

# DRAWING AS A TOOL TO ASSESS THE EFFICACY OF LESSON STUDY

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December 2020

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## Why is Assessing LS a Challenge?

- Various institutional factors
- Various personal factors
- Various ‘facilitational’ factors
- Various “observational” possibilities
- No known tool designed especially for LS

# Why is Assessing LS a Challenge?

- LS is a unique tool for observing different things from different points of view:
  - The evolution of learners (pupils, students, teachers)
  - The evolution of participants (as in their beliefs about teaching, for instance)
  - The evolution of the lesson
  - Our evolution as facilitators
- The tool to assess all of this does not exist. We must make choices.
- We decided to focus on the **evolution of the participants**, who would live through the LS via a **learning-centered facilitation** (Morago & Grigioni Baur, 2017, 2020).

# Why Use Drawing?

- Example of 'thinking in action' (Schön, 1983)
- Visual thinking → insight into what is not explicitly drawn (Goldschmidt, 1991; Gero, 1996; Bonnardel, 2006)
- Drawings can be 'read' (Weber & Mitchell, 1996)
- Representation of an individual's reality at a given moment (Bonnardel, 2006)
- Can be used to assess what happens in a classroom → develop reflexive thinking and practice (Morago, 2015; Morago & Grigioni Baur, 2017; Weber & Mitchell, 1996)

# The Original Tool

- Thomas, Pedersen & Finson, 2001 → DASTT-C
- Instructions:
  - ‘Draw yourself as a science teacher at work.’
  - ‘What is the teacher doing? What are the students doing?’
- Scoring via binary (yes-no) 13-item rubric.
- Attached to this is a self-assessment table, not scored.

# Original Thomas et al. (2001) Rubric

Scoring: 1pt if yes, 0 pt if no.

Add up, gives a score on 13.

The higher the score, the more  
teacher-centered the drawing.  
The lower the score, the more  
student-centered the drawing.

0-4: student-centered

4-9: somewhere in the middle

10-13: teacher-centered

## I. TEACHER

### Activity

Demonstrating Experiment/Activity \_\_\_\_\_

Lecturing/Giving Directions (teacher talking) \_\_\_\_\_

Using Visual Aids (chalkboard, overhead, and charts) \_\_\_\_\_

### Position

Centrally located (head of class) \_\_\_\_\_

Erect Posture (not sitting or bending down) \_\_\_\_\_

## II. STUDENTS

### Activity

Watching and Listening (or so suggested by teacher behavior) \_\_\_\_\_

Responding to Teacher/Text Questions \_\_\_\_\_

### Position

Seated (or so suggested by classroom furniture) \_\_\_\_\_

## III. ENVIRONMENT

### Inside

Desks are arranged in rows (more than one row) \_\_\_\_\_

Teacher desk/table is located at the front of the room \_\_\_\_\_

Laboratory organization (equipment on teacher desk or table) \_\_\_\_\_

Symbols of Teaching (ABC's, chalkboard, bulletin boards, etc.) \_\_\_\_\_

Symbols of Science Knowledge (science equipment,  
lab instruments, wall charts, etc.) \_\_\_\_\_

**TOTAL SCORE (PARTS I + II + III) =**

# Our Modifications

- **What Happens In the Science Classroom –test (WHISC):**
  - Draw a usual science lesson. Write in details what the students and teacher are doing.
- Ideal teaching is **learning-centered** (not student- or teacher-centered)
- Ratio between the three big parts more equal: teacher, students, environment
- Focus on
  - what happens,
  - how tools are used,
  - how furniture is used
  - how people are positioned in the classroom
  - how students and teachers are drawn
- **Three options** for each rubric, scores -1 (student-centered), 0 (learning-centered), +1 (teacher-centered)
- **Part of a 4-parts test** including the self-assessment table (Thomas et al. 2001; modified, Hoznour, 2019), a teaching scenario (Morago & Grigioni Baur, modified) and a questionnaire



# Examples of Rubric Items

## **Teacher:**

- observing students without interfering (student-centered, score -1)
- debating with students, questioning them, actively observing them to foster regulation (learning-centered, score 0)
- talking (teacher-centered, score +1)

## **Students:**

- drawn in more detail than the teacher (student-centered, score -1)
- drawn at least in circles, equal to the teacher (learning-centered, score 0)
- not drawn (or represented as chairs or tables only) or teacher significantly bigger

## **Environment:**

- no teacher's desk (student-centered, score -1)
- teacher's desk doesn't cut space between teacher and students (learning-centered, score 0)
- teacher's desk separates students from teacher (teacher-centered, score +1)

