CS-411 Chapter 9 (extension)

OR

Humans are social animals

Summary of chapter 9

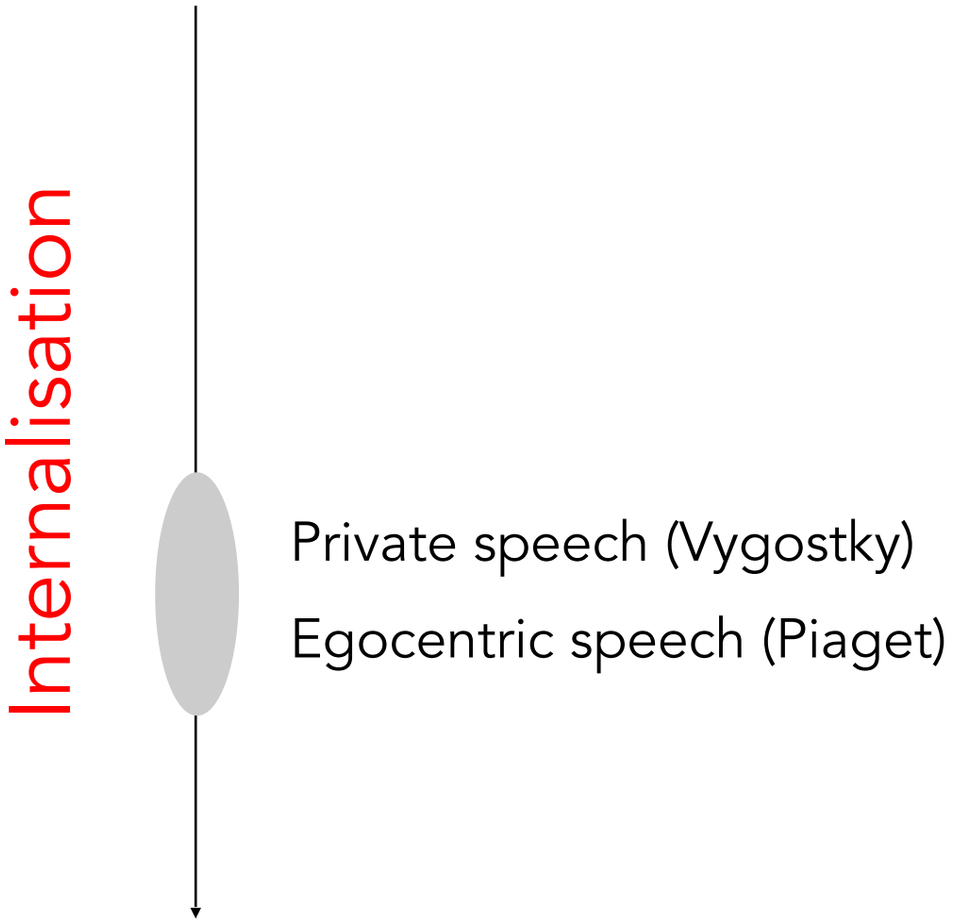
1. Collaborative learning is often effective, but not systematically.
2. Effective tasks require some degree of interdependence among team members
3. It is effective when rich verbal interactions occur such as explanation, argumentation, mutual regulation
4. To make it more effective, classroom scripts increase the probability for students to produce these interactions by integrating team, individual and class wide activities
5. It takes a talented teachers to orchestrate these scenarios
6. **The theory behind emphasizes that cognition is inherently social because thinking mostly relies on language.**

Humans are social animals

≠

Human cognition is social

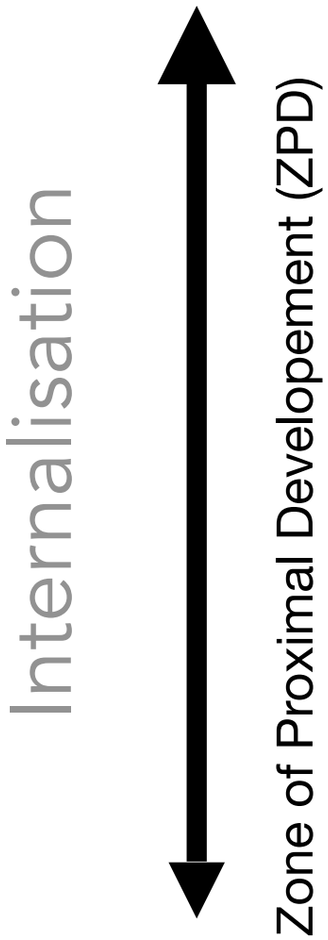
Social Interaction



Reasoning

Thinking is a dialogue with oneself .

Social Interaction



Reasoning

Human Cognition:

The hardware is individual
but
the software is social

The future of learning is personal

By Gary Martin 13/03/2020 - 09:58

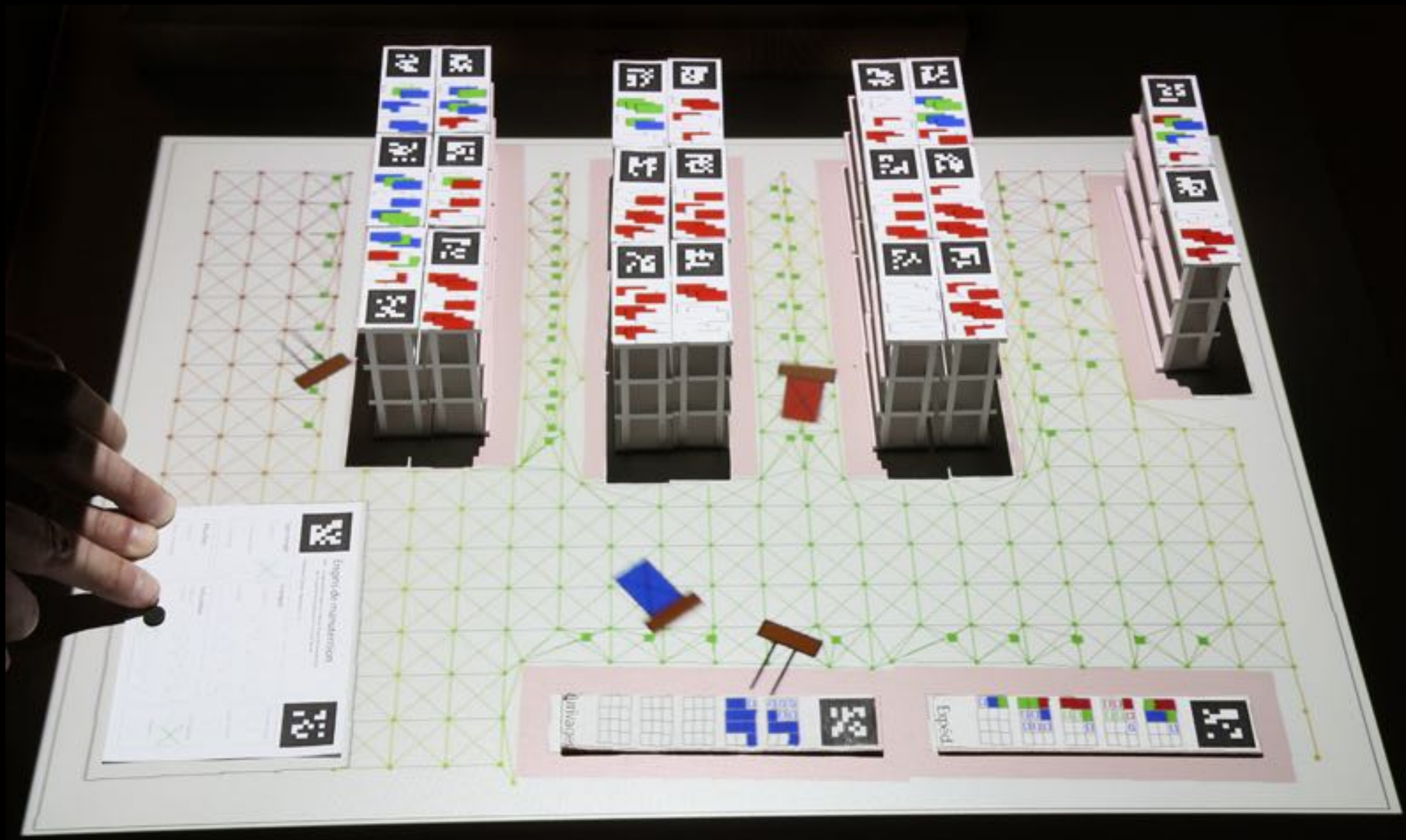
EDUCATION OPINION FREE TO READ

OPINION: Far from making teachers obsolete, personalised learning requires them to use their current skills while developing new ones.

