 49.97%). The mean SCK score for soccer was 0.23 (freshmen $m=0.15$, sophomores $m=0.26$, juniors $m=0.31$, and seniors $m=0.21$) and for gymnastics 0.20 (freshmen $m=0.08$, sophomores $m=0.21$, juniors $m=0.25$, and seniors $m=0.12$). A MANOVA was used to analyze the differences of the CCK and SCK scores of soccer and gymnastics at each grade level. Grade level had a significant effect on the soccer CCK ($F_{(3)} = 6.40$, $p < .05$) and gymnastics CCK ($F_{(3)} = 13.09$, $p < .05$), soccer SCK ($F_{(3)} = 16.42$, $p < .05$), and gymnastics SCK ($F_{(3)} = 13.96$, $p < .05$). Bonferroni follow-up tests further indicated that freshmen had lower CCK and SCK than sophomores, juniors, and seniors. Despite the significance of differences of CCK and SCK scores among grade levels, the scores were very low showing little content development.

Conclusions: Freshman data showed that neither CCK nor SCK in soccer and gymnastics were acquired at meaningful levels from their learning history. The students in PETE programs examined in this study, demonstrated limited improvement in CCK and SCK from freshmen to seniors.

Does Body Weight Matter? Skill and Fitness in Middle School Physical Education

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Background/Purpose: Body weight has been an issue in physical education because of the bias and misconception about overweight children (Li & Rukavina, 2009). Major misconceptions about overweight students included low physical skills, low interest in physical activity, poorer fitness, and limited knowledge about exercise. The mis-conceptions may lead to negative motivational implications for overweight students (Li & Rukavina, 2012). The purpose of this study is to determine whether overweight and healthy weight middle school students differed in these areas. The findings of the study could assist teachers to design relevant strategies to motivate students and overcome biases against overweight learners in physical education.

Method: The descriptive study was conducted in eight randomly selected middle schools in a very large metro area in China. The sampled schools could represent over 70% of middle schools in China. A total of 870 students (49% females, 51% males) from 24 classes in 6th grade (35%), 7th (33%) and 8th (32%) were measured by trained data collectors on fitness (cardio, upper-body strength, abdominal strength/endurance, and flexibility), physical skills (throwing-like striking movement and whole-body coordination movement), exercise knowledge (standardized tests), and interest in physical education tasks. The scores were analyzed using MANOVA with body weight as the independent variable (overweight, in-zone, and too-thin).

Analysis/Results: The results show that overweight students performed similarly as healthy-weight students (Wilk's $\lambda=.97$, $F=1.29$, $p=.19$, $\eta^2=.02$; Box M=89.83, $p=.57$). For fitness, ranges of the means are 21.60-23.85 for cardio, 7.80-8.73 for upper-body strength, 28.74-31.81 for abdominal strength/endurance, and 7.00-8.50 for flexibility. For skills, the ranges of the means are 6.01-6.36 for throwing- striking movement and 15.96-18.01 for whole-body coordination movement. The ranges for exercise knowledge and interest in physical education are .40-.41 and 3.51-3.58, respectively.

Conclusions: The nonsignificance in statistics indicates profound significance for teaching physical education. The results show the biases against overweight students in physical education are clearly unfounded. The overweight students performed equally successfully, or

unsuccessfully, as healthy-weight students did. They knew as much about exercise as their healthy-weight peers. Most important, they showed as much interest in learning in physical education as their fellow students. The findings call physical educators to put forth efforts to provide meaningful learning experiences for all students and develop motivation strategies to encourage active participation in physical education.

Effect of a Skating Unit on Fitness in Fifth Graders

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Background/Purpose: Obesity is one of the fastest increasing health epidemics effecting children and adolescents in the United States. This has resulted in physical education professionals adopting lifetime activities to combat this epidemic. Roller and inline skating is one such lifetime activity for all ages. While research has demonstrated that skating induces improvements in cardiovascular fitness, balance, and explosive power in adults and children, little has been done in the United States to investigate if skating could induce improvements in children during physical education classes. The purpose of this study investigates the effect of a skating unit on factors of cardiovascular fitness, static balance, explosive power, and agility in fifth graders.

Method: During a 6-week skating unit (12 lesson), 71 students (ages 10-12; M age = 10.34) participated during regularly scheduled physical education classes. Three separate classes served as the control group ($n=19$; 8 male; 11 female) and two experimental groups: roller skating ($n=26$; 11 male; 15 female) and inline skating ($n=26$; 10 male; 16 female). The control group had no access to the roller or inline skates during class time of study. Control curriculum consisted of activities like soccer, dance, and softball while the experimental groups participated in a skating curriculum adapted with permission from Skatertime and Skate in School. The dependent variables (Progressive Aerobic Cardiovascular Endurance Run PACER, eyes closed Stork Standing Balance, vertical jump, and Illinois Agility Run), then, were the calculated mean differences (pretest – posttest) for each test.

Analysis/Results: Prior to final analysis, participants who did not meet the 8 out of 11 lessons (72%) attendance requirement and extreme outliers ($x < Q1 - 3 *$

IQR or $x > Q3 + 3 * IQR$) were removed from final analysis. Results of a one-way ANOVA on each dependent variable indicated that only Stork Standing Balance was significant at the .05 level, $F(2, 56) = 4.90$, $p = .011$, $\eta_p^2 = .15$. Tukey-Kramer post hoc found that students who roller skated ($M = 3.57$) had greater balance than those who inline skated ($M = -0.98$).

Conclusions: Overall, the data suggests only static balance benefits a participant who roller skates compared to those who inline skate. The finding suggests that the biomechanics required to roller skate is inherently different compared to an inline skater as it relates weight transfer to maintain an upright position while skating. Additionally, a potential increase in friction could influence strength and proprioception that could contribute to an increase in balance. Further research is warranted to explain this finding. Although there was no difference in groups on three of the four tests, each group improved from pretest to posttest on each test. This finding might suggest that a skating unit is inherently different to improve the fitness in fifth graders.

Effect of Goal-Oriented Contingencies on In-Class Physical Activity

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Background/Purpose: Youth participation in regular and consistent physical activity is associated with numerous benefits. While it is recommended that children participate in 60 or more minutes of moderate to vigorous physical activity daily, only 20% of children adhere to this endorsement. Research postulates that behavior modification strategies such as prompting or group oriented contingencies have proven effective at increasing activity levels in Physical Education. Although not inherently described as group-oriented contingencies, these are embedded naturally within Sport Education. The purpose of this study is to examine the differential influence of prompting, and prompting combined with reinforcement on students' step counts within one badminton Sport Education season.

Method: The participants in this study were 38 middle school students. The target behavior was the average number of in-class physical activity as exhibited through step counts by a NL-1000 accelerometer. Physical activity was monitored across three conditions throughout one Sport Education season. Specifically, this included several experimental conditions. The "baseline" included

teacher not prompting students about engaging in physical activity, "prompting only" condition consisted of prompting individual students to remember to accumulate as many steps as possible, and to stay active during class. "Prompting with independent group oriented contingency" consisted of verbally prompting, in addition to teams earning points toward the league standings based upon achieving specific criteria. This study followed an alternating treatment design allowing for the comparison of the effects of two or more experimental conditions while reducing possible confounding due to order or sequencing of effects.

Analysis/Results: As is standard practice in Applied Behavioral Analysis research, data were plotted graphically, and visual analysis was applied to determine functional relationships between the interventions and the target behavior. Class means were plotted along the horizontal axis above the relevant treatment for that day. Over the course of the 15 lesson season, the average amount of steps across seven "baseline" days were substantially less (1139 average steps), when compared with four prompting only lessons (1433 average steps), and four prompting and group contingencies (1470 average steps) lessons. Additionally, visual analysis of the graph determine that average step counts steadily improved throughout the season.

Conclusions: The results of this study suggest that middle school students achieved higher in-class physical activity during the prompting & group-oriented contingencies, when compared to the baseline condition. Another trend found in the data was the average in-class step count improved in all conditions throughout the season. Similar to previous literature, it appears plausible that the group oriented contingency, and how it was embedded into the season through the league standing board was the primary cause for this increase in physical activity behavior among each team. Further it is significant that although these group contingencies were not afforded each lesson, the average step count per team also improved on days in which no bonus points were awarded for achieving specific activity goals. As research indicates children are spending substantial time sedentary within physical education classes, employing group contingencies within the Sport Education model appear as an effective way to improve physical activity in physical education.

Exploring Taekwondo Masters' Occupational Socialization Process and Professional Development

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Background/Purpose: The intensive internship program is a crucial stage where core competencies of Taekwondo (TKD) masters' successful instruction and professional development. There is a need to improve the quality of internship programs so that they will be developmentally and instructionally appropriate in order to provide quality Taekwondo instruction to pupils. The process of socialization (Lawson, 1983a; Stroot & Williamson, 1993; Templin & Schempp, 1989, Templin & Richard, 2014) into the role of teacher may influence the way in which TKD masters perceives the characteristics important for successful instruction or professional development. The purpose of this study was to explore the TKD masters' socialization process, empirically experiences and professional development and how they changed the beliefs of instruction through intensive internship program.

Method: Through 5-month intensive internship program, 17 TKD Masters (6 females and 11 males) participated in socialization process, and professional development that focused on experiential learning (Ferrari, 2006) and implementing professional instructions through intensive internship program. Qualitative data were collected through field observations, journals, and interviews to assess TKD masters' receptivity and perceptions of the internship as well as TKD master's socialization process and professional development toward professional instruction. Inductive analysis and trustworthiness (Lincoln and Guba, 1985) was supported through member checks and triangulation of various data sources.

Analysis/Results: All TKD masters stated that they were open to change, excited about the intensive internship program, and expected it to improve their instruction and professional development. Most male TKD masters were confident that they would fully implement the intensive internship program. However, female TKD masters followed through and made several advances in implementing the internship program while the male TKD masters made few advances. Even though all TKD masters confirmed that they improved instructional skills, leadership, decision making, and confidence of the instructions through the intensive internship program, they reported that intensive internship program didn't much provide specifically how they improve their socializations (i.e. language, culture, and interventions) through the internship program.

