



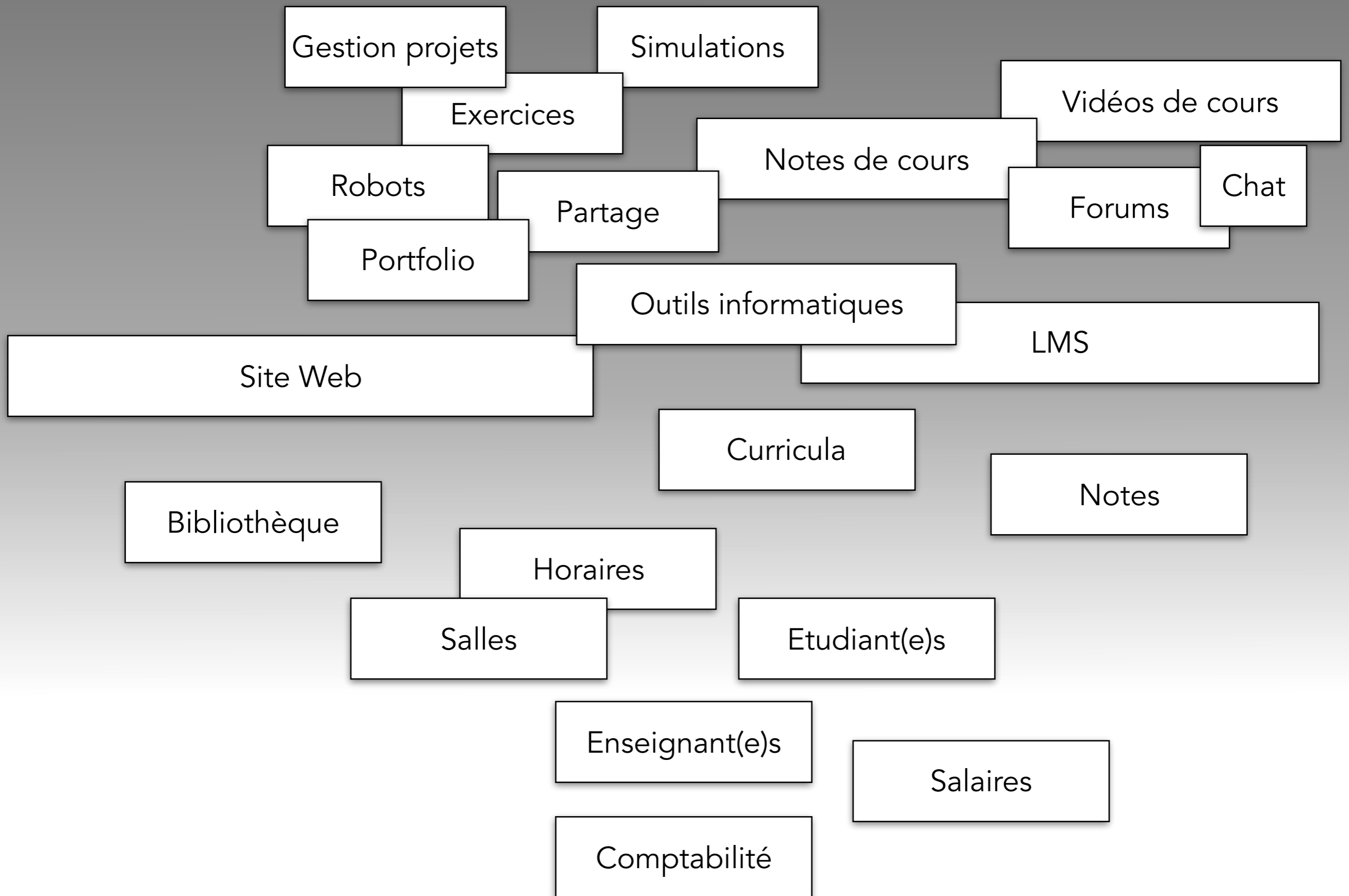
Classware

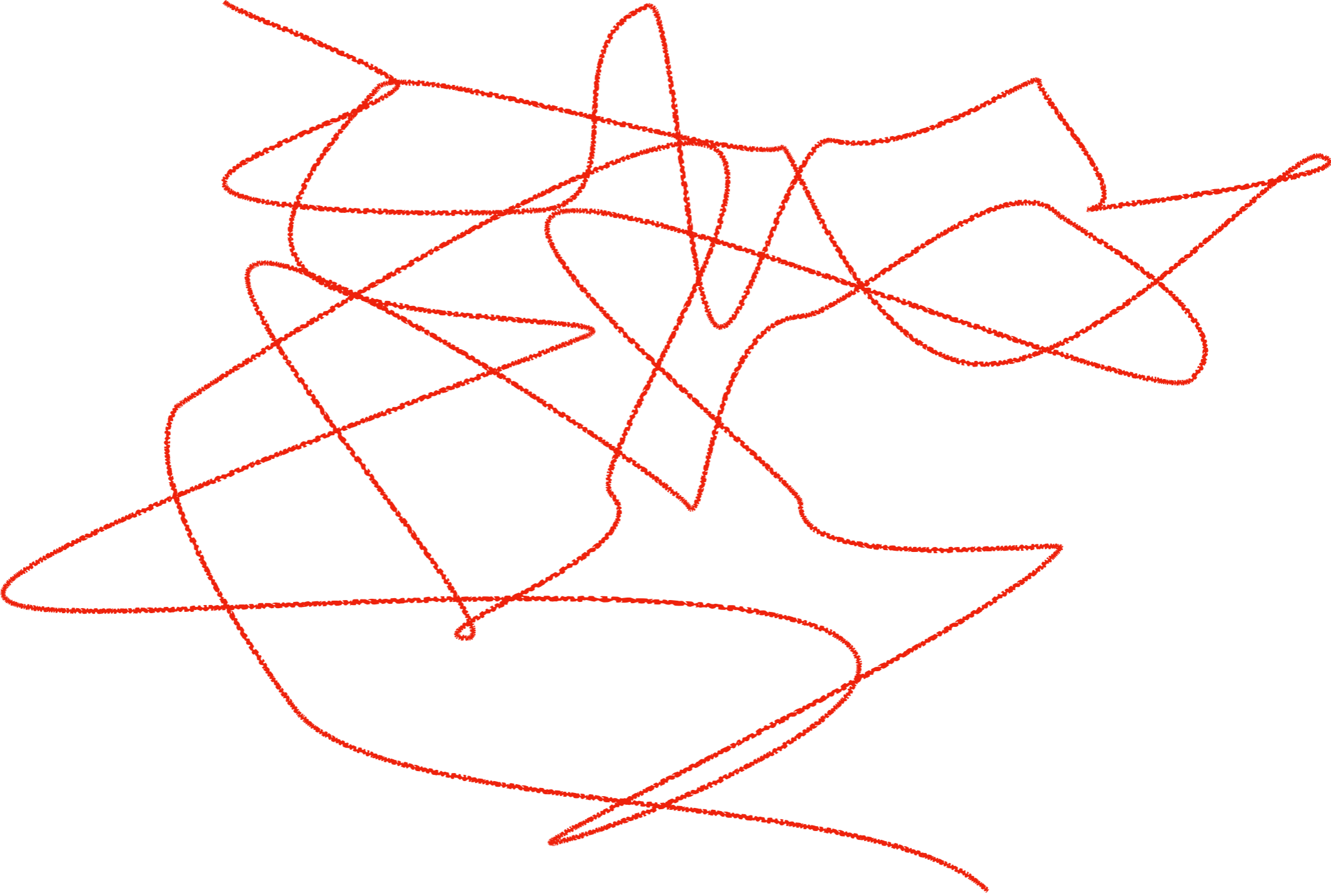


Quelle plateforme digitale pour mon école ?
Welche digitale Plattform für meine Schule?