Technology has been a game changer in terms of individualised learning. *Photo: Stockphoto*

Summary of chapter 9

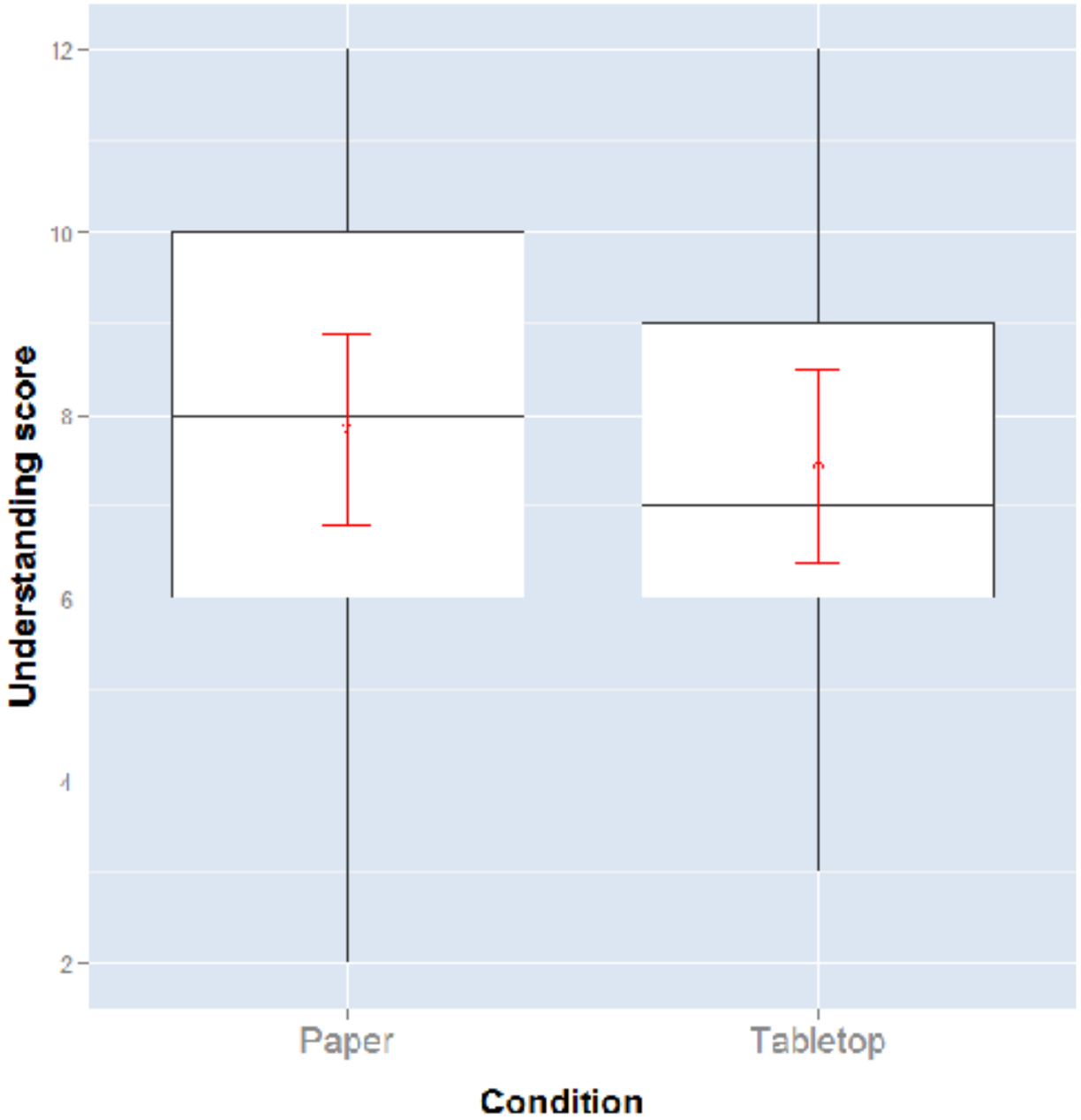
1. Collaborative learning is often effective, but not systematically.
2. Effective tasks require some degree of interdependence among team members
3. It is effective when rich verbal interactions occur such as explanation, argumentation, mutual regulation
4. To make it more effective, classroom scripts increase the probability for students to produce these interactions by integrating team, individual and class wide activities
5. **It takes a talented teachers to orchestrate these scenarios… or technologies that EMPOWER the teachers in their role**
6. The theory behind emphasizes that cognition is inherently social because thinking mostly relies on language.



The TinkerLamp

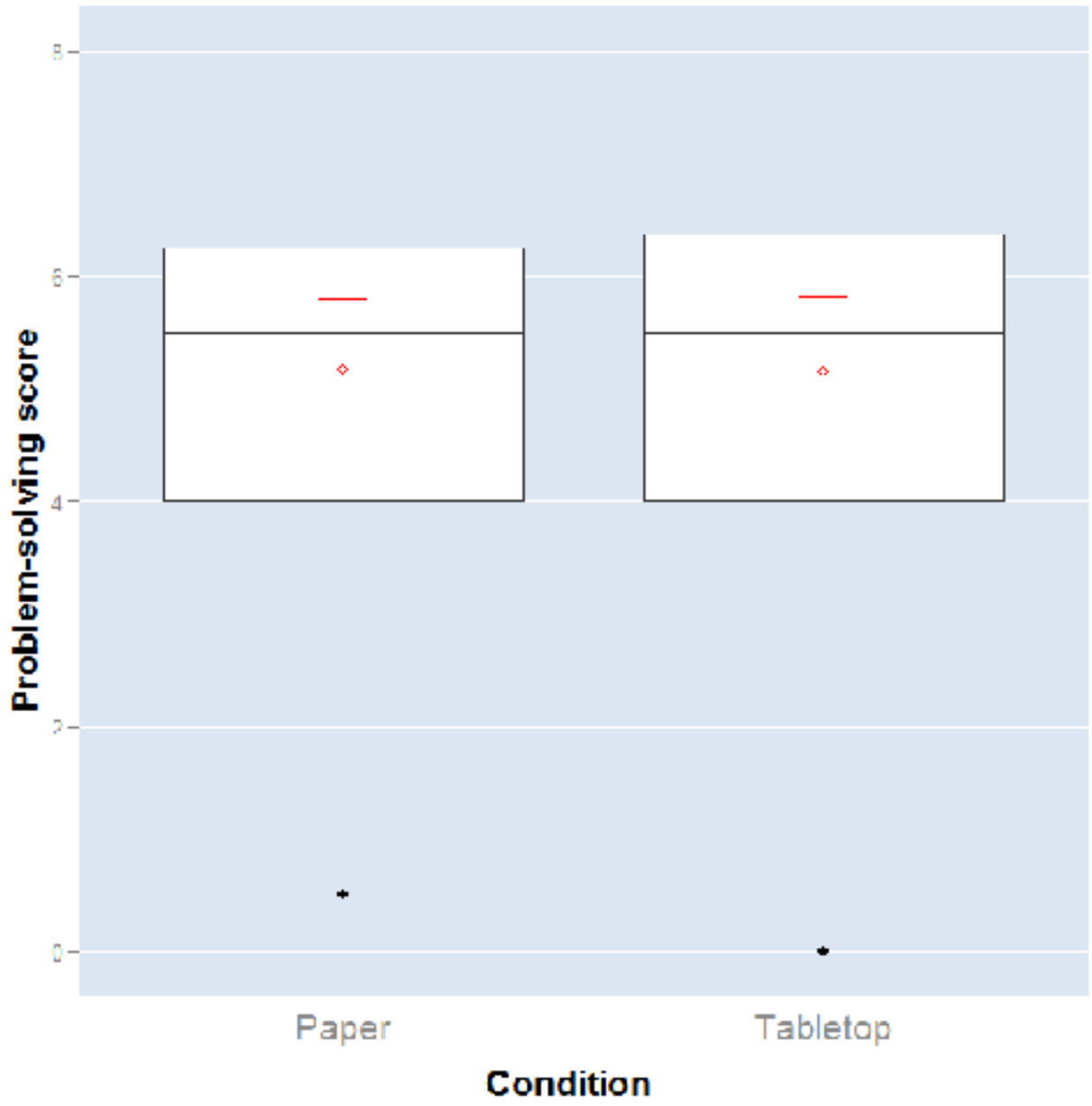
Guillaume Zufferey, Patrick Jermann

No sign. effect in understanding



mean = 7.84 vs. mean = 7.43
F(1,14) = .25; p > .05

No sign. effect in problem-solving



mean = 5.16 vs. mean = 5.15
F(1,14)=.06, p>.05

Son DoLenh, Patrick Jermann

Fiche Simulation
Répartition des surfaces de stockage

Sauver

SIMULATE

GROUP

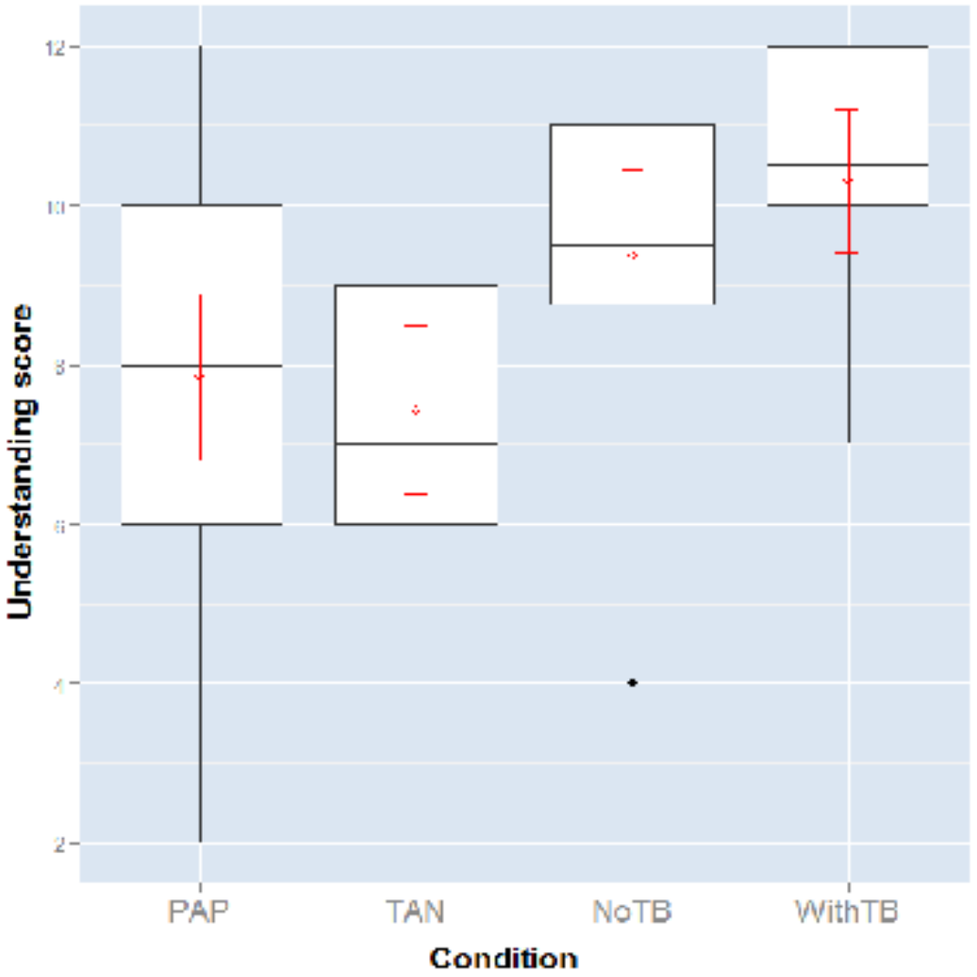
- Run a simulation of the current layout.
- Ask the students to predict before