Conclusions: The research confirms that individual and group ownership in the change process impacts

the degree of success in changing the culture of an internship program. Providing professional development opportunities through workshops, outside experts, reading materials, and group discussions are all helpful to varying degrees (Guskey, 1995, 2009). Overall, intensive internship program seems to be a practicable and motivating curriculum option for TKD masters (i.e. the increased levels of confidences, improved social behavior and leadership, and enjoyment of the intensive internship program). Both female and male TKD masters recognized that the lack of their preparation of the intensive internship program and it led to spend the implementation time at the beginning of the intensive internship program because the traditional curriculum did not guide and inform intensive internship program. Nonetheless, all TKD masters did see the greater experiences of the intensive internship program for leadership improvement and decision-making opportunities the shift from passive attitude to active/positive attitude of instruction as TKD masters took on various stages of the socializations during the intensive internship program.

Fading Supervision: A Tiered Approach to Learning to Teach Sport Education

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Background/Purpose: Teachers' delivery of models-based instruction, including sport education, is influenced by prior socialization and support structures within the current teaching environment (Curtner-Smith et al., 2008; Sinelnikov & Hastie, 2017). It is, therefore, critical that individuals be provided opportunities to practice implementing pedagogical models in a variety of different contexts and with varying support so as to promote model fidelity (Richards & Gordon, 2017). Glotova and Hastie (2014) recommend a phased approach to learning sport education in which preservice teachers (PSTs) experience the model as students and then take on progressively more responsibility in using the model in practice. Grounded in occupational socialization theory (Templin & Schempp, 1989), the purpose of this study was to examine how two PSTs interpret and deliver consecutive sport education seasons during an early field experience in which university supervision was faded over time.

Method: The participants in this study were two PTs (1 male, 1 females), who were enrolled in a secondary

early field experience one semester prior to student teaching. Each PTs taught two consecutive Sport Education seasons (volleyball and badminton) to the same middle school class. Prior to the first season (volleyball), one of the PETE faculty members assisted in planning and then provided on-site direct supervision during all volleyball Sport Education sessions. During the second season (badminton), each PT was tasked with planning and implementing in conjunction with the cooperating teacher rather than PETE faculty member. Data collection included pre and post-interviews with each PT, focus group interviews with both participants during each season, individual interviews with PETE faculty member and cooperating teacher, audio recording of each lesson to examine model fidelity, and the collection of teaching artifacts (e.g., lesson plans, unit plans, role contracts).

Analysis/Results: A two-person research team analyzed the qualitative data using both inductive and deductive analysis (Patton, 2015), in addition to constant comparison (Glaser & Strauss, 1967). The audio recordings were coded using Sinelnikov's (2009) checklist for the critical elements of sport education and indicated that both preservice teachers maintained a high degree of fidelity across both seasons. Initial themes from interviews included a *comprehensive buy-in of model* where participants placed a high value on engagement and activity in conjunction with skill development. Other themes that categorized the learning experience included: *appropriate support from supervisors and peer PST, initial workload feeds later results, the challenge of time, increasing autonomy over teaching, and growing confidence with model.*

Conclusions: Relationships with cooperating teachers during field experiences are particularly meaningful because they give preservice teachers an opportunity to practice implementing innovative practices while negotiating with senior colleagues (McEntyre et al., 2018). This arrangement can be conceptualized as practice for the sociopolitical and role-related negotiations often required for beginning teachers to implement lessons learned during PETE in school environments (Richards, 2015). Results from this study support a tiered approach to supervision in which PETE faculty members provide direct supervision and then fade that supervision in order to provide preservice teachers an opportunity to negotiate with cooperating teachers.

Glaring Gaps Between Sun-Safety Knowledge and Intention to Teach It

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Background/Purpose: The United States ranks third in incidences of skin cancer, behind New Zealand and Australia (Apalla et al., 2017). With recent policy focus (eg. S.3307) on health and wellness through, and recommendations related to preventative measures (eg. USPSTF, 2018), sun safety is a topic that, if taught during school, may lead to decreased skin cancer risk. In regards to healthy behaviors, teachers cover topics they feel more knowledgeable about teaching (Castelli & Williams, 2007). The current study was grounded in the Theory of Planned Behavior (Ajzen & Fishburn, 1980, 2005), which considers attitude, social group influences, and perceived behavioral control influencing intention and, ultimately behavior. The purpose of this study was to investigate preservice teachers' level of sun safety knowledge and intention to teach future students about sun safety.

Method: In collaboration with doctors at Mayo clinic, a survey was modified for future teachers from existing, related surveys using resources from the Center of Disease Control and Prevention (2016) and The Skin Cancer Foundation (n.d.). The survey included questions regarding skin cancer, sun safety, and future intentions of including this content as a future teacher.

Analysis/Results: A mostly Caucasian ($n=166$) sample of undergraduate students ($n=281$; female=253; mean age=22) participated, with the majority (74%) majoring in Elementary Education ($n=70$), Secondary Education ($n=72$), and Early Childhood Education ($n=67$). Sun safety knowledge items showed adequate internal consistency reliability ($\alpha=.72$). Participants demonstrated good knowledge of cancer risk and modifiable behaviors by answering *Agree* or *Strongly Agree* for the following: sun exposure is a risk (95.7%), skin cancer can be deadly (94.7%), and the benefits of sunscreen use (92.5%), protective clothing (93.2%), and seeking shade (76.1%). Respondents did not know (58.4%) UV index safe ranges. 73.6% of respondents indicated they did not feel they had received adequate training on sun safety in their studies to prepare them to teach this content.

Analysis of Variance results indicated significant differences in responses to the question "I plan to teach my future students about skin cancer prevention and sun protection". Tukey post hoc showed Secondary Education majors were more likely to respond negatively to this prompt as compared to Special Education and Early Childhood majors ($p<.001$). There was no correlation between personal or family history of skin

cancer and intention to teach sun safety. The only statistically significant correlation ($r=.44$, $p >.00$) observed was between belief that teachers have a responsibility to teach about sun safety and intent to teach this in the future.

Conclusions: Results suggest future teachers lack intention to integrate sun safety content into future classrooms. Considering the Theory of Planned Behavior, and reflecting on the responses pointing to lack of training, perhaps there is a need for teacher preparation programs to include information regarding teachers' role/responsibility to integrate such knowledge and practices into their content. This is especially important for activity classes or breaks that make use of outdoor facilities.

Impact of Ability Grouping on Activity Levels During Game Play in Physical Education

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Background/Purpose: While there has been an expansive line of research on ability grouping in education, there is a limited number of studies examining ability grouping in physical education. Furthermore, the few studies within physical education that have examined ability grouping have utilized a between subjects model that examined verbal exchanges, (Brock and Hastie 2016) and, opportunities for involvement and success rates (Hastie, Ward, & Brock, 2016). One outcome measure of ability grouping that has yet to be examined is the accumulation of moderate to vigorous physical activity (MVPA). Given the limitations of previous work, and given the need to find ways to promote MVPA levels within physical education, the purpose of this study was to examine the effects of ability grouping on students' MVPA using a within-subjects design. **Method:** Forty-eight fifth-grade students were placed into one of two groups (higher skilled or lower skilled) and participated in a series of games involving different team composition. These consisted of (a) all players classified as having higher-skill levels, (b) all players classified as having lower-skill levels, collectively named "matched ability games" and (c) an equal number of higher- and lower-skilled players, named "mixed ability games." The game played in this study was based on Harvey's (2007) design of a generic invasion game, and named "Over the Line Ball." Physical activity was measured with the Actigraph GT3X triaxial accelerometer programmed with a 5s epoch. The minutes of

sedentary behavior, light, moderate, vigorous, and very vigorous physical activity during each lesson, with the average of each student's percent time in moderate to vigorous physical activity (MVPA) calculated for the two conditions in which they participated.

Analysis/Results: Across the three game types, the students spent an average of 61.6% of game time engaged in MVPA. No significant three-way interaction was found, $F_{1,44} = .3415$, $p = .071$, $\eta^2 = .072$, and there were also no significant two-way interactions with ability grouping and gender, $F_{1,44} = .320$, $p = .575$, $\eta^2 = .007$ or between ability grouping and student skill level, $F_{1,44} = .320$, $p = .575$, $\eta^2 = .007$. Nevertheless, there was a significant main effect, indicating MVPA varied based on skill level, $F_{1,44} = 90.655$, $p < .001$, and gender accounted for about 67% of the variance in game performance across all groups, $\eta^2 = .673$. In the case of both high-skilled and low-skilled students, MVPA was significantly lower when playing in mixed ability games, MVPA_higher $F_{1,46} = 16.907$, $p < .001$, $\eta^2 = .278$; MVPA_lower $F_{1,46} = 18.884$, $p < .001$, $\eta^2 = .300$.

Conclusions: Both higher- and lower-skilled students accrued lower levels of MVPA during mixed ability game play. What is important to highlight is that if lower-skilled students competing in mixed-skill games are unable to attain this 50% level during gameplay, a situation where students might be expected to be particularly active, it is unlikely which is when students should be active, they will not be able to meet the goal of 50% of class time spent in MVPA.

Impact of Additional Physical Education Time on Academic Performance in Elementary Children

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Background/Purpose: Previous studies have sought to establish a connection between increased time spent in physical activity (PA) and academic achievement. This includes after school programs (Wright, 2016), classroom-based PA (Martin & Murtaugh, 2015 and Mahar, Murphy, Rowe, Golden, Shields, & Raedeke, 2006), physical education (PE) (Arday, Fernández-Rodríguez, Jiménez-Pavón, Castillo, Ruiz, & Ortega, 2014), and a comprehensive school-based approach (Ling, King, Speck, Kim, & Wu, 2014). Further research is needed to establish a strong, positive relationship between increased PA and academic achievement. Given the limitations and inconclusiveness of previous studies, it

is also necessary to establish a relationship between increased PA and improved classroom behavior that subsequently leads to improved academic achievement. Therefore, the purpose of this study is to investigate the effects of increased time in PA on student classroom behavior and academic achievement.

Method: Twenty-nine 5th grade students ($n=15$ control) participated in this pilot study in which they wore accelerometers for five days at the beginning of the year and again at end of the year. All participants had PE during the first round of data collection; only treatment group had PE during second round. Systematic observation of the students in the classes immediately following PE and a teacher-based questionnaire were administered at the beginning and end of the year. Measure of Academic Progress test scores were also collected at the beginning and end of the school year. A series of independent samples t-tests were conducted to determine if differences occurred in teacher behavior ratings, observer behavior ratings, math, and reading test scores.

Analysis/Results: An independent-samples t-test was conducted to evaluate the hypothesis that students with increased time in PE will improve academic achievement and classroom behavior. The tests were not found to be significant: $t(\text{survey}) = -0.217$, $p = 0.829$; $t(\text{observer}) = -0.670$, $p = 0.498$; $t(\text{reading}) = 0.199$, $p = 0.980$; $t(\text{math}) = -0.342$, $p = 0.884$. The results were counter to the research hypothesis.