Digital School Ecosystem





Outils informatiques

Gestion projets

Simulations

Vidéos de cours

Exercices

Notes de cours

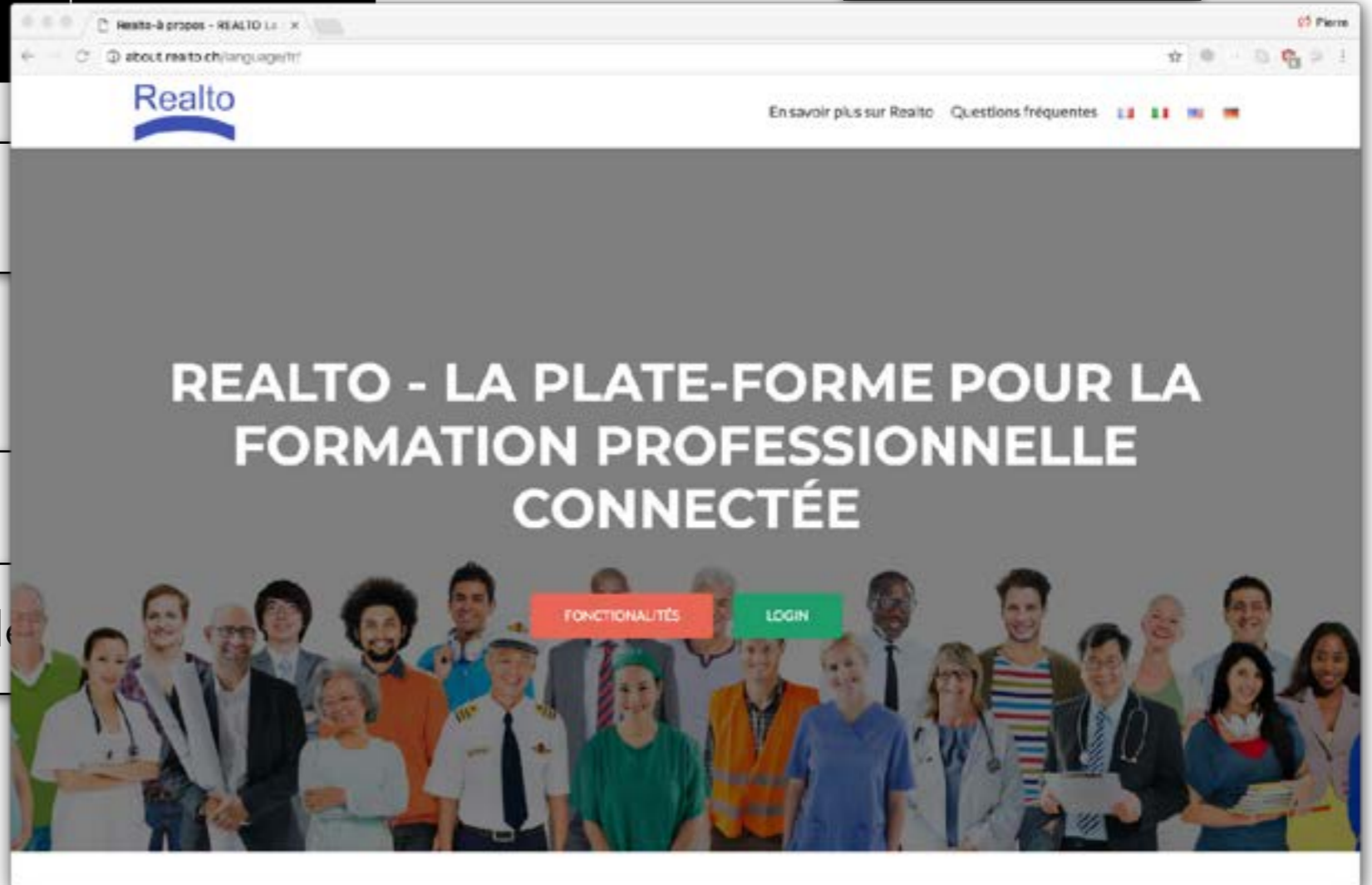