PAUSE CLASS

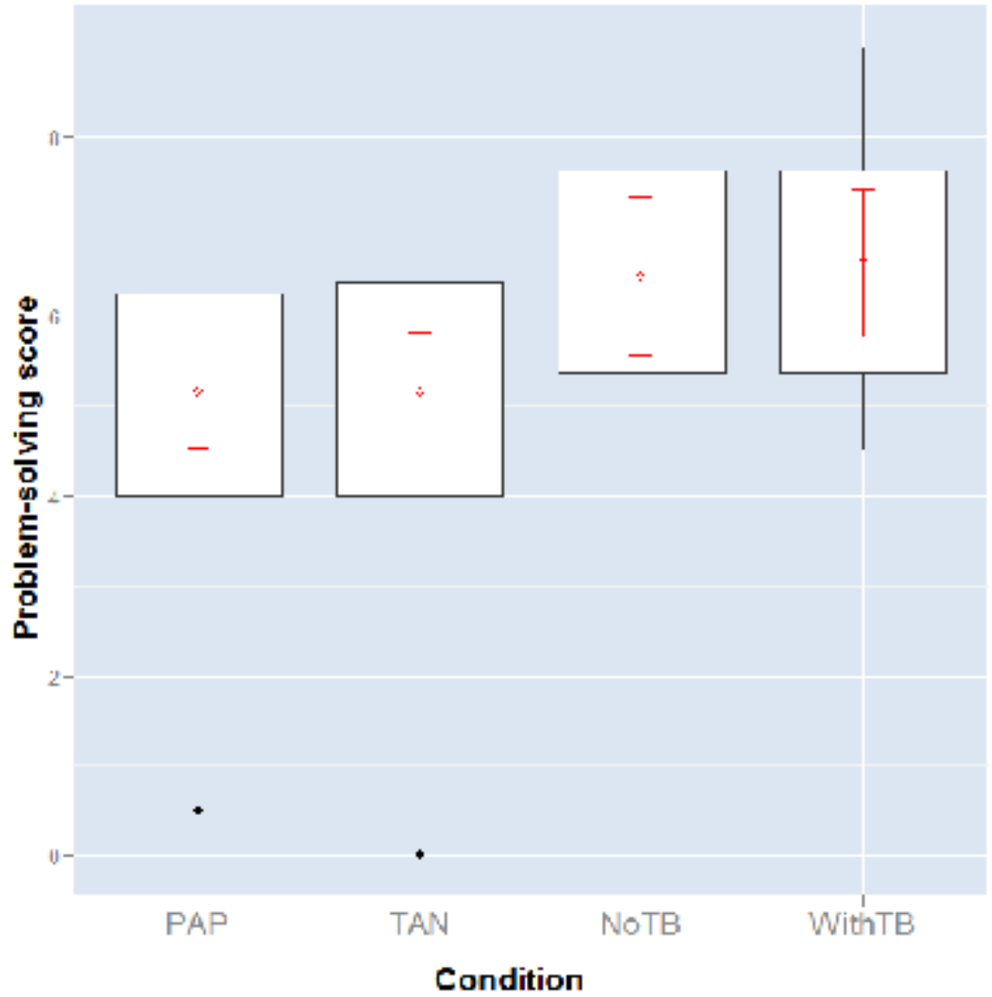
CLASS

- Pause all the actions (simulation, building model, etc.) in the whole class

Significant effect in
understanding



Significant effect in
problem-solving

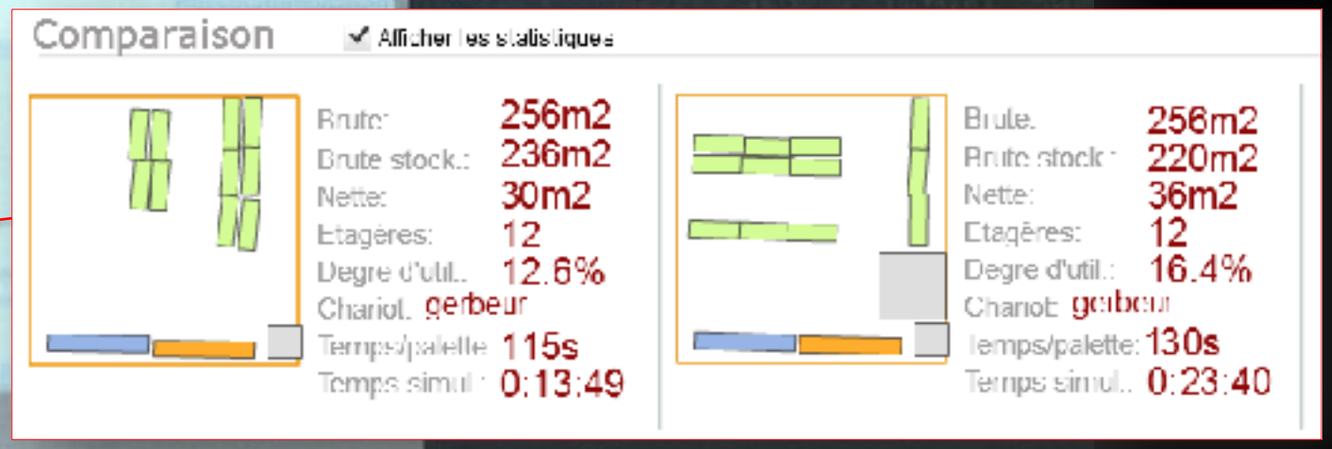


Measures	Warehouse study's conditions		Evaluation of TinkerLamp 2.0 conditions	
	Paper/pen	TinkerLamp 1.0	TinkerLamp 2.0 WithTinkerBoard	TinkerLamp 2.0 NoTinkerBoard
Understanding score	7.84(2.85)	7.43(2.82)	9.38(2.03)	10.31(1.70)
Problem-solving score	5.16(1.70)	5.15(1.78)	6.44(1.65)	6.59(1.53)

What is the effect of this cool AR environment ?

NONE

Tool-A , Teacher-Role X < Tool-A , Teacher-Role Y



Son DoLenh, Patrick Jermann


WE RECYCLE

Question

Please order a standard return 2nd clas

Enter command

from Lausanne to Davos standard C2|re

Question

Please order a young return 2nd class ticket from Basel to Geneve without bike.

Your Ticket

From	To
Basel	Geneve

Travel	Fare
Return	

Class	Bike

City

Basel	Davos	Fribourg
Geneve	Lausanne	Neuchatel
	Zurich	

Travel		Fare		
One-way	Return	Standard	Young	Half-fare

Class	Bike

Question

Please order a standard return 2nd class ti

From:
Fribourg

To:
Zurich

Travel:
Return

Fare:
Standard

Class:
2nd

Bike:
No

:24

Question

Please order a standard return 2nd class ticket from Basel to Zurich with a bike.

From: Basel

To: Zurich

Travel: One-way / Return

Fare: Standard / Young / Half-fare

Class: 1st / 2nd

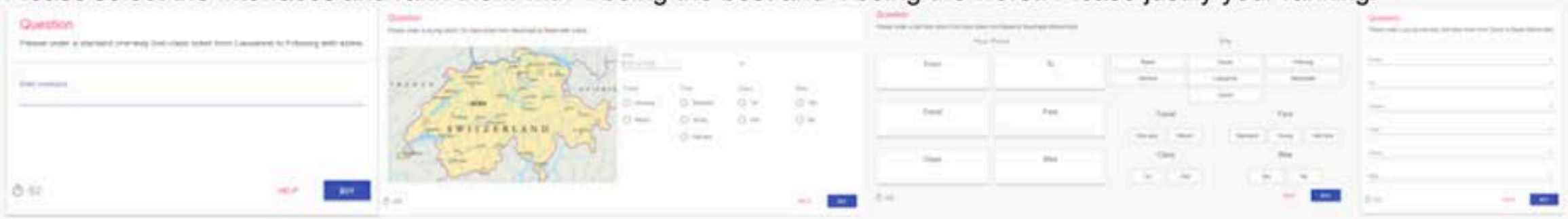
Bike: Yes / No

:36

HELP

BUY

Please select the interfaces and rank them with 1 being the best and 4 being the worst. Please justify your ranking.



If you rarely buy a train ticket rank the interfaces in the order that you would most prefer them.