Conclusions: It appears that students in the supplemental PE class did not show a significant improvement in classroom behavior or academic achievement. However, these results do show that time spent in additional PE does not have a negative impact on classroom behavior or academic achievement. Rather, anecdotally, the students receiving extra time in PE seemed to be more excited during the “activity” period than their peers.

Impact of Preservice Teachers' Learning History on Content Knowledge

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Background/Purpose: Preservice teachers' (PSTs) depth of common content knowledge (CCK), their specialized content knowledge (SCK) and their ability to perform basic skills, are requirements in the initial physical

education teacher standards one and two (SHAPE America, 2017). Understanding what CCK, SCK and performance skills PSTs have acquired through their K-12 physical education and extracurricular experiences is essential in the design of effective teacher education curricula. This study examined three research questions: (a) What CCK, SCK, and performance abilities have college students acquired from their K-12 physical education and extracurricular experiences? (b) what are the differences in CCK, SCK, and performance between majors and nonmajors? (c) what are the relationships among demographic variables of students and their CCK, SCK, and performance?

Method: College students ($n=114$) from the physical education teacher education (PETE) program content classes ($n=39$ students) and from the basic instruction program classes ($n=75$ students) in tennis, badminton, basketball and volleyball were recruited to participate in this study. Data were collected prior to the start of the classes. The data thus represent the CCK, SCK and performance accrued prior to the testing. CCK was measured using a 10 item-open ended question test and scored using a rubric established from the Steps to Success series of books for each sport. SCK was assessed using content maps (Ward, Lewald, & Lee, 2015), and performance was assessed by a performance test for each sport established using content from the Steps to Success books and expert validity. Participants were also asked to complete a demographic questionnaire that requested information on their playing and teaching/coaching backgrounds.

Analysis/Results: Descriptive statistics showed that a range of scores in CCK across the four sports (25-80%). The results for SCK were consistently low across the four sports. In the performance tests, all participants scored above 60% with the exception of badminton (46%). A Mann-Whitney U test indicated that a majority of the results on those tests were statistically significantly different between the two groups, except for the CCK tests in basketball and tennis, and the SCK measure in basketball; however, none of these differences were meaningful because the scores were low. No relationships between demographic variables and CCK, SCK, and performance scores were found.

Conclusions: This is one of the first studies examining the learning histories and relationships among CCK, SCK and performance of majors and nonmajors. The implications for PETE programs if these results are representative of students in our programs is that they enter the university with a range of CCK, limited SCK and performance abilities obtained from their past experiences that on a college grading scale would be considered C's (70-79%) and D's (60-69%). The implications for the design of PETE curricula to meet the

national standards is that CCK, SCK and performance must be explicitly taught. Given the low CCK and SCK of PST's as well as their performance abilities, programs should assess how much PSTs learn in their content classes.

Implementing Features of Sport Education: Student Attitudes Toward Team Learning

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Background/Purpose: Strategies for improving teamwork and critical thinking have gained traction in recent years as higher education (HE) continues to adjust teaching approaches to meet expectations of a changing society. Teamwork provides a novel approach and is gaining traction over traditional models and manifestations that may result in negative student experiences. The resulting conflict between teamwork's potential for student growth and student perceptions of the concept warrant the exploration of new strategies and empirical evidence in HE settings. This study seeks to contribute to this growing body of research by assessing the application of the six key features of Sport Education (SE) to the HE classroom and exploring students' attitudes toward learning in a team environment.

Method: The paucity of current research in the implementation of the features of SE in higher education classrooms warranted an exploratory approach to investigating the phenomenon. Formal and informal assessment data and other course artifacts were collected from eight kinesiology motor development classes (n=387 students) over seven consecutive semesters. The features of SE (seasons, affiliation, formal competition, culminating event, keeping records, and festivity) (Siedentop, Hastie and Van Der Mars, 2011) were modified to meet the needs of the unique environment and applied to the course design.

Analysis/Results: Constructivist grounded theory (Charmaz, 2014) was used to analyze student and instructor participant experiences as shared through course artifacts and reflections. All course artifacts were aggregated by the course instructor, de-identified, and shared with fellow research team members for analysis. Research team members independently coded data to form initial codes. These codes were refined through research team discussions and review to generate overarching themes and supporting

subthemes in the final stages of axial coding. Results suggest that applying the features of SE to a higher education environment is potentially useful in (1) fostering team climate, (2) igniting reciprocal learning, (3) using competition to invoke engagement, and (4) creating a positive classroom atmosphere. Students attitudes were overwhelmingly positive throughout all four themes. Students recognized the importance of developing communication and creating social relationships to aid in overall team success. The reciprocal learning opportunities were identified as a great benefit. Sharing ideas, expanding on those ideas, and developing comprehensive answers together assisted students with critical thinking. Competition appeared to be the most exciting and enjoyable feature of course. Many students expressed a sense of "fun" in the class as a result of the implementation of the features of SE. The only negative to surface was if a team experienced a "slacker".

Conclusions: Results suggest that SE features can give energy to the pursuit of learning in a team environment, provide an alternative model for team learning, and provide a novel approach to teaching and learning in HE. The conclusions are important to the continuous pursuit of improving HE pedagogy, learning in a team environment, and the ultimate success of students when they enter the workforce.

Influence of Curricular Negotiation on Minority Students and Their Teacher

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Background/Purpose: A limited amount of research has suggested that teachers who give their students the opportunity to voice their opinions by purposefully negotiating the curriculum with them can improve engagement and realize a number of important affective goals. Negotiated physical education curricula that have been studied previously were mainly taught in high schools to students who were grouped heterogeneously and were from a variety of socioeconomic backgrounds. The primary purpose of this study was to examine the effects of purposefully negotiating the physical education curriculum on one mixed-gender middle school class consisting of 45 low socio-economic Hispanic and African American students. A second purpose was to evaluate the impact of the program used to train Jennifer, the

teacher. The research questions we attempted to answer were: (a) What did the process of negotiation involve in terms of teacher and student thoughts, actions, and interactions? (b) What were the impacts of negotiating the curriculum on the students and teacher? and (c) Which components of the training program helped and hindered the teacher's ability to successfully negotiate the physical education curriculum with students?

Method: The study was driven by a number of theoretical perspectives and ideas from the critical tradition. Jennifer learned how to negotiate the curriculum during two workshops. Strategies she was encouraged to employ came from the teacher development literature. Jennifer then taught one 18-lesson unit during which she was asked to employ indirect pedagogies and negotiate content, tasks, and assessment with her students. Throughout the unit, Jennifer communicated with other teachers who were also attempting to negotiate their curricula with students and received feedback from the workshop instructor. Data were collected from Jennifer via reflective journaling and formal, informal, and stimulated recall interviews. Student data sources included the critical incidents that they wrote following lessons and focus group interviews in which they participated. In addition, unit lessons were observed.

Analysis/Results: Data were reduced to themes by employing analytic induction and constant comparison. Results revealed the unit and training to be largely successful. Most of the students were empowered and able to think constructively about their own physical education. Less able boys and girls became reconnected with the physical education curriculum and many of the more able boys became reconnected with their less able peers. Ironically, the teacher did not recognize the extent of her success. Her own focus on skilled performance and participation in health-enhancing physical activity blinded her, somewhat, to the fact that she was actually realizing all kinds of other affective goals.

Conclusions: Findings from the study suggest that future training in this kind of pedagogy, at both the preservice and inservice levels, include a critical analysis of the subject's focus and the unpacking of what are taken-for-granted key objectives. Moreover, it is worth re-emphasizing the connection between affective goals and those of a more physical nature. Specifically, students are more likely to engage in health-enhancing physical activity and skilled performance if they find the outlets for engaging in these kinds of activities personally meaningful.

Japanese Physical Education Majors' Specialized Content Knowledge

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Background/Purpose: Specialized content knowledge (SCK) plays a critical role in teaching effectiveness (Ward & Ayzazo, 2016). SCK can be seen in the sequence of instructional tasks that teachers use to develop skillfulness in physical education. Rink (1983) has argued that content development in physical education requires the sequencing of content using developmentally appropriate teaching progressions. Previous studies have shown that K-12 physical education and extra-curricular activities have little impact on developing SCK for physical education preservice teachers or PSTs (e.g., Gusthart & Rink, 1983; Kim & Ko, 2017; Tsuda et al., 2017). To date, these studies have been conducted in the United States, and we know little about the levels of SCK among physical education preservice teachers in other countries. Given that each country represents a different educational system, this study examines the SCK acquired from Japanese PSTs' K-12 physical education and extracurricular experiences. **Method:** A total of 689 (male $n=431$, female $n=258$) PSTs from a convenience sample of eight universities in Japan participated in the study. Data were collected at the beginning of the school year and as such represent the SCK of these participants SCK learning histories up to that point. The participants completed a content map (Ward, Lewald, & Lee, 2015) of volleyball and basketball. Content map data were analyzed using content development categories (Rink, 1983) and creating a ratio of the number of extension, refining and applying tasks for each informing task (Ward et al., 2016). Participants also completed a demographic background questionnaire that asked them to describe their playing and teaching/coaching experiences in volleyball and basketball.

Analysis/Results: Descriptive statistics showed that the Japanese PSTs' SCK levels were typically low showing only 1-2 tasks developed beyond an informing task (volleyball $M = 1.35$, $SD = 1.46$; basketball $M = 1.51$, $SD = 1.63$). Spearman rho analyses demonstrated that there were significant, but weak correlations among years of learning to play and SCK in both volleyball and basketball (volleyball $r_s = .12$, $p = .001$; basketball $r_s = .15$, $p < .001$). Weak correlations were also found between years of

teaching experiences and SCK for both volleyball and basketball (volleyball $r_s = .11$, $p = .003$; basketball $r_s = .18$, $p < .001$).

Conclusions: Consistent findings were demonstrated among the Japanese PST's in this sample and these findings are similar to those reported by researchers studying PSTs in the United States (Gusthart & Rink, 1983; Kim & Ko, 2017; Tsuda et al., 2017). It appears that in Japan and the United States, K-12 physical education experiences and extracurricular activities have little impact on PSTs' SCK. These findings illustrate that experiences of playing and teaching are not sufficient to develop adequate levels of SCK, and SCK needs to be taught in Japanese teacher training curriculum. Understanding Japanese PSTs' level of SCK, will inform future curricular decisions for physical education teacher education programs in Japan.