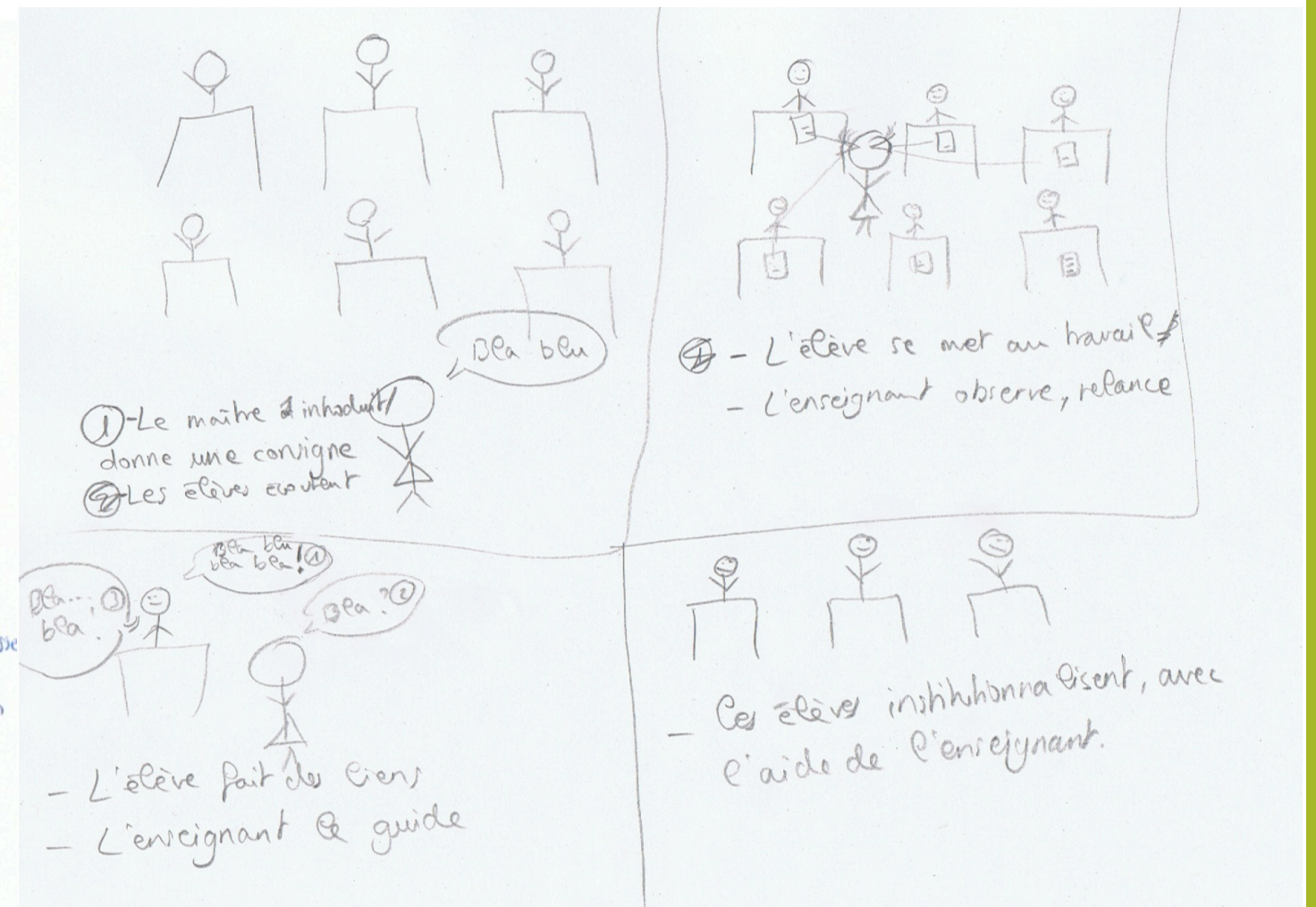
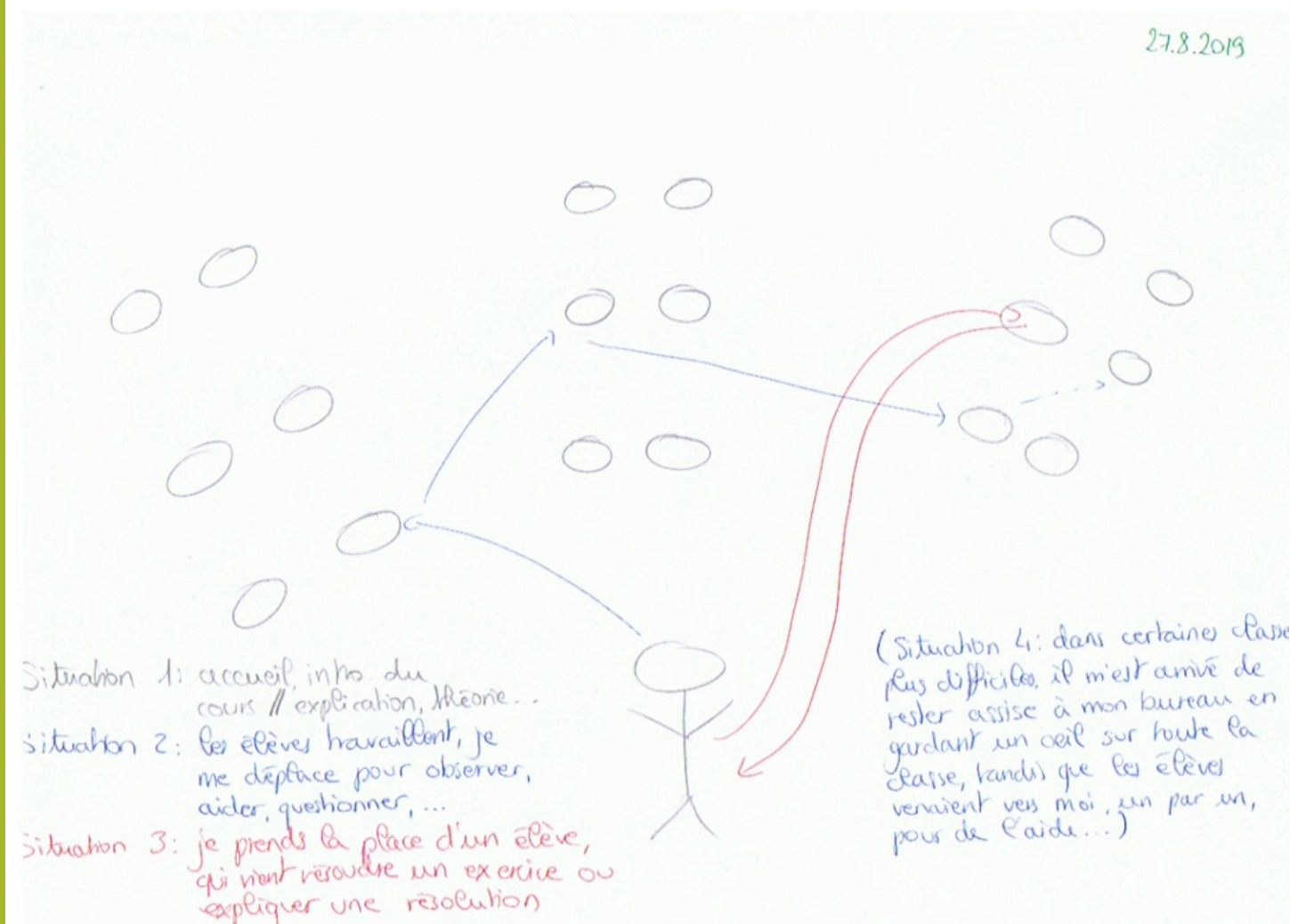
# Scoring Scale