Ryan's List

1. **Drag and Drop**
2. **Command**
3. **Form**
4. **Map**

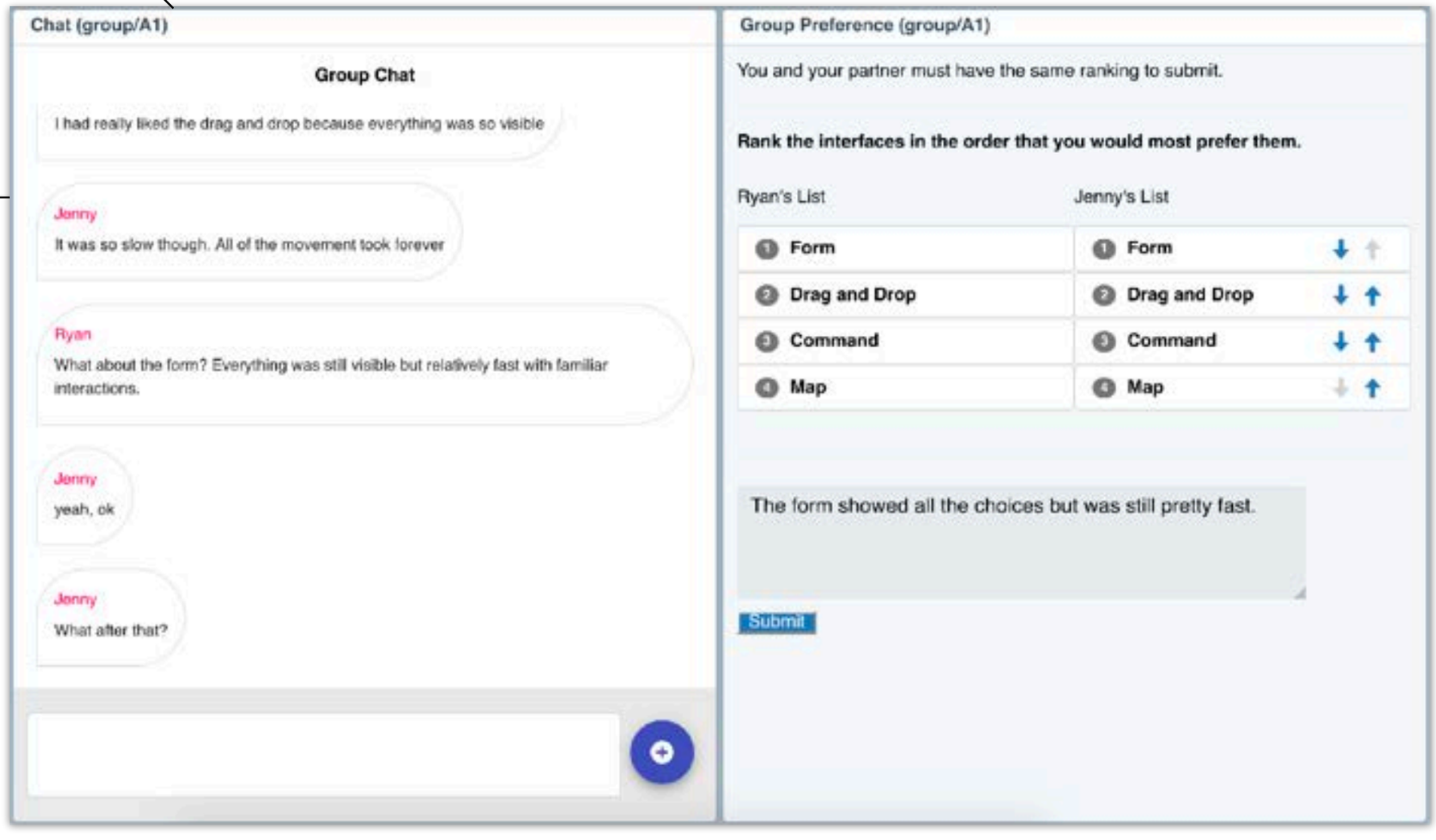
The drag and drop is easiest to see all of the options.