Junior High PE Students' Tactical Knowledge in Four Sport Units

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Background/Purpose: The second national standard for physical education (PE) states "the physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance (SHAPE America, 2013). A rationale for using the tactical games model in PE is that the knowledge gained through this approach will empower students to become knowledgeable game players (Mitchell et al., 2006). The purpose of this study was to compare PE student's knowledge of tactical concepts and strategies of four sport units that were taught using the tactical games model.

Method: A total of 344 students, aged 11-16 years old, enrolled in the 7th-9th grades from one junior high school in the southwest participated. Each student participated in 4 team sport units (8 lessons per unit) taught by two certified PE teachers. All lessons followed the tactical games instructional model. All students completed a preand post-test for each sport unit. All tests were created by the primary investigator and consisted of 20-25 questions that focused on tactics and strategies.

Analysis/Results: A $2 \times 3 \times 2$ doubly MANOVA was employed to examine the effect of sex (girls, boys), grade (7th, 8th, 9th), and time (pretest, post-test) on exam scores in soccer, flag football, volleyball, and basketball.

Statistical significance of the multivariate model was determined using Wilks' lambda. MANOVA was followed by univariate ANOVA tests with repeated measures and a Bonferroni alpha level correction. Effect sizes (Cohen's d) were used to determine the practical significance of each pair-wise comparison. MANOVA yielded a significant sex \times time interaction (Wilks' $\Lambda = 0.96$, $F(4, 335) = 3.42$, $p = 0.009$) and a significant time main effect (Wilks' $\Lambda = 0.39$, $F(4, 335) = 130.62$, $p < 0.001$). Follow-up tests revealed significant increases in exam scores from pretest to post-test for soccer (Mean difference = 2.44 points, $p < 0.001$, $d = 0.65$), flag football (Mean difference = 2.58 points, $p < 0.001$, $d = 0.60$), volleyball (Mean difference = 3.13 points, $p < 0.001$, $d = 0.73$), and basketball (Mean difference = 2.25 points, $p < 0.001$, $d = 0.48$). There was also a significant sex \times time interaction for basketball, with girls showing greater increases in exam scores from pretest to post-test compared to boys (Mean difference = 1.35 points, $p < 0.001$, $d = 0.35$).

Conclusions: Results suggest that PE lessons that follow the tactical games model do affect junior high PE students' tactical knowledge over time.

Korean Teacher Candidates' Specialized Content Knowledge for Teaching Soccer

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Background/Purpose: Teachers' in-depth content knowledge (CK) has been recognized as a key knowledge base in enhancing teacher effectiveness (Ward, 2013). In developing CK, Korean physical education teacher education (PETE) programs have emphasized developing skills and fitness competency, but seldom emphasized specialized content knowledge (SCK) consisting of teaching common performance errors, error corrections, and instructional tasks. SCK is a necessary requirement for the teaching of physical education (Kim et al., 2015; Lee & Choi, 2011; Ward et al., 2012). One way to measure teachers' SCK is to use a content map. A content map is a graphical organizer of instructional task progression and it is a validated assessment for teachers (Ward et al., 2017). This study examines: (a) how freshmen's SCK differed according to their K-12 physical education and/or extracurricular learning in soccer and (b) how seniors' soccer SCK developed from their Korean PETE programs differed from freshmen.

Method: A cross-sectional study was used to examine the SCK of 234 freshmen and 168 seniors (total = 402) recruited from 12 Korean PETE programs. Each participant created a content map using their existing soccer SCK at the beginning of the semester. To code instructional tasks written on content maps, seven coding variables: informing (I), extending (E), extending-applying (EA), refining (R), refining-applying (RA), applying (A), and applying-nongame (AN) developed by Ward et al. (2018) were used. Using the $(E+EA+R+RA+AG+AN)/I$ formula, we calculated content development (CD) scores that indicate SCK with a 3.0 cut point for distinguishing between weak and strong SCK (Ward et al., 2018).

Analysis/Results: Descriptive and inferential statistics were used to analyze the data. To test the hypothesis that freshman groups who have learned soccer before entering the programs have better SCK, a one-way between-group ANOVA was performed. The assumption of homogeneity of variances was satisfied with Leven's test, $F(2, 231) = 0.52, p = 0.60$. The mean CD scores were 2.16 ($SD = 1.14$) for the freshman learning group and 2.18 ($SD = 1.30$) for the freshman nonlearning group. The one-way ANOVA failed to yield a statistically significant effect, $F(2, 231) = 0.46, p = 0.63$. Next, another one-way ANOVA was conducted to examine the difference in the freshmen and seniors' soccer CD scores derived from their PETE programs. The assumption of homogeneity of variances was satisfied with Leven's test, $F(1, 400) = 3.66, p = 0.56$. The mean CD scores were 2.18 ($SD = 1.23$) for the seniors and 2.27 ($SD = 1.01$) for the freshmen. There was not a significant difference in the freshmen and seniors' soccer CD scores derived from the PETE programs, $F(1, 400) = 0.53, p = 0.47$.

Conclusions: The results showed that the freshmen entered the PETE programs with weak SCK regardless of their prior learning experience in soccer. In addition, there was no statistical effect of teacher training in terms of improving the teacher candidates' soccer SCK. The study can guide teacher educators in reconsidering ways to promote Korean teacher candidates' SCK.

Middle School Students' Conceptions and Misconceptions of Fitness Knowledge

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Background/Purpose: Researchers and educators have long recognized the significance of fitness knowledge on healthy lifestyle development. Physical educators have dedicated enormous effort to teaching the knowledge. However, due to the nontesting status of the subject, limited effort has been invested to ensure the achievement of learning knowledge.

Fitness knowledge is a sophisticated system that incorporates concepts such as types, intensity and duration of physical activities, cardiovascular and muscular strength systems and behavioral strategies, such as meta-cognitive skills, diet and hydration. Research has shown that, these concepts can be mastered by K-12 students through instruction better than through unstructured life experiences where misconceptions are often formed. Conceptual change – abandoning misconceptions as well as constructing scientific knowledge – can only happen with systematic instruction. The purpose of this study is to determine students' mastery of fitness knowledge via conceptual change and to identify effective pedagogy that enhances their learning.

Method: Based on the Free and Reduced Meals (FARM) rates, 24 schools with varied socioeconomic status were randomly sampled. A total of 371 middle school students (male = 169) received semi-structured conceptual interviews and their physical education lessons were observed. The length of interviews was about twenty minutes each. All interviews were audio-recorded and later transcribed. Parental consent and student assent were obtained prior to the interviews.

Analysis/Results: During the data transcribing process, we focused on the consistency with the basic principles of fitness and major fitness concepts and interpreted the intended meanings of their answers. After finishing transcription and open coding, the data were prepared for follow-up axial coding for theme building. Based upon the themes, in-depth interpretations were conducted to build a grounded theory based on the conceptual change theories. The interpretations of the data were cross-validated within and between observations and interviews to ensure trustworthiness.

Most students demonstrated accurate understanding of caloric balance/imbalance and the principles of progression and overload but had confusion over the principle of specificity. Many students showed inaccurate understanding or misconceptions on aerobic and anaerobic exercises, even though they admitted to having exposed to the concepts in educational and family settings. Rather than differentiating the two concepts on intensity and oxygen consumption, they defined the concepts by types of activities, duration or moving

distance. In terms of nutrition, most students could not identify major nutrients as well as their functions in fueling physical activities. Many students possessed misconceptions by identifying sources of energy as water, oxygen and sleeping. Regarding applying fitness knowledge, most students did not have a well-defined goal, which often associated with lack of metacognitive skills to apply the knowledge.

Conclusions: In designing learning activities, teachers should organically integrate declarative (knowing what) and procedural (knowing how) perspectives of fitness knowledge with a clear focus to address misconceptions. Incorporating physically active tasks related to procedural knowledge carries the potential of reducing students' misconceptions and confusion, and reinforcing students' in-depth understanding of fitness knowledge holistically. In addition, teaching students how to identify a goal and basic meta-cognitive skills to achieve the goal deserves could contribute students' learning.

Negotiation Within the Teaching Personal and Social Responsibility Model

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Background/Purpose: Previous research conducted within the classroom ecology paradigm has indicated that patterns of teacher-student negotiation vary within different instructional models and that these patterns of negotiation can impact the quality of instruction. The purpose of this study was to describe the patterns of teacher-student negotiation that occurred when preservice teachers (PTs) taught within the teaching personal and social responsibility (TPSR) model. The research questions we sought to answer were: (a) What forms did PT-student negotiations take during TPSR units? and (b) To what extent did PT-student negotiations take place across TPSR units?

Method: Participants were seven PTs enrolled in an elementary early field experience. They taught three to four mini-units of TPSR which consisted of 11 or 12 30 to 60-minute lessons. Students within these units were aged 4 to 9 years. Content taught included various fundamental movement skills. Seven qualitative techniques were employed to collect data. These were nonparticipant observation; formal, informal, and stimulated recall interviews; document analysis; a reflection journal; and the writing of critical incidents.

Analysis/Results: Phase 1 of the analysis involved sorting data from all seven sources into those pertaining to each of the two research questions. Phase 2 involved reducing data within each of these two subsets to key themes by employing analytic induction and constant comparison. Credibility and trustworthiness of the analysis were established by completing a search for negative and discrepant cases, triangulation, and member checking. Three general patterns of negotiation were identified. In the units taught by 2 PTs, PT-initiated and student-initiated negotiations gradually improved and became more positive over time. In the units taught by 3 PTs, negotiations initiated by either party remained constant. Finally, in the units taught by 2 PTs, negotiations became more negative. Key factors influencing patterns of negotiation were PTs' comprehension of and comfort with the TPSR model; class size; and students' age, gender, and skill level. Most forms of negotiation observed had been described in previous research. There were, however, two forms of negotiation initiated by PTs not previously included in the literature. The first, fake negotiations, had the effect of giving the student the impression that they had changed the PT's tasks, when, in reality, the PT had planned to make the change all along. The second was a new variant of teacher-initiated negative negotiation in which PTs offered changes in tasks in order to soothe the concerns of emotionally upset students.

Conclusions: Findings indicated that the structure of TPSR had the potential to encourage positive patterns of negotiation by both PTs and students. The main practical implications of the study are for faculty working with PTs in PETE programs. Specifically, the study indicates that faculty attempting to facilitate their charges' use of TPSR would do well to have them begin teaching the model with relatively small class sizes. In addition, faculty might focus on teaching PTs how to negotiate within the TPSR framework and about the kinds of negotiation they can expect their students to initiate.