Robots

Partage

Forums

Chat

Portfolio

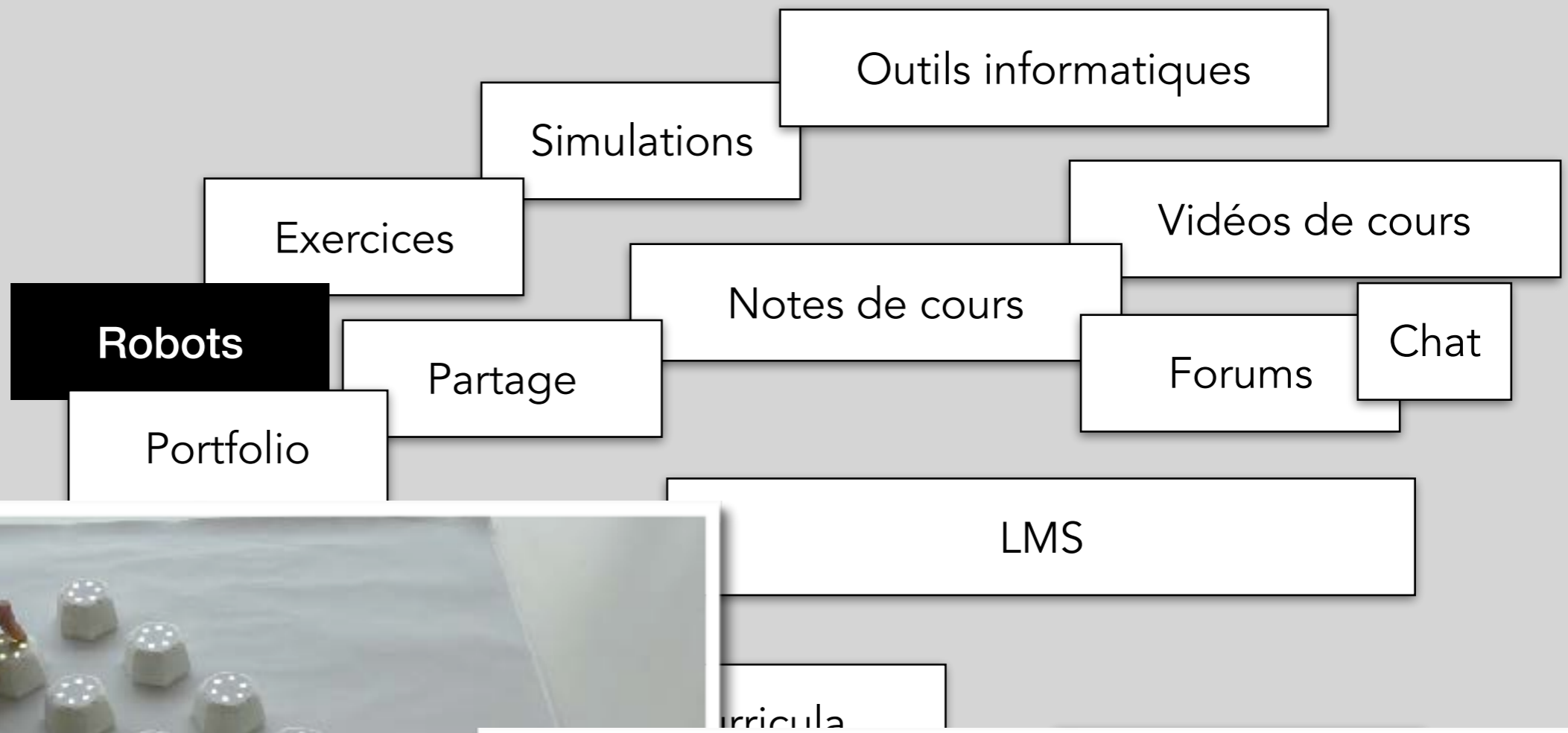


Site Web

Bibliothèque

Salle

Comptabilité



Gestion projets