Submit

Class

Team

Solo



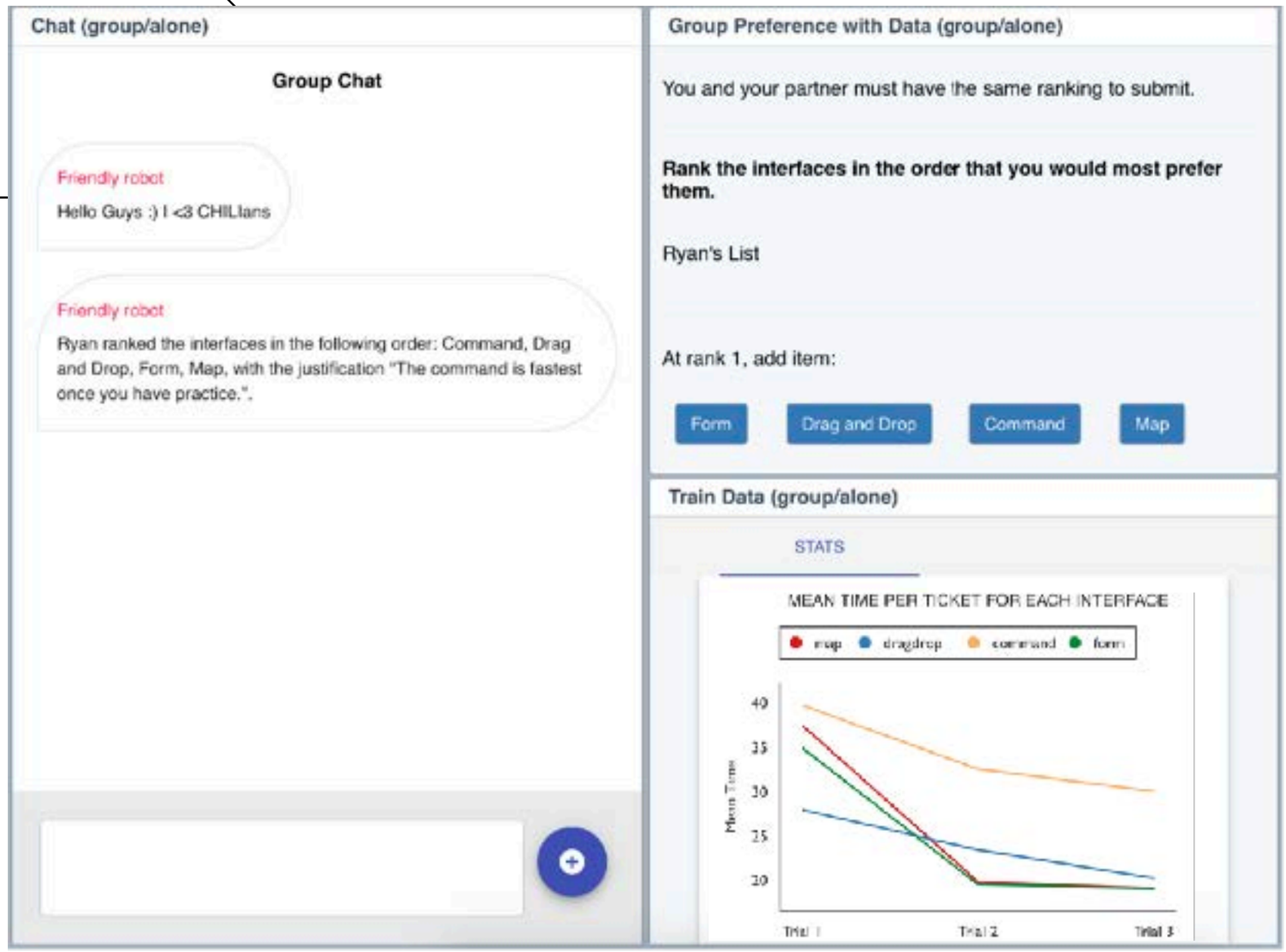
Socio-cognitive conflict

Class

Team

Solo

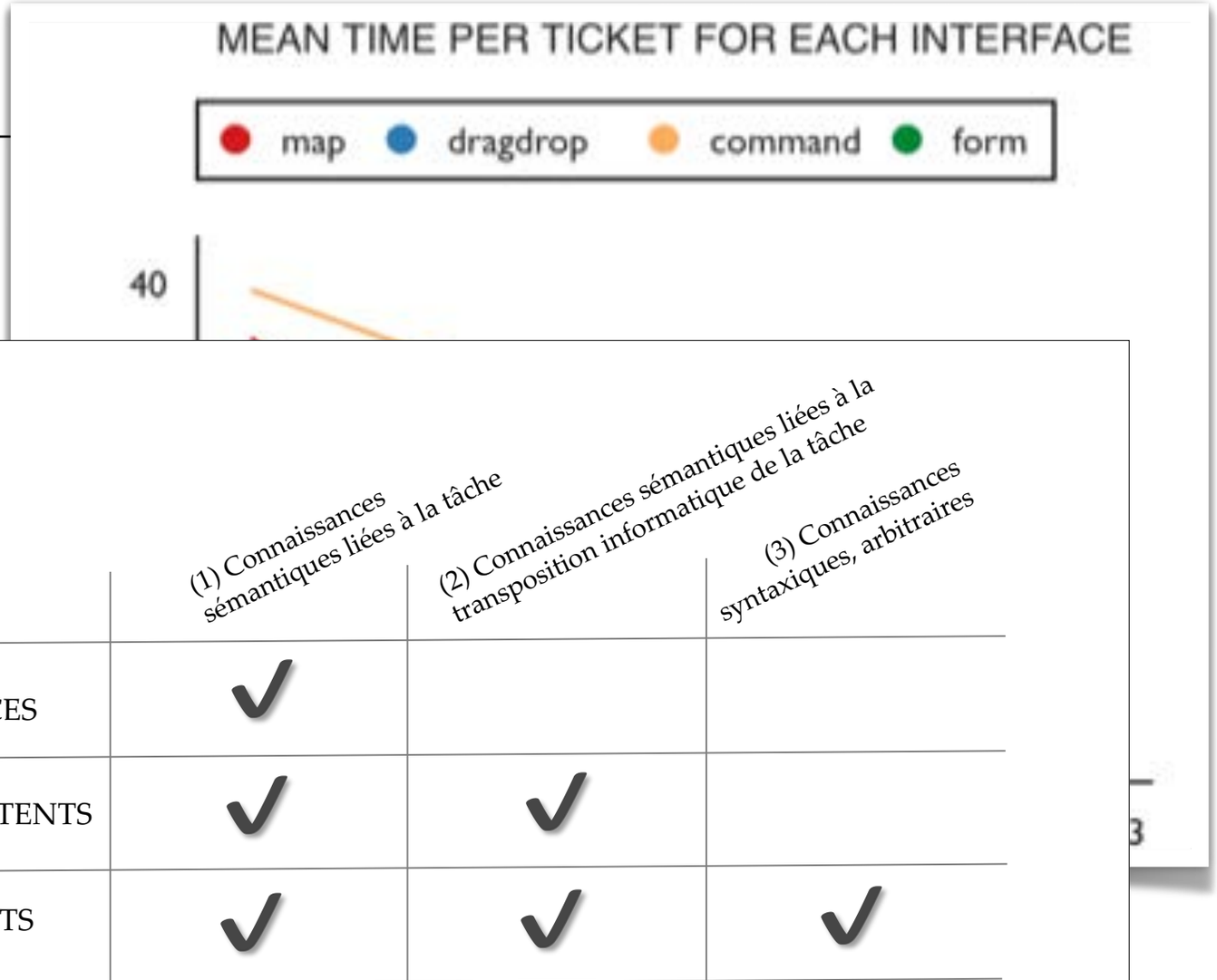
Arguing with data



Class

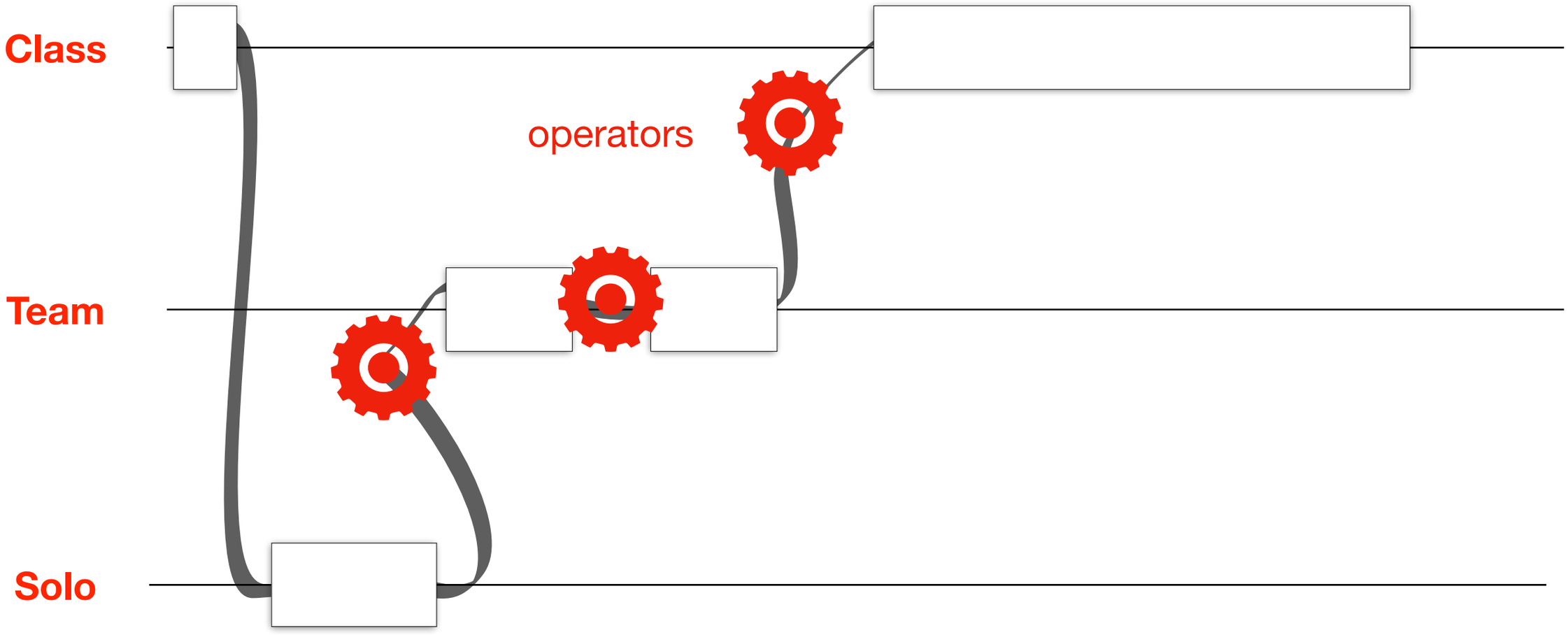
Team

Solo

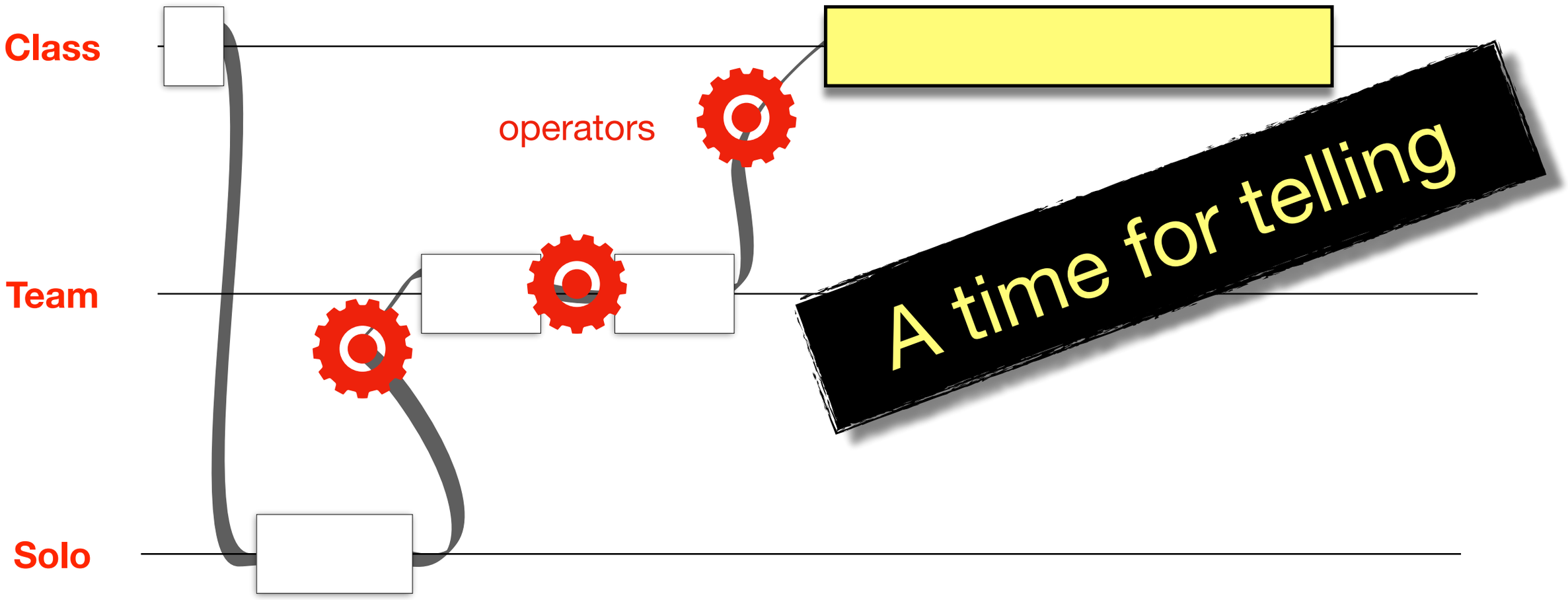


	(1) Connaissances sémantiques liées à la tâche	(2) Connaissances sémantiques liées à la transposition informatique de la tâche	(3) Connaissances syntaxiques, arbitraires
NOVICES	✓		
INTERMITTENTS	✓	✓	
EXPERTS	✓	✓	✓