Parent Perceptions of a Homeschool Physical Education Program

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Background/Purpose: The practice of homeschooling has expanded in the US (Ray, 2011, 2016). Parents of homeschooled children are heavily involved with decision making about education including physical

education, but minimal research has been completed on homeschooled children and their families. Among parents of public school students, incomplete or inaccurate perceptions of physical education exist, potentially impacting the status of physical education (Sheehy, 2011). While parents of students in public school have limited opportunities to learn about K-12 physical education, parents who enroll children in homeschool physical education programs often observe lessons and engage in subsequent dialogue with children. The unique perspectives held by homeschool parents may provide insight into parental expectations and perceptions of physical education. The current researchers investigated (a) perceptions of physical education from the perspective of homeschool parents, and (b) benefits parents perceive for children in participating in homeschool physical education taught by preservice teachers (PSTs) in a physical education teacher education (PETE) program at a college in Massachusetts.

Method: A qualitative instrumental case study design was implemented with semi-structured focus group interviews to collect data from 16 parents of children in a homeschool physical education program. Other sources of data included observations with field notes from the homeschool physical education sessions. Data analyses commenced with verbatim transcription of field notes and focus group interviews. The research team independently applied open, axial, and selective coding prior to discussion and further analyses. Methodological and investigator triangulation and member checking were utilized to support trustworthiness.

Analysis/Results: Purposeful emerged as the selective code. Parents perceived physical education in a positive light inclusive of meaningful curriculum, assessment, outcomes, and developmentally appropriate instruction. Parents perceived prior experiences with physical education involving danger, disorganization, and developmental inappropriateness as negative because, in these cases, the purpose of physical education was not being fulfilled. Moreover, parents recognized their own inability to replicate a developmentally appropriate physical education curriculum at home. Parents believed their children learned and achieved specific psychomotor, cognitive, and affective outcomes, while the entire family benefitted from the program. Parents indicated that they were able to better support the child(ren) in physical education at home, while the program served to shape younger children who often observed sessions.

Conclusions: Parents of homeschooled children who regularly viewed physical education lessons taught by PETE PSTs perceived physical education as purposeful

and positive. Parents demonstrated knowledge of physical education curriculum and best practices. Participating children, parents, and other family members benefitted from a structured, safe, and developmentally appropriate physical education program. The perceptions of physical education from the current study contrast with findings on perceptions of public school parents (Na, 2015; Sheehy, 1993). Given the roles parents play in schools and local government, a lack of understanding of physical education may negatively impact K-12 policies and funding for physical education, and the content area may be further marginalized (Sheehy, 2011). Facilitating enhancements in knowledge by exposing parents directly to high-quality physical education may better position parents to advocate for physical education while also supporting the entire family

Pedagogical Strategies for Delivering the Teaching Games for Understanding Model to Preservice Teachers Possessing Hardcore Nonteaching Orientations

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Background/Purpose: Several colleges and universities have closed their physical education teacher education programs in recent years (King, 2018; PE evolves into health and fitness, 2014; Physical and health education teacher education option closed effective summer 2015, n.d.; Templin, Blankenship, & Richards, 2014), with enrollment issues often being cited as a major factor in this decision (Templin, Blankenship, & Richards, 2014). Attempts have been made to maintain physical education teacher certification programs, by combining it with other areas of specialization to develop hybrid majors (Applied exercise & health option added to kinesiology major, 2016; Templin, Blankenship, & Richards, 2014). These proposed hybrid majors may be a successful strategy for prolonging teacher certification options, while also stabilizing enrollments. However, potential pedagogical problems may arise within hybrid programs, because little is known about the prior experiences of recently hypothesized fitness oriented preservice teachers', who are now entering these hybrid programs (Richards, & Padaruth, 2017). In recent years several scholars have investigated the influence of socialization on preservice and inservice teachers' interpretation and delivery of tactical and innovative games models such as Teaching Games for Understanding (TGfU) and Sport Education (SE) (Curtner-Smith, Hastie, & Kinchin, 2008;

Li & Cruz, 2008; O'Leary 2014; 2016; Vollmer & Curtner-Smith, 2016). However, none of these studies have investigated preservice teachers' who possess this recently hypothesized fitness orientation, or those enrolled in hybrid physical education teacher education programs. Therefore, it is suggested that this newly identified population and setting requires immediate investigation.

Method: Participants were preservice teachers (n=14) enrolled in a hybrid physical education teacher education games methods course. Qualitative data were collected through autobiographical essays, peer-teaching observations, document analysis, and stimulated-recall interviews. NVivo 11 Pro software package was employed to analyze data and develop a qualitative codebook using analytic induction and constant comparison techniques.

Analysis/Results: Preservice teachers' possessing hardcore nonteaching orientations delivered full, watered down, and cafeteria versions of the teaching games for understanding model. Data suggested that preservice teachers can deliver full and watered down version of the model, which contradicts previous findings. Preservice teachers' lessons were influenced by their early acculturation experiences through being a sporting expert or nonexpert, and referring to how their youth coaches instructed. Preservice teachers' were influenced by their current professional socialization experiences by showing an appreciation for the teaching and learning within the games context. They were also both positively and negatively influenced by having to teach their undergraduate peers.

Conclusions: Pedagogical recommendations for physical education teacher education faculty include addressing preservice teachers' acculturation experiences, allowing them to teach sports in which they are experts, have an increased focus on teaching them how to deliver open ended questions and tactical discussions, and to providing opportunities to teach K-12 students in addition to their undergraduate peers.

Perceptions of Situated Game Teaching through Set Plays Curricular Model

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Background/Purpose: Sports and games are a fundamental part of school physical education (PE) curriculum. Many game-centered approaches have been developed to teach sports and games in school PE classes, including but not limited to techniques-focused approach, Tactical

Games Approach/TGfU (Bunker & Thorpe 1986), Sport Education (Siedentop, 1994; Siedentop, Hastie, Van der Mars, 2011), and Play Practice (Lauder, 2001; Launder & Piltz, 2011). Recently, Li & Xie (2018) have proposed a curricular model named *Situated Game Teaching through Set Plays* (SGTSP) to teaching sports and games in PE based on the theory of situated learning (Lave & Wenger, 1991). The goal of SGTSP is to develop students' game competence through situated, relational set plays to enjoy a healthful lifetime physical activity. There are four components in SGTSP: (a) situated set play, (b) cue perception, relational analysis and decision making, (c) execution of situated set play, and (d) game performance. Currently, no study has been conducted to investigate students' perceptions of its effectiveness on their learning in PE. Students' perceptions significantly affect their behaviors (Beasley & Garn, 2013; Jaakkola et al., 2013). Therefore, the purpose of this study was to investigate secondary student's perceptions of SGTSP in a 5-day soccer unit.

Method: Twelve 6th graders from one intact class which was taught under SGTSP voluntarily participated in this study. Participants' written responses to six questions regarding their perception of SGTSP were collected through three reflection journals on Day 1, Day 3, and Day 5 across the soccer unit. Researcher's field notes and informal interviews with the PE teacher were used to triangulate the reflection data. Inductive and constant comparison analysis (Strauss & Corbin, 1998; Taylor & Bogdan, 1998) were used to analyze the data.

Analysis/Results: Five themes emerged from the data with regards to 6th graders' perception of SGTSP: (a) perceived improvement in techniques. More than two third of participants perceived their skills in dribbling, controlling, passing, and shooting improved. (b) Perceived improvement in tactic learning. More than half of the participants perceived their soccer tactics and understanding of game concept improved, including moving to get open and how to play a defense and offense role in game situations. (c) Challenges of SGTSP learning tasks. One third of the participants felt struggled in passing accurately to their teammates and ball controlling. (d) differences between SGTSP and other approaches. Half of the participants perceived SGTSP was different from other approaches, including (a) teaching more specific tactics (i.e., 'tricks', 'set ups', 'game scenarios') (b) teaching how to cooperate with teammates, and (c) helping make more improvements in techniques and tactics. That is, students made more appropriate movements and decision-makings during their practice and game play.

Conclusions: The findings suggest that students demonstrated positivity toward SGTSP. SGTSP may

have the potential to develop students' game performance by improving their techniques and tactics.

Physical Education in Brazil: Transitioning From Guidelines to Compulsory Curriculum

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Background/Purpose: Approximately twenty years ago, the Brazilian National Curriculum Parameters (a.k.a. Parametros Curriculares Nacionais [PCN]) (Brasil, 1997) were established as K-12 guidelines. The PCN in physical education (PE) provided teachers with knowledge base of competencies that could be adjusted to diverse school cultural and socio-economic background, and with autonomy over their own curriculum development. Recently, a compulsory National Common Basic Curriculum (a.k.a. Base Nacional Curricular Comum [BNCC])(Brasil, 2017) was published and it has been in dissemination process. The purpose of this presentation is to describe the evolution of the Brazilian PE curriculum from the beginning of the XX century until the establishment of the BNCC.

Method: The method adopted in this study is a review of the literature focusing on the history of PE in Brazil, and on the national curriculum documents published by the Brazilian Ministry of Education.

Analysis/Results: Similar to other nations, Brazil was influenced by different conceptual, political, philosophical, scientific and pedagogical models (Betty, 1991). In the XX century, the PE curriculum evolved from the hygienist perspective, which consisted of nurturing health bodies of highly productive workers and soldiers, to the influence of German and Swedish gymnastics. Later, it was followed by the specialization in sports, which intended to identify elite athletes to represent the country in international events. Subsequently, an educational movement, influenced by John Dewey's experiential learning theory, began and strengthened the distinction between PE and physical activity. From this movement forward, PE became associated with the concept of *culture of the body*, targeting students' development of competencies such as quality of movement, autonomy, potentiality and possibility for self-regulation to benefit the pursuit of a healthy lifestyle (Darido, 2003). With the utilization the concept of *culture of the body* as central theme, the PCN document was launched as a national curriculum guideline. In

December of 2017, the BNCC was published and established as a compulsory curriculum.

Conclusions: It was reported (Ferraz, 2012) that the PCN intended to: (a) give space for negotiations that typically occur within relationships among teachers and students in the classroom, and (b) legitimize teachers as the actual curriculum designers, since they have the ability to perceive, create and assess what is relevant to the students. There is no empirical evidence on how effective these guidelines were applied nationwide or on how students responded to them. The concept of *culture of the body* still remains as a central theme of the BNCC, but this time its utilization is compulsory. The fidelity of the BNCC implementation will be a challenge in for inservice and preservice teachers across a country, which represent a plethora of cultural and socio-economic contrasts. As Ball and Bowe's (1992) pointed out, even though teachers may comply with public curriculum policies, they interpret and give them personal meaning based on their own history, attributions, and context. Future research will play a fundamental role to examine the effects of the transition from recommended guidelines to compulsory curriculum in a large and diverse country such as Brazil.