Simulations

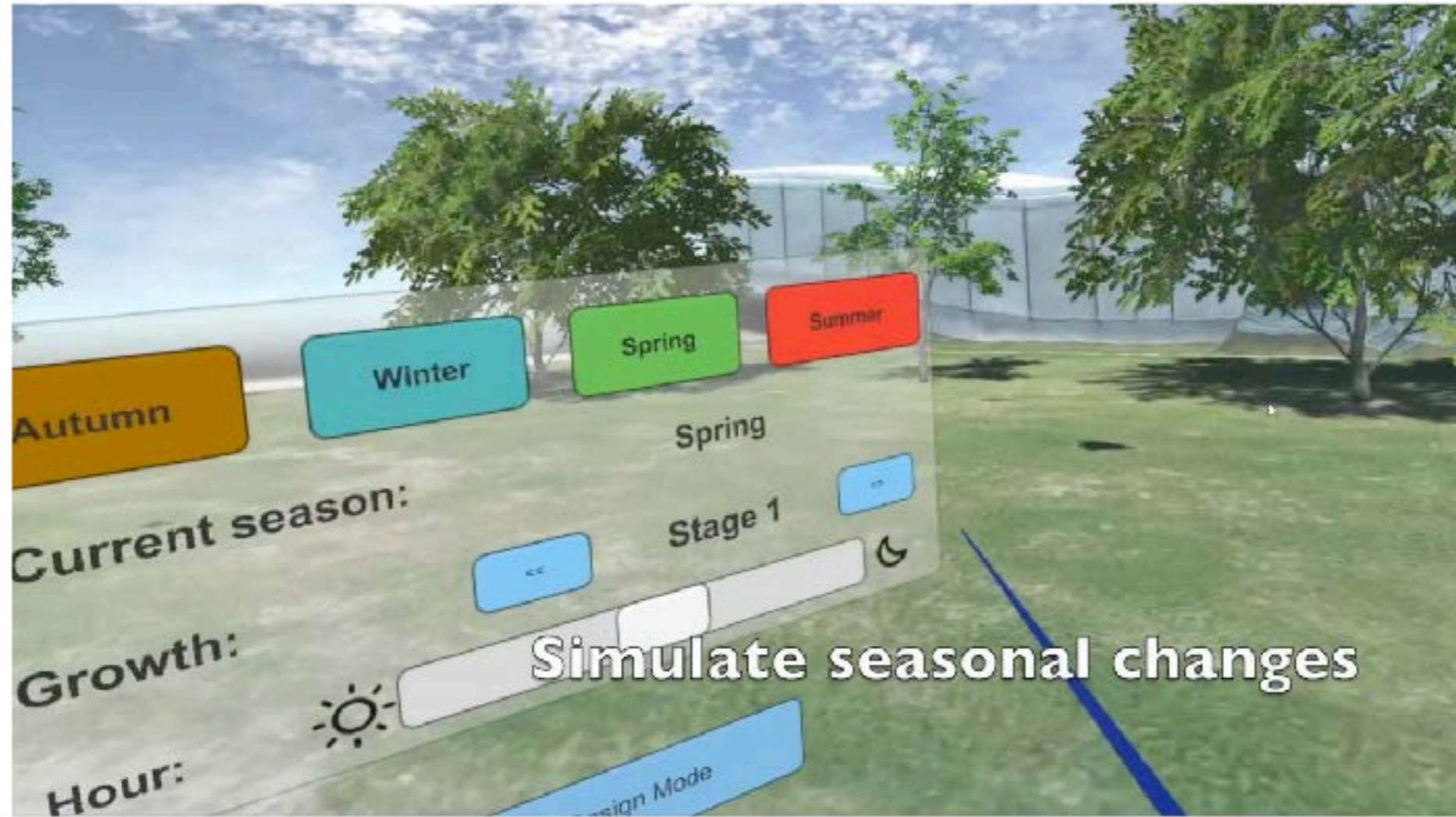
Outils informatiques

Exercices

Vidéos de cours

Forums

Chat



Notes

Enseignant(e)s

Salaires