Orchestration Graph

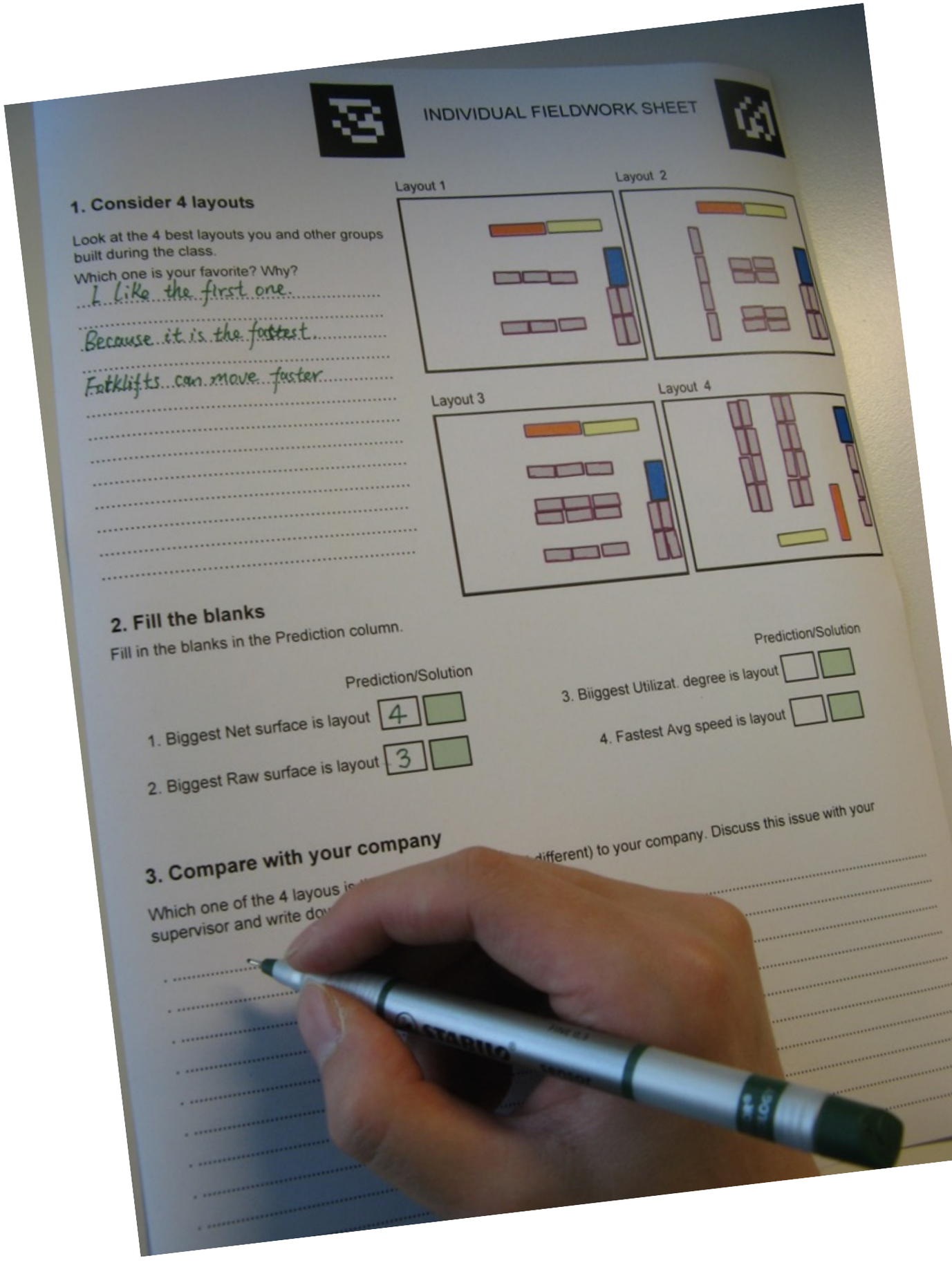


A lesson as a workflow ?!?!???

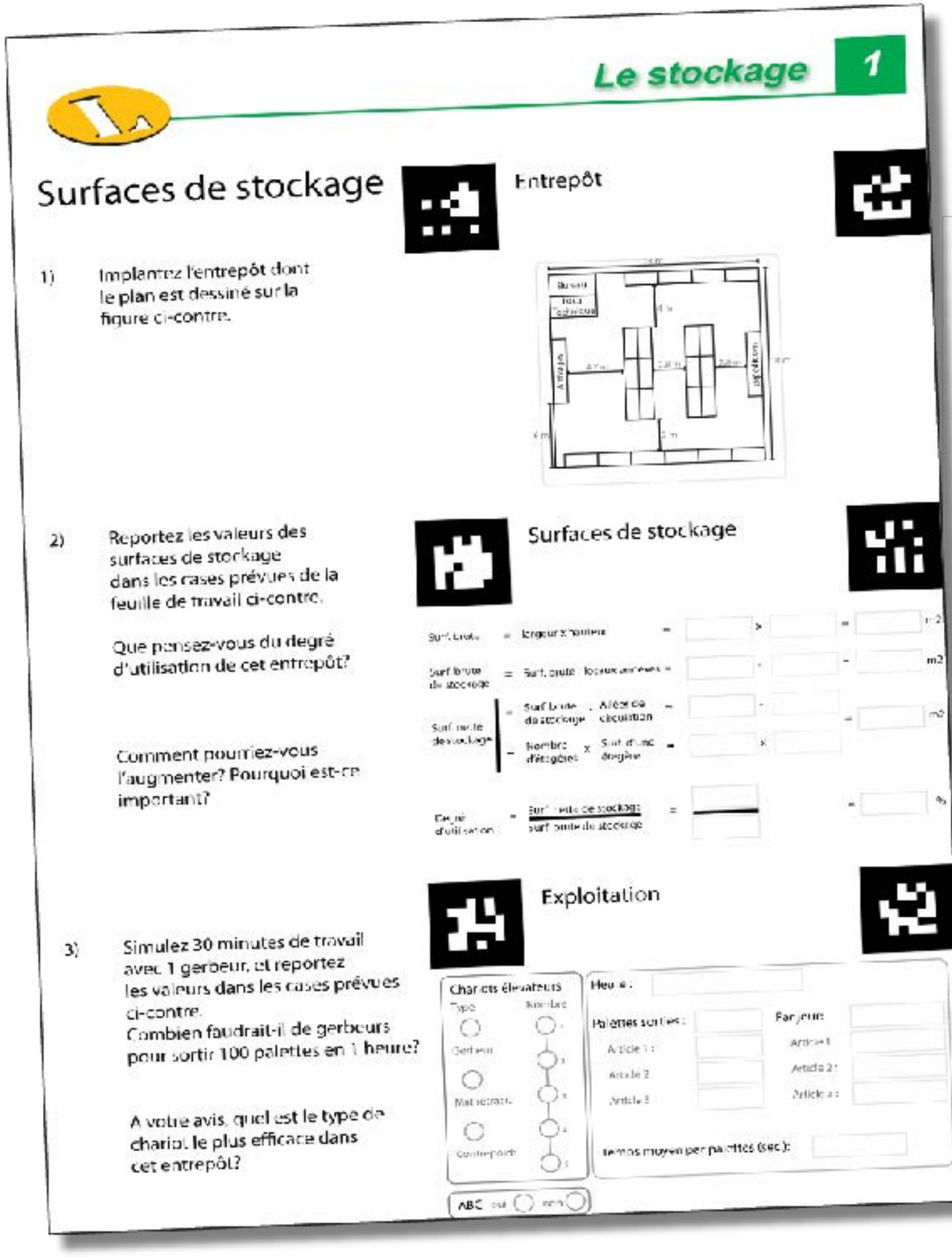

Class
operators
Team
Solo
A time for telling

Classroom Orchestration

The ‘logistics’ of being a teacher


INDIVIDUAL FIELDWORK SHEET
1. Consider 4 layouts
Look at the 4 best layouts you and other groups built during the class.
Which one is your favorite? Why?
I like the first one.
Because it is the fastest.
Forklifts can move faster
Layout 1
Layout 2
Layout 3
Layout 4
2. Fill the blanks
Fill in the blanks in the Prediction column.
Prediction/Solution
1. Biggest Net surface is layout 4
2. Biggest Raw surface is layout 3
Prediction/Solution
3. Biiggest Utilizat. degree is layout
4. Fastest Avg speed is layout
3. Compare with your company
different) to your company. Discuss this issue with your

Homework



Le stockage 1

Surfaces de stockage

Entrepôt

1) Implantez l'entrepôt dont le plan est dessiné sur la figure ci-contre.

2) Reportez les valeurs des surfaces de stockage dans les cases prévues de la feuille de travail ci-contre.

Que pensez-vous du degré d'utilisation de cet entrepôt?

Comment pourriez-vous l'augmenter? Pourquoi est-ce important?