Reexamining the Relationship between Sports Participation and Academic Achievement Growth

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Background/Purpose: Given the increased positive relation between physical education and student academic achievement, it is also important to consider sports programs and academic benefits. Similar to engaging in physical education, participating in school and nonschool sports offers chances for students to be physically active and healthy which may affect educational/occupational attainment (Barber et al., 2001; Danish et al., 2005; Holt et al., 2008). Additionally, students' sports engagement during adolescence appears to be one influential factor on physical activity level during adulthood (Dohle & Wansink, 2013). However, there have been mixed/inconsistent findings on the association between sports participation and academic performance (Broh, 2002; Daley & Ryan, 2000; Hunt, 2005; Stephens & Schaben, 2002). Further, little research compared school and nonschool sports participation and its links to academic achievement gains in secondary school. This study aimed to examine the comparison of school and nonschool

sports and relationships to academic achievement growth in high school.

Method: This research used data from the National Education Longitudinal Study of 1988. Data were drawn from the base year (1988, 8th grade) and the second follow-up (1992, 12th grade). The final analytic sample comprised 6,274 students from 653 schools in reading, 6,282 students from 653 schools in mathematics, and 6,249 students from 653 schools in science. Key outcome variables of interest were academic achievement growth and gain scores between 8th grade and 12th grade were calculated, representing student learning over the high school period. Primary independent variables were participation in school and nonschool sports including different types of sports and frequency of engagement. Various control variables (student, family, school) were also included.

Analysis/Results: Descriptive statistics and multilevel analysis were conducted based on the nested structures of research question and complex design features of data. Results showed that students' school sports participation was significantly negatively related to achievement growth in reading and mathematics. As students participated in one more school sport, their reading achievement growth decreased by 0.52 points. As students participated in one more school sport, their mathematics achievement growth decreased by 0.44 points. No significant association was found between students' nonschool sports participation and reading and mathematics achievement growth. Likewise, in science, students' school sports participation was significantly negatively related to science achievement growth. As students participated in one more school sport, their science achievement growth decreased by 0.22 points. Unlike in reading and mathematics, however, students' nonschool sports participation was significantly associated with achievement growth in science. Students who participated in nonschool sports more frequently had lower science achievement growth than those who did not or less frequently participate in nonschool sports by 0.30 points.

Conclusions: Inconsistent with previous research, this study found negative relations between school and nonschool sports participation and academic achievement growth in core subjects, indicating subject-specific debilitation. Therefore, it is cautiously concluded that simply encouraging participation in school or nonschool sports may not be the answer to promote physical activity or health and academic performance for adolescents. More research is needed to clarify the relationship and mechanism or other influential factors.

Retrospective Examination of Attitudes Toward Dodgeball in Physical Education

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Background/Purpose: While many of the SHAPE America appropriate practices (SHAPE AMERICA 2014) have gained wide-spread acceptance, a few practices still are up for debate (Barney, et.al., in press) and have been dubbed the "Repeat Offenders." Included in this list is the continued, but hotly debated practice of teaching/playing dodgeball in physical education. In addition to appropriateness of dodgeball in PE, the ideas of leaving less skilled students behind and of "bullying" were explored. The purpose of this study is to examine past student attitudes toward dodgeball and its appropriateness for PE classes.

Method: This mixed methods study asked participants ($n=239$ participants; 113 males and 126 females) to agree/disagree to a series of seven questions (using a five point Likert-type scale) about their experience with and opinion toward dodgeball in PE. In addition, students were asked to give an open-ended response as to why they answered as they did. Descriptive statistics were analyzed and compared across gender and age. Open-ended questions were transcribed and content analyzed.

Analysis/Results: Descriptive statistics (*means, SDs*) were examined for normality and Pearson correlations were examined for each item. On average participants indicated that they were first introduced to dodgeball in PE and played twice weekly throughout the school year. Responses were compared across gender and age. Gender effects were evident with females having a significantly less favorable attitude toward the practice even as a co-ed activity. Significant correlations were consistent across genders. Notable positive relationships included: as perceptions of less skilled students being left behind rose so did perceptions of bullying. Inverse relationships included: (a) as perceptions of less skilled students being left behind rose then appeal for co-ed play went down; (b) as the frequency of play increased, the appeal of co-ed play went down.

Conclusions: Despite the long-standing position of dodgeball as being inappropriate for PE, former students report playing it at least twice-monthly, are more positive than negative, and do not think that it adversely affects student skill acquisition. This study confirms the ongoing practice of dodgeball in PE, bringing in to question actual practices of rank and file PE teachers and that students are not as alarmed as one might suspect them to be.

Sexuality Education: Out of the Closet and into the Classroom

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Background/Purpose: Sexuality education has historically been proffered as a way to augment health promotion objectives within schools (Sears, 1992). Scholarship within sexuality education, however, has found the ‘health promotion’ approach to sexuality education is often irrelevant to students, heteronormative, and produces equivocal health outcomes (Allen, 2004; 2011; Gilbert, 2014; Macleod & Vincent, 2014). Alternatively, the New Zealand Ministry of Education adopted a ‘social justice’ policy (Fitzpatrick, 2018) in sexuality education. The purpose of this paper was to explore how the ‘social justice’ approach influenced curriculum and teaching in sexuality education.

Method: Data were generated during a critical ethnography (Thomas, 1993) that investigated the experiences of 60 LGBTQ youth (aged 13-25) in health, physical activity, and education within New Zealand. The 5-month ethnography was based in a queer organization that partnered with schools and communities. The ethnography used an assemblage (Fox & Alldred, 2016) of data generation methods that included: (a) 25 individual semi-structured interviews (Creswell, 2012), (b) 13 group-interviews (Fontana & Frey, 2005), (c) daily observations (Marshall & Rossman, 2011), (d) ethnographic memos (Emerson et al., 2008), and (e) artifact collection (Pink, 2015). Data were analyzed using sociological techniques: (a) dredging (Fox & Alldred, 2017) and (b) mapping (Ringrose & Coleman, 2013). Trustworthiness, credibility, and plausibility (Merriam, 2009) were established via crystallizing the data (Ellingson, 2009).

Analysis/Results: Results are split in two sections. ‘Micro-changes’ explore how individual students shifted the sexuality education classroom. ‘Macro-changes’ describe how students organised to change their sexuality education program.

Micro-changes: Speaking Back. During sexuality education, some LGBTQ students resisted heteronormative lessons by ‘speaking back’ to teachers. For example, when one teacher was explaining consensual sex as between a ‘man’ and ‘woman’, a queer identified student asked about same-sex consent and the laws protecting transgender persons. In many cases, teachers were unable to respond to student feedback, but sometimes they were prepared. For example, one teacher used a ‘question box’ for students to ask questions anonymously. When the ‘question box’ was filled with queer-based questions, the teacher answered them to

the best of her knowledge, but also had students research answers. In these examples, individual students and teachers produced ‘micro-changes’ to curriculum and pedagogy.

Macro-changes: Taking Over. On the whole, teachers were unprepared to teach gender and sexual diversity in sexuality education. In some cases, the school’s student-led ‘Rainbow Group’ organised, took over, and taught sexuality education forcing ‘macro-changes’ in curriculum and teaching. The ‘rainbow’ students taught about: (a) gender and sexual diversity, (b) sexual well-being, (c) indigenous knowledge and values, (d) abuse cycles in relationships, (e) safe sexual practices, and (f) critically analyzing media. Many of the students claimed they learned more from the new approach and were comfortable talking to their peers about issues related to relationships, gender, and sexuality.

Conclusions: The purpose of this study was to explore how a ‘social justice’ approach could influence curriculum and teaching in sexuality education. In this study, the social justice approach to sexuality education led to student-centered experiences that increased comfort, knowledge, and queer visibility.

Students’ Perception of the Self-Assessment Process in High School PE

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Background/Purpose: According to SHAPE America’s Executive Report (2016), the goal of physical education is to address the needs of the whole child, by helping students exercise both their bodies and minds, ultimately impacting all aspects of health. Within education, students are becoming significantly and detrimentally disengaged, specifically within the assessment process. An implicit aim of education is to enable students to become better judges of their own work by engaging in self-assessment. The purpose of this study was to examine students’ perception of the self-assessment process in physical education.

Method: Participants were physical education students ($N = 34$) from one high school physical education class ($n = 34/F-33, M-1$) in the Midwestern U.S. The school and participants were selected due to convenience sampling. Participants completed an aerobic routine project and then completed a self-assessment of their project. The aerobic routine project required participants to create an original aerobics routine and to teach the entire class the routine. The physical education teacher video recorded each routine. After the completion of the routine the students

watched their video and completed a self-assessment rubric. Upon completion of the self-assessment, the participants responded to a questionnaire (eight open-ended questions) relating to students' perception of the self-assessment process in physical education. One certified physical education teacher with eight years of experience administered the assignment and questionnaire.

Analysis/Results: Participants' responses to the eight open-ended questions was analyzed through the process of open coding and constant comparative techniques to identify initial themes and categories. After analyzing the questionnaire responses, themes and commonalities emerged that are considered significant and meaningful to this research study.

Three significant themes emerged from this study: a) Self-assessment helps improve future performance, b) Self-assessment increases motivation and self-efficacy during physical education, c) Self-assessment increases communication between student and teacher. Results for the first theme is significant because it supports SHAPE America's (2016) theory that the primary goal of assessment should be seen as the enhancement of learning, rather than simply the documentation of learning. Results of theme 2 demonstrates that by creating a shared understanding of the assessment process and the criteria for success, students have increased effort and persistence toward being successful learners and performers. Theme three results indicate that when used properly self-assessment allows teachers to effectively interact with and personalize learning for students.

Conclusions: Assessment in education is one factor that continues to impact students' learning, and physical education is no exception. The findings from this study extend on past research in the field of assessment, specifically looking at the self-assessment process in physical education. Results from this study show that self-assessment helps improve future performance, increases motivation and self-efficacy during physical education, and increases communication between student and teacher. These are all traits of meaningful assessments, which help contribute to the perceived positive value of participating in assessments in physical education.