DASTT	0	1	2	3	4	5	6	7	8	9	10	11	12	13													
Scale 2001T	S-C					Intermediate						T-C															
Scale 2001A	S-C					Intermediate			T-C																		
Scale 2020	S-C					L-C						T-C															
WHISC	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13
<p><b>Original DASTT scales</b> (2001T for the scale from the text core and 2001A for the scale from the paper appendix) <b>and WHISC scale</b> (2020). The DASTT is scored on 13 points, while the WHISC is scored on 27. There are also 'transition zones' in the WHISC, three points above and below the Learning-Centered zone.            S-C = Student-Centered; L-C = Learning-Centered; T-C = Teacher-Centered.</p>																											

WHISC scale on 27 points, which gives more information than 13.

Barycentre is 0, as in that feels to us like a good balance between moments of teacher-centeredness, student-centeredness, and conceptual learning.

# Examples of Drawings from a LS



First drawing (start of LS cycle): Score 5

Second drawing (end of LS cycle): Score -1

# Sources



# The Full Test (REF)

- WHISC Drawing → quantitative and qualitative data, access to **unspoken reality and beliefs**
- TSC (Teaching-Style Continuum, Thomas et al., 2001, modified Hoznour 2019, Grigioni Baur & Hoznour, 2020) → quantitative data, **access to relation with prescribed statements** about student autonomy, curriculum, assessment etc...
- Teaching Scenario → quantitative data, **access to how teachers think about the preparation of a lesson**
- Questionnaire about LS → qualitative data about **conception of LS and RL, facilitation, etc..**
- Gives an insight into the tensions within a teacher's head, between what they would like to do and what they actually do. **Shows the discrepancy between the idea of teaching and the actual practice.**

# All the Rubric Items