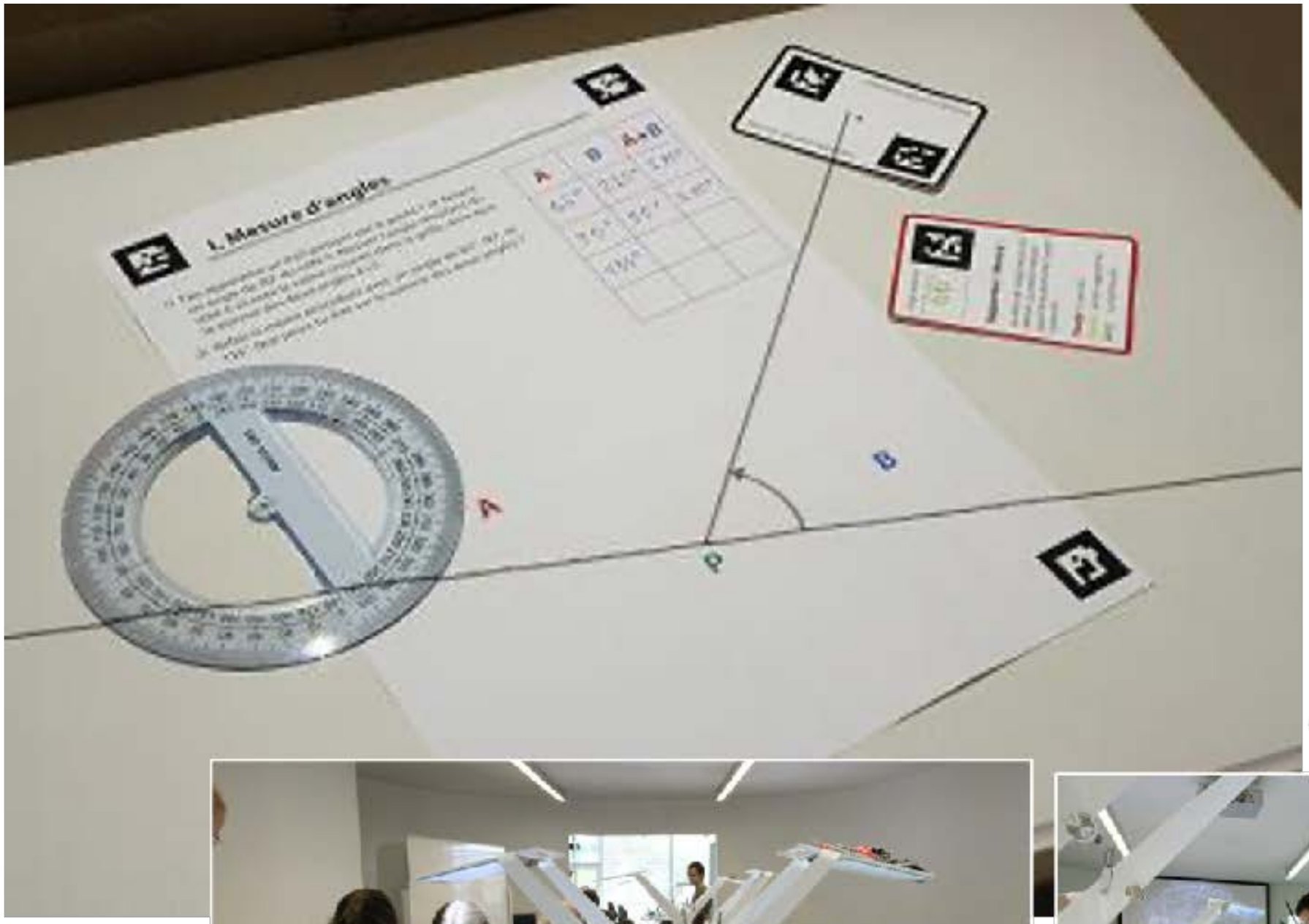
Surfaces de stockage

Exploitation

3) Simulez 30 minutes de travail avec 1 gerbeur, et reportez les valeurs dans les cases prévues ci-contre.
Combien faudrait-il de gerbeurs pour sortir 100 palettes en 1 heure?

A votre avis, quel est le type de chariot le plus efficace dans cet entrepôt?

Curriculum Relevance



Quentin Bonnard

Bravo vous avez choisi les bonnes briques!
la rotation de la brique 125 n'est pas correcte
la rotation de la brique 136 n'est pas correcte

Montrer la solution

Sebastien CUendet

Vue de face

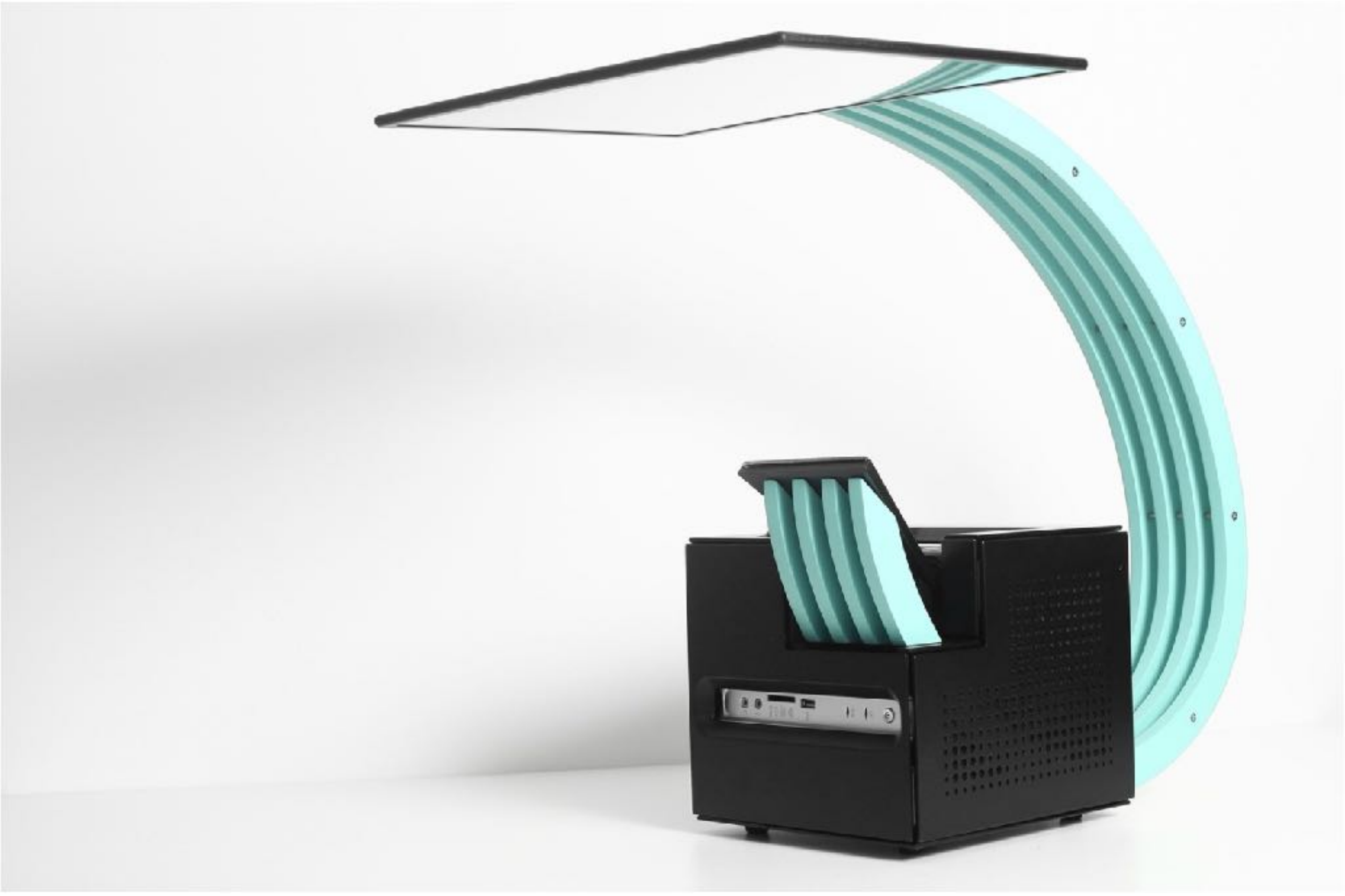
Effectuez le rabattement de l'arête a.

Zone pour poser les blocs

The « logistics » of education

- How much time is lost before they really start?
- Does the teacher see what the students are doing?
- Can the teacher walk between the tables?
- How to cope with absences?
- Does the activity leave traces?

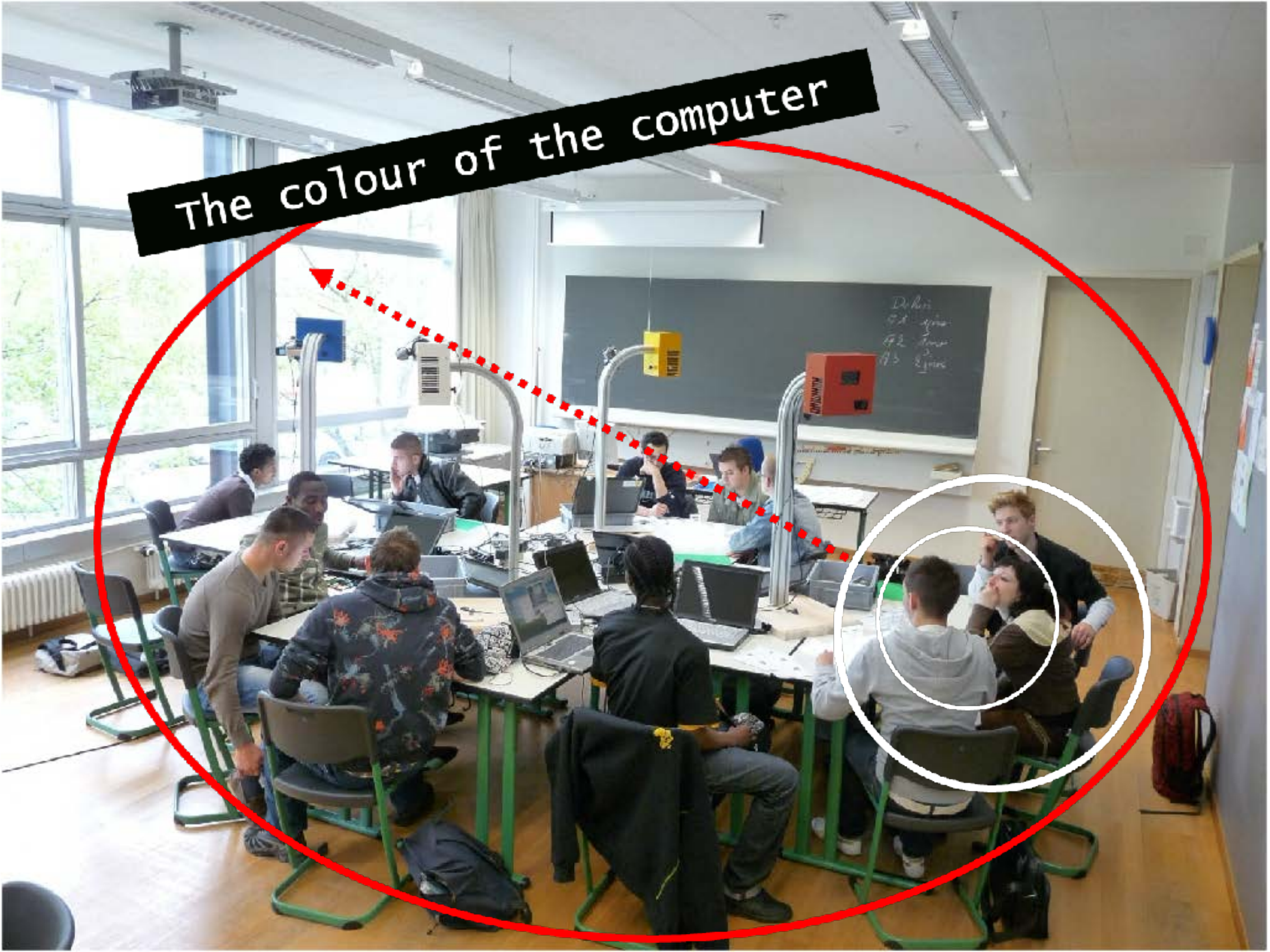
"no worth a theory"