Task Adaptations as a Function of Content Knowledge

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Background/Purpose: Previous research has shown that teachers' content adaptations differ as a function

of their expertise (Ayvazo & Ward, 2011). Under the framework of behavior analysis, a teacher's decision to modify a given task to meet students' needs does not happen randomly. When a student's skill performance is for example, incorrect (= antecedent), the teacher might decide to adapt the task (= response) which results in the student performing the skill correctly (= consequence). Many possible combinations of these contingency relations are possible and it is commonplace for teachers to establish patterns of relations among the elements. The antecedent-behavior-consequence interaction is defined as the three-term contingency. The purpose of this study was to conduct a functional analysis of the three-term contingency leading to adaptations to examine how teacher's task adaptations differ as a function of content knowledge in freestyle swimming.

Method: The sample consisted of 73 elementary school children in seven classes. Two teachers each taught two classes, and one teacher taught three classes. All teachers taught the same classes for the entire duration of the study and student performance was assessed at baseline (T1), before a workshop on content knowledge (T2), and at the end of the freestyle lesson unit (T3). About four to five lessons were taught between assessments. The content knowledge workshop consisted of knowledge of techniques, rules and etiquette (i.e., common content knowledge) and knowledge of content progressions and common errors in freestyle swimming (i.e., specialized content knowledge). Freestyle performance was assessed by means of the number of strokes needed to swim 50 meters and the sprint time for 50 meters. All data were coded live by trained observers. An adaptation was coded as appropriate if the student was able to perform the task correctly.

Analysis/Results: Prior to the content knowledge workshop, correct performance accounted for 9% of the antecedents and 45% of task adaptations consisted of refining and extending tasks. After the workshop, correct performance was the antecedent in 37% of cases and refining and extending tasks were given in 78% of cases. Prior to the workshop, 51% of adaptations were appropriate compared to 77% after the workshop. A repeated measures ANOVA showed a significant reduction in the number of strokes needed to swim 50 meters as a function of the workshop ($p = .01$). For sprint time, no significant improvement was found as a function of the workshop.

Conclusions: Functional analysis showed a higher proportion of appropriate adaptations as a function of content knowledge. Student performance improved significantly following the content knowledge workshop in terms of stroke reduction for 50 meter crawl swimming.

Teachers' Perceptions of a Sport Education App

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Background/Purpose: Sport Education (SE) is a curriculum model designed for students to engage in authentic sports experiences in the physical education settings (Siedentop et al., 2011). Situated learning was used as a theoretical framework for Sport Education in this study (Kirk & Kinchin, 2003). Teachers' roles in SE are to motivate students and encourage students to be active in terms of social, academic, and physical aspects in classes. Some teachers may have a difficult time using the model due to lack of full understanding about the curricular model (i.e., "knowing about" a curricular approach is different from "knowing how" to implement the knowledge) and the extensive time required regarding planning seasons, compared to traditional physical education (McMahon & MacPhail, 2007). The practical use of digital technology such as mobile applications (Apps) can be helpful for future physical education teacher education programs because both teachers and K-12 students are already using this type of technology (Gowin, Cheney, Gwin, & Wann, 2015). Little is known about the possible effectiveness of using Apps in a SE context, nor about (prospective) physical educators' perceptions on the use of Apps. The purpose of the study was to examine teachers' perceptions of using customized mobile application (*Smart Sports* App) in SE classes.

Method: Participants included seven students in a physical education teacher education (PETE) program using the SE curricular model in their student teaching experience. Data were collected through pre/post surveys related to using the *Smart Sports* App. PETE students completed the survey before and after using the *Smart Sports* App in class over one month. The surveys focused on the students' views of their first experience using the *Smart Sports* App and consisted of three open-response sections: (a) how they prepared for their SE season and what corresponding functions should be including in the customized App, (b) use and usefulness of the App, and (c) suggestions for changes to improve the App.

Analysis/Results: Two themes emerged from pre-survey: (a) participants looked forward to cutting down paperwork by using the *Smart Sports* App and (b) they also wanted to learn how to incorporate the App for an easier time recording team

scores, wins, losses, and ties. Only two participants, however, were familiar with using mobile applications in their teaching. Post-survey themes included: (a) The participants reported that the *Smart Sports* App was useful for helping keep track of SE statistics, scores, fair play points, using music, time management, etc.; (b) it made using SE less stressful (particularly in lesson planning, gathering of performance data, and reducing paperwork); and (c) they wanted to add more sport varieties and more ways of keeping score for various sports in scoreboards.

Conclusions: The use of mobile Apps can be an effective way for preservice and novice teachers to learn the SE model in a situated learning environment. The *Smart Sports* App was effective in reducing teachers' work and providing them with an effective way of infusing technology into their teaching and easing the process of learning to do SE.

The Impact of Content Knowledge, Specialized Content Knowledge, Peer Analysis and Self-Analysis on Preservice Physical Education Teachers' Error Detection Abilities

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Background/Purpose: The mission of physical education teacher education programs (PETE) is to instill physical educators with the skills, knowledge and dispositions to teach others how to become physically literate individuals. Developing students who are competent and skillful movers is one of the most important roles of a physical educator (Society of Health and Physical Educators [SHAPE], 2013). Walden and Travers (1963) suggested two processes are the essence of teaching motor skills. The first is diagnosis, which is the ability to compare a learner response that has been elicited, observed, and evaluated, to preestablished criteria (behaviors). The second, intervention or prescription that is based on the evaluation and the decision about what needs to happen next in order to narrow the gap between the observed performance and movement criteria. It is important that PETE programs understand how to increase specialized content knowledge (SCK), specifically error detection skills, in order to better prepare students for their teaching careers. The purpose of this study was to investigate the change in SCK, specifically error detection skills, as a result of a short workshop and the use of video analysis (either peer analysis or self-analysis) of skill performance.

Method: Participants were 20 undergraduate physical education teacher education (PETE) students (12 male and 8 female) enrolled in PETE courses. A pretest, post-test experimental design was used to determine the effectiveness of increasing undergraduate students' SCK through a CCK and SCK workshop and video analysis. Pretest procedures included participants viewing a middle school male and female performing a volleyball forearm pass and evaluating the performance by indicating if they observed or did not observe the critical elements. The CCK and SCK workshop included instruction of the critical elements of the pass and common errors typically demonstrated by beginners. Video analysis included participants evaluating a peer or themselves performing 10 volleyball passes. The study concluded with a post-test evaluating the same male and female middle school student.

Analysis/Results: A two-way repeated measures ANOVA was used to compare the pre and post-test means. Results indicated post-test means for the peer analysis and self-analysis groups were significantly higher than pretest mean scores. No significant difference was found between groups. Results revealed a trend of participants scoring the lowest on the pretest evaluation showing the largest change in error detection ability from pretest to post-test.

Conclusions: A short workshop and video analysis increased error detection ability for the volleyball forearm pass in undergraduate PETE majors. Physical education teacher education programs may want to consider implementing short instructional episodes as well as video analysis to improve error detection skills. The instructional episode and video analysis may be particularly helpful for those with less CCK and SCK of the skill.

The Influence of Socialization Factors on Physical Educators' Conceptions of Assessment and Perceived Quality of Assessment

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Background/Purpose: Although scholars argue that assessment is an integral component of the teaching-learning exchange in physical education, it is still far from being regular, integral, widespread, and productive (López-Pastor, Kirk, Lorente-Catalán, MacPhail, & Macdonald, 2013). Given that many physical education recruits do not experience assessment during their

formative education (Stern & Keislar, 1977), many develop belief systems that do not value assessment (Starck, Richards, & O'Neil, 2018). Understanding the lack of assessment in physical education, therefore, requires an examination of both workplace factors and individual beliefs. Little is known, however, about how these environments influence teachers' assessment literacy. However, it is likely that class size, perceptions of organizational support and marginalization influence teachers' assessment practices. Using occupational socialization theory (Richards & Gaudreault, 2017), this study sought to understand the influence of workplace factors and teachers' conceptions of assessment on the extent to which they report integrating quality assessment into their practice.

Method: Participants included 90 inservice physical education teachers (47 males, 43 females) from the state of Alabama who had been teaching for an average of 15.6 years and were teaching at primary ($n = 42$; 47%) and secondary levels ($n = 44$; 49%) with few teaching across schools ($n = 4$; 4%). Participants completed an online survey beginning with a demographic questionnaire. Measures of workplace factors included the Survey of Perceived Organizational Support (Eisenberger, Huntington, Hutchison, & Sowa, 1986), the Marginalization subscale of the Physical Education Marginalization and Isolation Survey (Gaudreault, Richards, & Woods, 2016). The next section included Teachers' Conceptions of Assessment III (Brown, 2006), including (a) assessment makes school accountable, (b) assessment makes students accountable, (c) assessment improves education, and (d) assessment is irrelevant. The survey concluded with the Quality of Assessment subscale from the Physical Education Assessment Questionnaire (Borghouts, Slingerland, & Haerens, 2017).

Analysis/Results: Using IBM SPSS 23.0, teachers' perceived quality of assessment was regressed on workplace factors (perceived organizational support, marginalization, and class size) and conceptions of assessment using Ordinary Least Squares regression. The first regression model (adjusted $R^2 = .08$) did not include any significant predictors, so a second was run to examine if workplace factors and conceptions of assessment could be used to predict the belief that assessment improves education. In the second model (adjusted $R^2 = .66$) the following variables were significant: assessment makes school accountable ($\beta = .45$, $p < .001$), assessment makes students accountable ($\beta = .19$, $p = .007$), assessment is irrelevant ($\beta = -.16$, $p = .047$), marginalization ($\beta = .14$, $p = .017$), and perceived organizational support ($\beta = .19$, $p = .001$).

Conclusions: The importance of this study lies in how schools prioritize teacher effectiveness in conjunction

with teachers' assessment literacy given their reported conceptions of assessment for accountability and irrelevance when using assessment for improvement (DinanThompson & Penney, 2015). Due to marginalization and perceived organizational support influences on utilizing assessment for improvement, there is a call to educate administration and policy makers on the contextual differences of physical education and what quality physical education teaching looks like (Rink, 2014).