Comptabilité

Gestion projets

Simulations

Outils informatiques

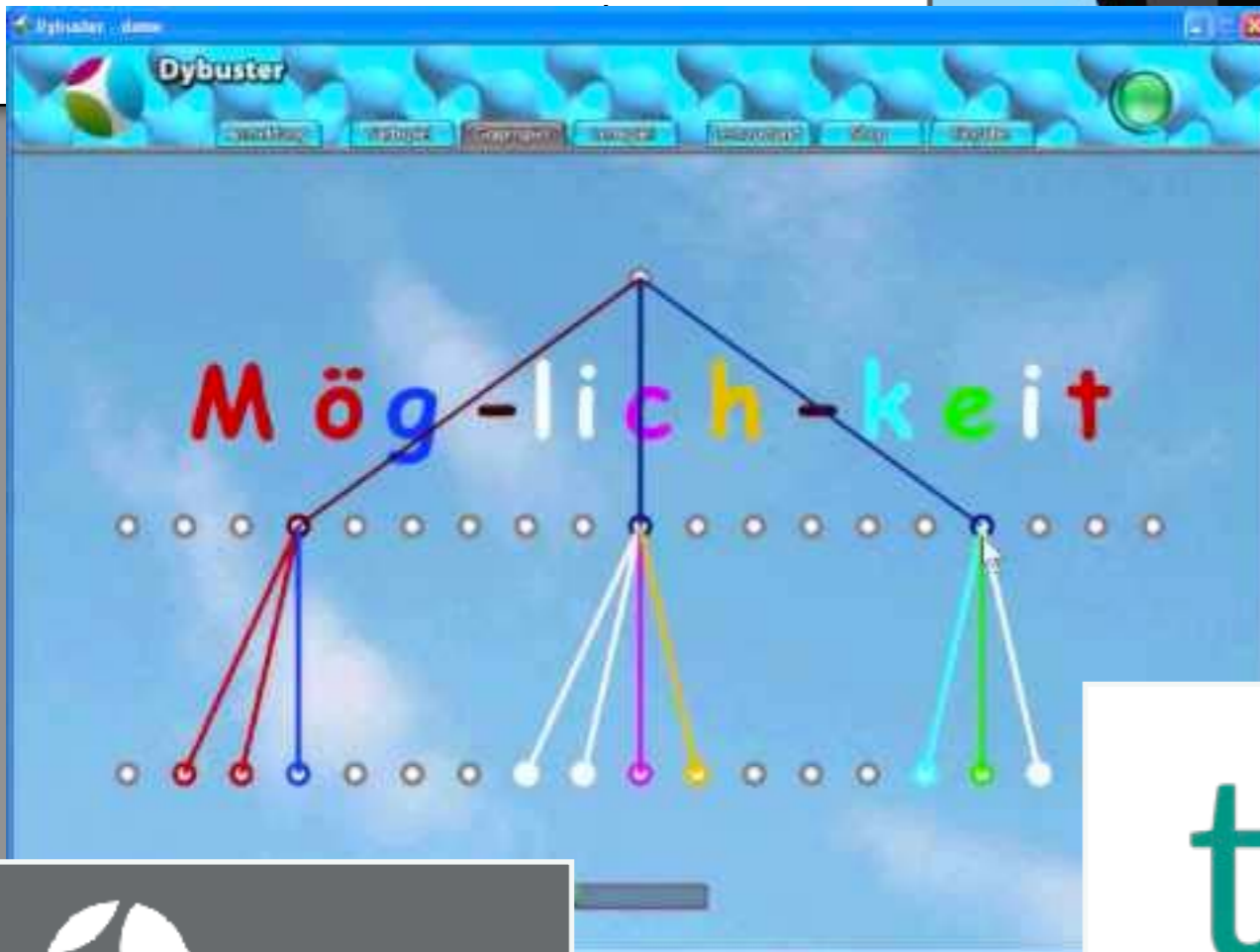
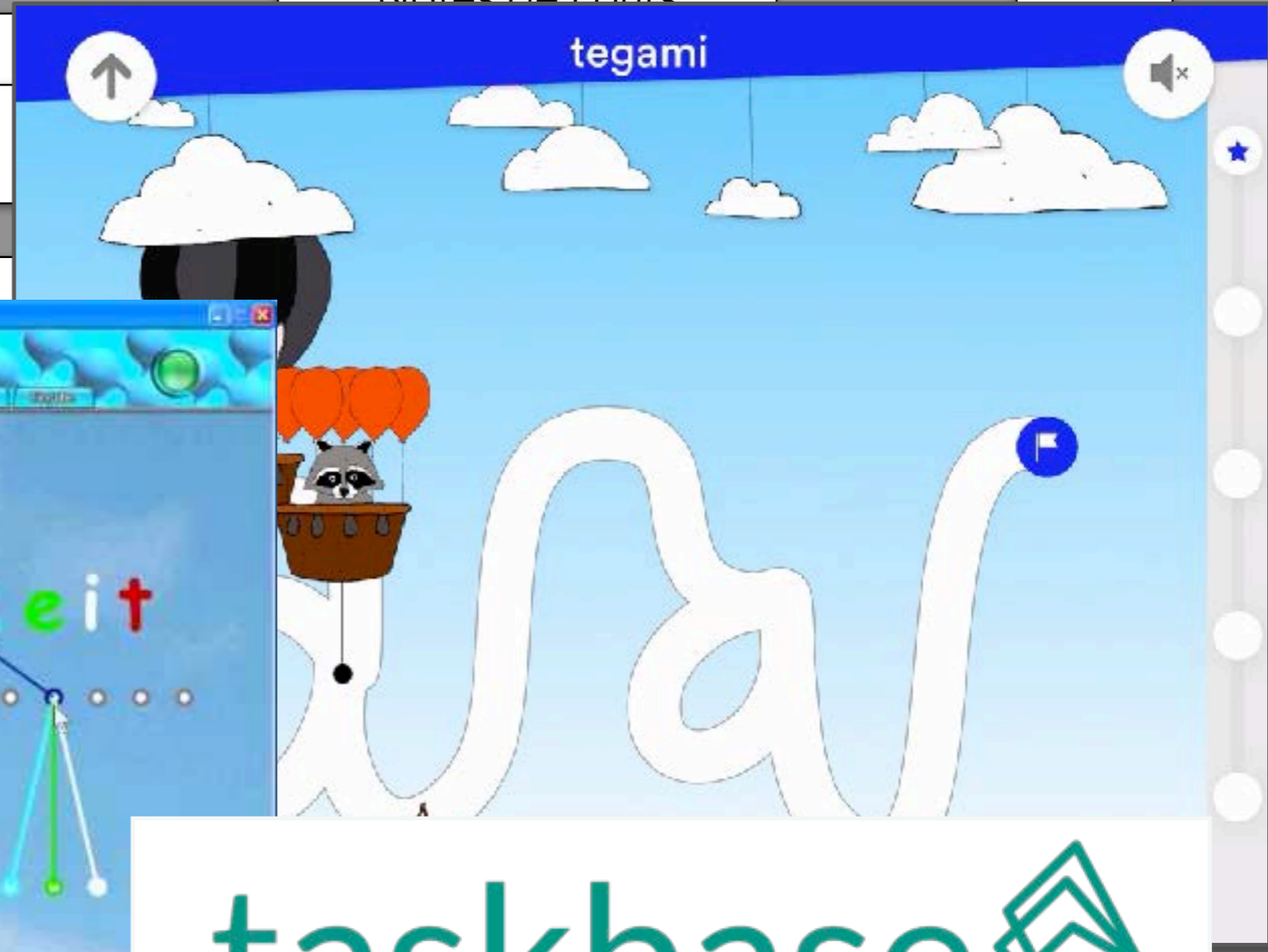
Exercices