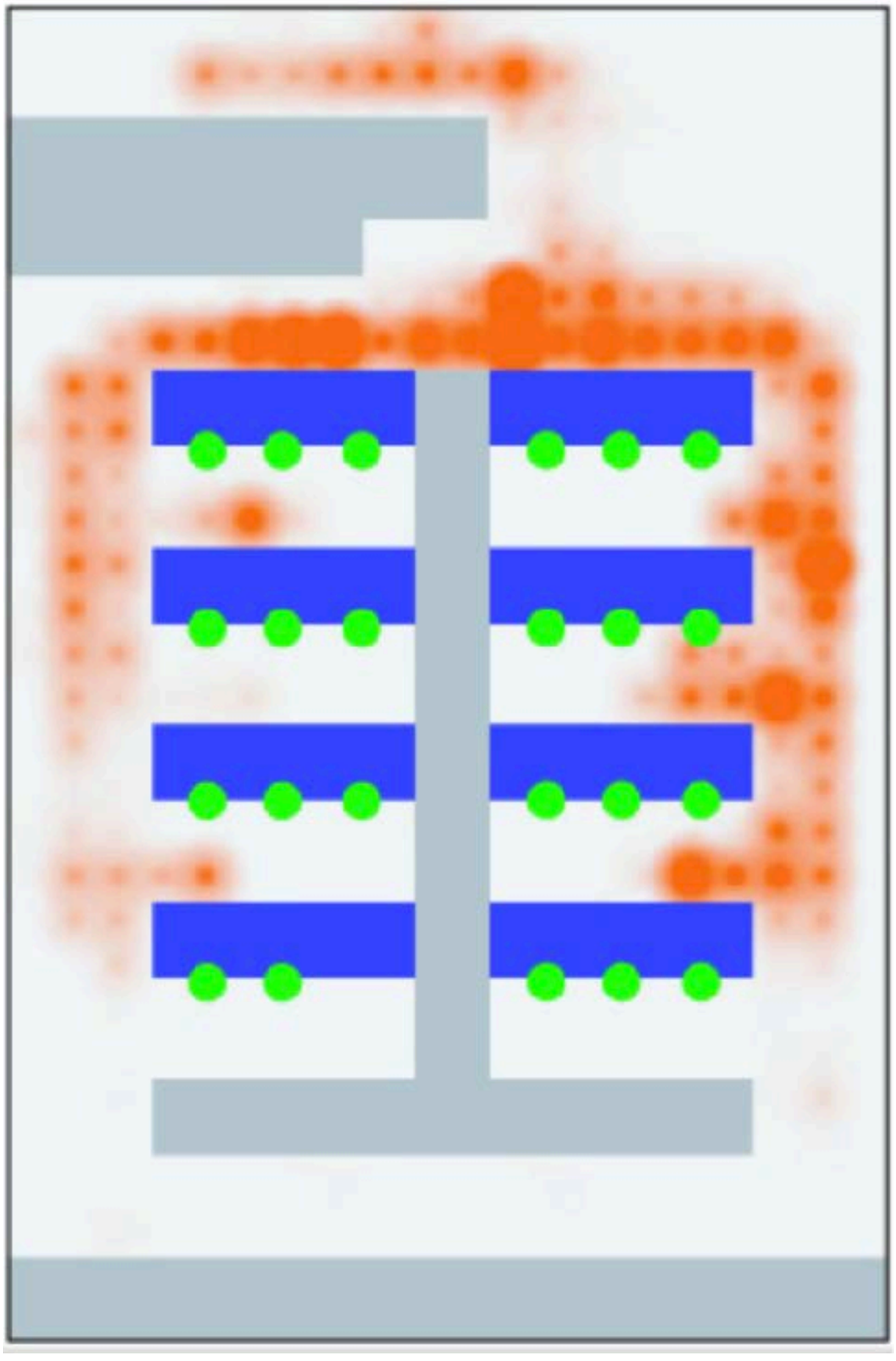


D’Esposito & Gaillard

Y. Guibinelli

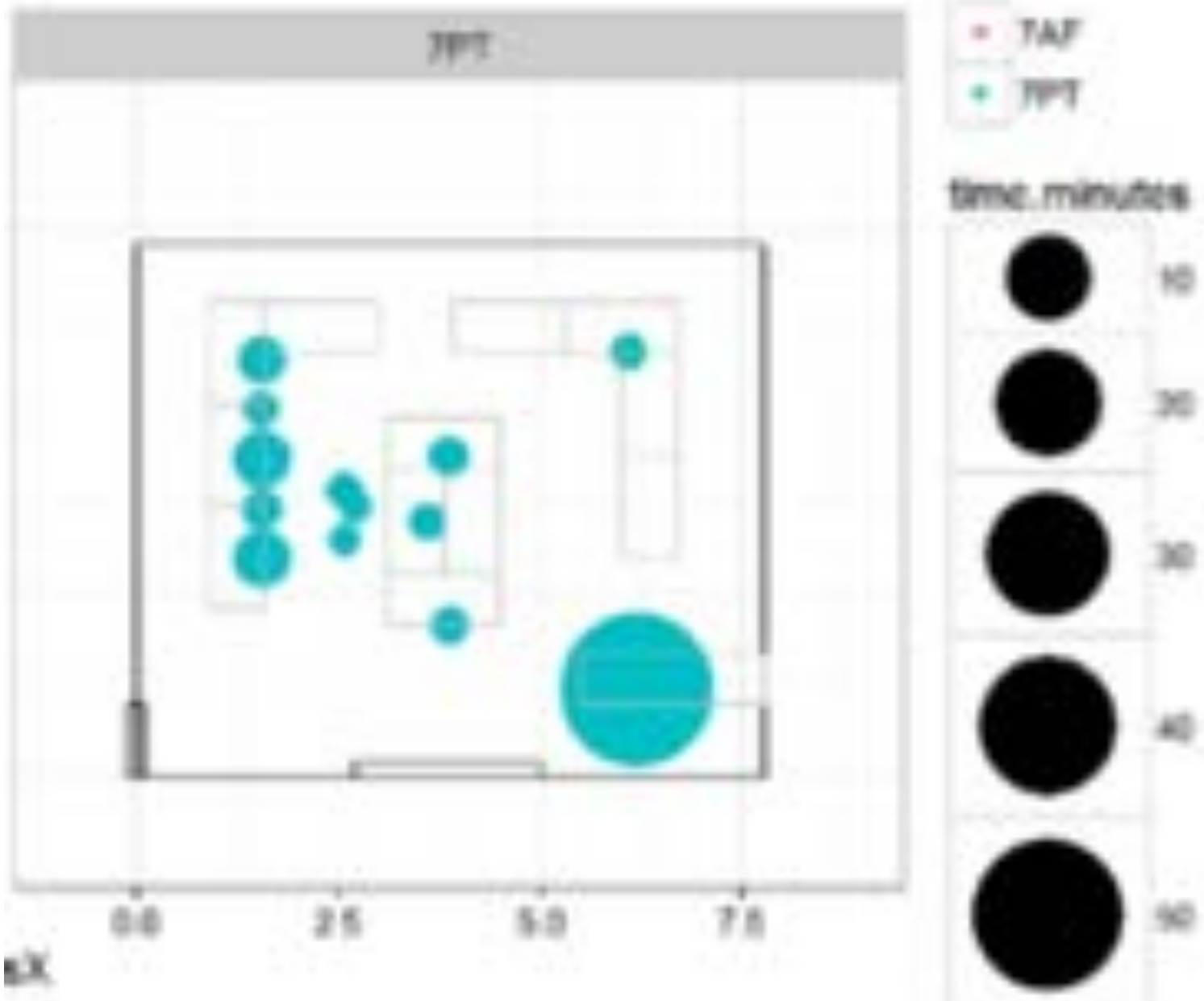
The colour of the computer





Teacher position heat map

I. Sarrade


JPT
0.0
2.5
5.0
7.5
TAF
JPT
time.minutes
10
20
30
40
50

EPFL Exercises Session

assistant

works

waits

“While Waiting Productivity” LOSS : 62% ➔ 6%

H. Alavi, Olivier Guédat

"While Waiting Productivity" LOSS : 62% ➔ 6%

H. Alavi, Olivier Guédat

EPFL

The 3 circles of usability

The user is…	Usability constraints are…
3. Classroom	*Discipline, Curriculum, time, Time segmentation, Safety, sustainability,grading, …*
2. Group	*Interdependence, WYSIWIS,…*
1. Individual	*Cognitive load, pre-requisites,...*

What should change ?

Does your EdTech solution consider extrinsic-constraints?

- Keeping control
- Producing grades
- Leaving traces
- Handling late comers
- …

Teachers are a key variable

in the EdTech effects equation