The Ontological Foundations of Constructivist Realism: PE Curriculum Construction

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Background/Purpose: The Society for Health & Physical Educator's posits that a physical education program should have a written, sequential curriculum for all grades aligned with the national standards for physical education. Despite varying definitions & applications, an effective curriculum is tailored to the characteristics of learners as a means of producing desired learning outcomes. For purposes of this research study, the term "*curriculum*" is defined as a system of planned actions that unifies all learning experiences into common learning outcomes (Feinberg, 1990). Additionally, when curriculum development or reform transpires, educators and especially physical education teachers are not asked to be part of this process (Rink, 2009). Curriculum reform in physical education is blending the ideas from curriculum theorists. By merging the theorist's work, a six-step curriculum development model was cultivated to construct curriculum. This study reports on how the six-step physical education curriculum development model (1) denote the subject, 2) identify desired results, 3) gather evidence of student learning, 4) plan the instruction, 5) develop the curriculum framework, & 6) reflect on the curriculum) was utilized to construct a physical education curriculum in a Southwestern school district.

Method: Constructivist realism is an ontological position that accommodates the best of positivism and constructivism. The analysis employed a hybrid approach, which utilized both the data driven inductive approach and the deductive approach, as the teacher's voice is better represented. The deductive analysis was used in the study, due to a clear structure of analysis based on previous knowledge, the six step curriculum development model. The inductive approach worked from the bottom up, using

the participant's views to build themes via formal interviews, discussions, and informal interviews for aspects of curriculum development.

Certified physical education teachers ($n = 12$) with at least two years of teaching experience and a curriculum director ($n = 1$) formed the curriculum advisory committee & served as participants in the study. The data collection began in the summer of 2007 and concluded in the fall of 2015.

Analysis/Results: The results of this study are presented in three parts: (a) a deductive analysis of the six-step curriculum development process, (b) PECAT analysis, and (c) inductive reasoning by which themes and categories emerge from the data through the researcher's careful examination of discussions, structured interviews, and informal interviews. Specifically, themes identified were a common vision & empowerment as voices were valued throughout the curriculum development process.

Conclusions: This study provides a clear example of a curriculum advisory committee's knowledge being valued throughout the curriculum development process by embedding questions into the curriculum development process. Effective schools must empower individuals to have their voices & ideas in the universe of creation rather than implement curricular reform without embedding the ideas of practicing educators. The analysis of the curriculum development model describes the construction process in detail, which can act as a blueprint to help change agents apply the model in a uniform way. Moreover, by allowing educators voices to be heard, organizations can create meaning to resolve complex health issues.

Tracing Socialization in Sport Education

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Background/Purpose: Models-based practice highlighting the interplay of learning, teaching, and subject matter have been on the forefront of contemporary physical education programs (Casey, 2014; Kirk, 2013) with researchers providing supporting evidence and making a case for their effective use (Hastie & Wallhead, 2016; Sinelnikov & Hastie, 2016). Furthermore, models-based practice, such as Sport Education, is an important consideration for the successful and effective practice of physical education in schools (Lund & Tannehill, 2010; Metzler, 2011; Siedentop, 2002). In physical education,

occupational socialization theory is used to understand the dialectic process educators experience throughout their lives (Lawson, 1983). There are three main phases to this process: acculturation, professional socialization, and organizational socialization, with a fourth phase of secondary professional socialization recently being identified (Lee & Curtner-Smith, 2011). Sport pedagogy scholars advocated for longitudinal investigations of how experiences with Sport Education across each phase influence students and teachers (Wahl-Alexander, Sinelnikov, & Curtner-Smith, 2016).

Purpose: This study diachronically traced the influence of Sport Education in socialization experiences of a physical education teacher. Using occupational socialization as a theoretical framework of inquiry, we specifically aimed to examine acculturation, professional socialization and organizational socialization of a physical education teacher who has experienced Sport Education in all phases of the socialization process.

Method: A 22-year old physical education teacher was purposefully selected based on his experiences with models-based practice during three phases of occupational socialization: acculturation, professional socialization, and organizational socialization. According to the classification typology (Thomas, 2011), this was a singular diachronic case study characterized by having a temporal element about the sequential relationship of events and referring to change occurring over time. Data were collected from interviews (3x60 min.), stimulated recall interview (60 min.), and documents such as autobiographical essay, critical incident reports, observations, unit and lesson plan, content maps, and teaching reflections.

Analysis/Results: Thematic coding was used to analyze data (Rubin & Rubin, 1995). Data and researcher triangulation procedures, member checking, an audit trail and a search for discrepant cases ensured trustworthiness. The following themes were identified: (a) it just means more; (b) stepping into the ring; (c) it runs deep; and (d) it takes a village.

Conclusions: This was the first study that investigated the experiences of an individual who has engaged in Sport Education in each socialization phase, both as a participant and as an educator. Findings revealed that Sport Education “just meant more” to the participant as it was seen as a “Swiss army knife of pedagogical models” in its flexibility and multidimensionality. Experiences of participation in Sport Education during middle school years helped the participant develop subjective theories and adopt certain principles based on notions of Sport Education in later years as a preservice and a physical education teacher, a finding which is consistent with occupational

socialization literature. Yet contrary to some research suggesting the limited nature of professional socialization (Curtner-Smith, 1999; Richards et al., 2014), the findings of this study revealed a potency of PETE’s influence when coupled with positive experiences in models-based practice during the acculturation phase of one’s development.

Validation of a Soccer Performance Test for Physical Education Teachers

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Background/Purpose: Common content knowledge (CCK) refers to teacher knowledge of rules, techniques and/or tactics of movements (Ward, 2009). Recently there have been a number of studies that reported on the validation of CCK tests for teachers (Dervent., et al., 2018; He et al., 2018). These studies have provided a foundation to evaluate CCK in preservice and inservice teachers. An important teaching skill in PE is to be able to demonstrate the technique and/or tactics of movements. There are no validated tests assessing teacher’s performance. Developing valid and reliable CCK performance tests (CCK-P) is an important step in assessing the extent to which teacher education programs teach CCK-P; and to measure the quality of the CCK-P possessed by physical education teachers. The purpose of this study was to evaluate the validity and reliability of the test of soccer CCK-P (TSCCK-P).

Method: Content development of the test was established by asking 20 PETE programs in China to share their existing class tests. Seven soccer experts evaluated these tests and created four performance tests with eight performance criteria. The test and scoring criteria were given to 20 expert Chinese PE teachers. These teachers reported that the tests represented their expectations for the performance of PE teachers China. The tests assessed dribbling, passing, receiving and defensive skills, with Cronbach’s alphas of 0.801. All tests were scored using a 3-point rubric. Students performed three trials, all were video-taped and coded offline. The sample was 386 students (83.7% males and 16.3% females) from six universities. Rasch analysis was conducted to evaluate the responses from the questions in TSCCK-P using the Facets Version 3.66 (Linacre,

2010). Participants also completed a learning history questionnaire.

Analysis/Results: A total of 209 (54.1%) students had never play soccer before college and 177 (45.9%) had played. In terms of soccer training in college, 29.02% (112) of students have not started, 36.01% (139) half year, 29.53% (114) one year, and 5.55% (21) more than one year. Person fit statistics indicated that 12 of 386 (3.11%) students were found to misfit according to infit statistics, and 18 students (4.66%) were misfits according to outfit statistics, suggesting noticeable variability of these students' performance from the expected model. The item and person reliability were: 0.98 and 0.81, item separation was 6.53 and person separation was 2.07 indicating moderate to high reliability. All the items fit range fell between 0.5 to 1.5, indicating the item responses fit the model. Items were well distributed in terms of their difficulties, with logits ranging from -0.81 to 1.21 (SE: 0.07 to 0.08). The item-person map also showed that for this group of 386 students the 24 items shows very good item targeting with person ability.

Conclusions: The TSCCK-P is the first of tool with data supported to measure CCK of soccer performance in physical education. This is one of few studies to use the Many-faceted Rasch model for tool development in physical education research. The Rasch analysis provided evidence for construct validity, and demonstrated acceptable internal consistency of TSCCK-P.

Variables Related to Teaching and Assessing Health-Related Fitness Content Knowledge Among U.S. Physical Educators

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Background/Purpose: Physical activity (PA) is associated with numerous health benefits and is an important outcome of school physical education (PE). To promote student PA in and outside of school, physical educators must facilitate student knowledge and skills for lifetime PA through teaching and assessment of health-related fitness content knowledge (HRFK) and by modeling a healthy lifestyle. In spite of growing concerns about childhood obesity due to sedentary lifestyles, little is known about factors influencing physical educators teaching and/or assessment of student HRFK. The purpose of this study was to determine the extent to which physical educators teach and assess

HRFK and examine associated variables related to changes in teaching and assessing HRFK.

Method: Physical educators ($N=796$) from seven US states representing each SHAPE America regional district completed a 28-item survey assessing their teaching and assessing of HRFK, their individual PA level, and demographic information. The Physical Education Curriculum Analysis Tool (PECAT) for standards 3 and 4 (Centers for Disease Control, n.d.) was adapted to a 5-point Likert scale in order to assess participants teaching and assessing of HRFK. The values from the modified PECAT were standardized and scored with 24 being highest for teaching (tHRFK) and 16 the highest for assessing (aHRFK). The International Physical Activity Questionnaire (IPAQ) was used to determine participants' vigorous, moderate, and light PA levels during the past 7 days, which is indicative of habitual PA (Craig et al., 2003). Additionally, the survey included a demographic questionnaire of education level, years teaching experience, gender, grade-level instructed, and US state of residence.

Analysis/Results: Generalized regression analysis was conducted to determine whether tHRFK and aHRFK by physical educators is predicted by their individual min/week of light, moderate, or vigorous PA or any demographic variables. The tHRFK model resulted in $r^2=0.121$ with all predictors except grade-level instructed and moderate PA statistically significant ($p<0.02$). The aHRFK model showed similar results ($r^2=0.120$), with all predictors significant except moderate PA ($p<0.034$). Noteworthy from these models was the relationship of vigorous PA on tHRFK and aHRFK scores. When examined via Spearman's rho, vigorous PA was significantly associated with both tHRFK ($\rho=0.21$, $p<0.001$) and aHRFK ($\rho=0.196$, $p<0.001$) scores. Additionally, tHRFK and aHRFK scores were significantly associated with each other ($\rho=0.796$, $p<0.001$).

Conclusions: The results of this study indicate a variety of factors contribute significantly ($p<0.05$) to physical educators' teaching and assessment of HRFK, with individual vigorous PA level being a notable factor. In addition, a strong association between teaching and assessing HRFK indicates physical educators are relatively diligent in assessing the HRFK they teach in their PE classes. Though the statistical model predicting tHRFK and aHRFK demonstrated only a weak to moderate association, it provides important information for future research regarding factors related to teaching and assessing health-related fitness content. Further research should consider vigorous PA along with other potentially related variables to more fully describe and predict physical educators' teaching and assessment of HRFK.