Vidéos de cours

Notes de cours

Robots

Portfolio



taskbase



Dybuster

Gestion projets

Simulations

Outils informatiques

Vidéos de cours

Robots

Partage

Notes de cours

Forums

Chat

Portfolio



MOOCs

Notes

Enseignants

Salaires

Comptabilité



You passed below 5% attention



1. Are you **crazy** ?

2. Lecturing better ?

or lecturing less ?



1896

Jean vs TED



TED Talks

EPFL Exercises Session

assistant

works



waits





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

SpeakUp

Une app pour favoriser les interactions en/hors cours



Denis Gillet



Settings Open Collaborative Challenges

STUDENTS ONLINE 16 / 18 Deactivate all questions

Hide names

Sorted by name ↑

	1	2	3	4	5	6	7	8
Ada Lovelace	50%	✓		✗		✓	✗	👁
Axel Lindgren	61%	✗	✗	✗	✗	✗	✓	👁
Caroline Herche	60%	✓	✗	✗			✓	👁
Grace Hopper	72%	✓	✗		✓	✗	✓	👁
Hermann Heuer	81%	✓	✓	✗	✓	✗	✓	👁
Ida Pfaff	56%	✗		✓	✗	✗	✓	👁
Ignaz Semmelweis	50%	✓	✓				✓	👁
Immanuel Kant	57%		✓	✓	✗	✗	✓	👁
Jackson Pollock	88%	✓	✓	✗	✗	✓	✗	👁
John Hancock	52%	✗	✓		✗	✓	✓	
Laur Kubary	48%			✗	✓	✗	✓	👁
Lisa Meiner	66%	✓	✓			✗	✗	👁
Maria Pomyrnanska	60%	✗		✓	✓	✓	✗	👁
Mary Anning	55%	✓		✗	✓	✓		👁

See how it works for students

Classtime

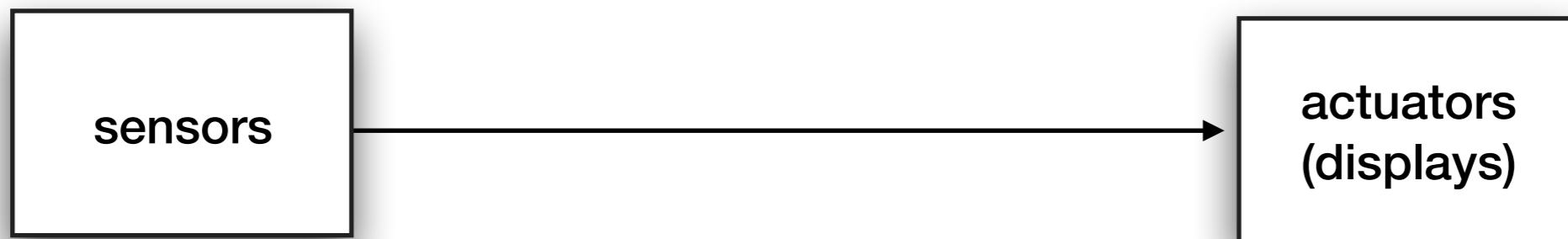


Classware: the classroom is a digital system

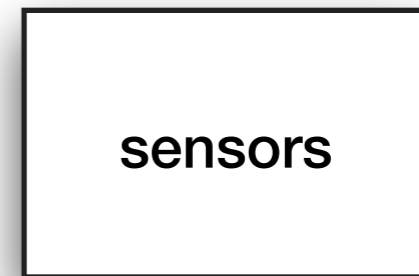


« Classware »

My (physical) classroom is a digital environment



- **Accelerometer** that measures acceleration forces
- **Magnetometer** that measures magnetization/magnetic fields
- **Light sensor** that measures the strength of light
- **Gyroscope** that measures orientation
- **Hygrometer** that measures moisture in the atmosphere
- **Thermometer** that measures ambient temperature
- **Barometer** that measures atmospheric pressure
- **Proximeter** that detects when something is close



- **Precision Gas Sensor** - Test air quality, carbon monoxide levels
- **Reducing Gas Sensor** - Sense methane, propane, and natural gas leaks
- **Oxidizing Gas Sensor** - Ozone sensing and chlorine leaks
- **Non-Contact Thermometer** - Check food temperature, engine diagnostics, ...
- **Humidity Sensor** - Check heat index, food storage conditions
- **Temperature Sensor** - Measure ambient temperature
- **Light Sensor** - For checking light intensity, sunlight monitoring,....
- **Color Sensors** - Use as a color meter, color matcher/analyzer, even pattern recognition
- **Pressure Sensor** - Blood pressure monitor
- **Proximity Sensor** - Use it as a stud finder or liquid level monitor
- **Expansion Connector** - Connecting other sensors like EKGs, Thermal Printers, and more

EAST BAY UNIFIED DASHBOARD Ariana Grande

Ariana's 1pm Class
 Week 5: Feb 4-8 2019
 Default Literacy Goal (Mins): 60

FILTERS: LANGUAGE: ENGLISH

STUDENT NAME	MINUTES TO GOAL	LIT LEVEL	BOOKS READ	LANGUAGE
Angu Tamba	15	3	2	English
Gyosy Hardinge	35	5	1	English
Klaudia Lowe				
Lu Zhou				
Martina Brito				
Prescott MacCaffery				
Rutherford Brennan				
Sergio Pilego				
Shira Subari				
Stephen Shaw				
Tongbang Jun-Seo				
Unuwa Himana				
Wen Gengxin				
Wim Willems				

AVERAGE CLASS MATH LEVEL
 Line graph showing math level from WK 1 to WK 5, with a peak of 4.3.

MOST POPULAR APPS

RANK	STUDENTS	APP/PLATFORM
1	11	Newsela (iOS)
2	8	Edmentum (Android)
3	8	Newsela (Android)
4	6	Edmentum (iOS)
5	5	SageMath (iOS)

© Literacy Lab 2019

Kidapolis

Dreambox

Smith 6th 8th Math Class (WA) new course Login Information

GRADE 7 CLASSROOM - COMMON CORE STATE STANDARDS

Overview Activity Standards Usage Assignments Roster

This Week View: List Grade Print All Student Reports Print Export

April 1, 2018 (Sun) - April 2, 2018 (Today) Tell us what you think about the new Overview!

Classroom Stats
 Lessons: 36 completed Standards Proficient: 0% avg/student

First Name	Last Name	Time Spent	Lessons	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Anthony	Q (7th)	25 min	7	████████	████████	████████	████████	██████
Ryan	N (7th)	64 min	5	████████	████████	████████	██████	██████
Carol	J (7th)	16 min	1	████████	████████	████████	██████	██████
Dorcas	H (6th)	24 min	7	████████	██████	██████	██████	██████
Loward	K (7th)	52 min	1	████████	████████	████████	██████	██████
George	F (6th-2)	38 min	3	██████	██████	██████	██████	██████

Dashboard

sensors



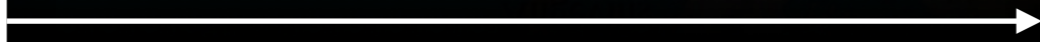
actuators (displays)

1356⁴

JASE333.COM



Data



Visualisation

00:00 - 09:00



Data



Visualisation

EAST BAY UNIFIED DASHBOARD Ariana Grande

Ariana's 1pm Class
 Week 5: Feb 4-8 2019
 Default Literacy Goal (Mins): 60

FILTERS: LANGUAGE: ENGLISH

STUDENT NAME	MINUTES TO GOAL	LIT LEVEL	BOOKS READ	LANGUAGE
Anthony	15	3	2	English
...	35	5	1	English

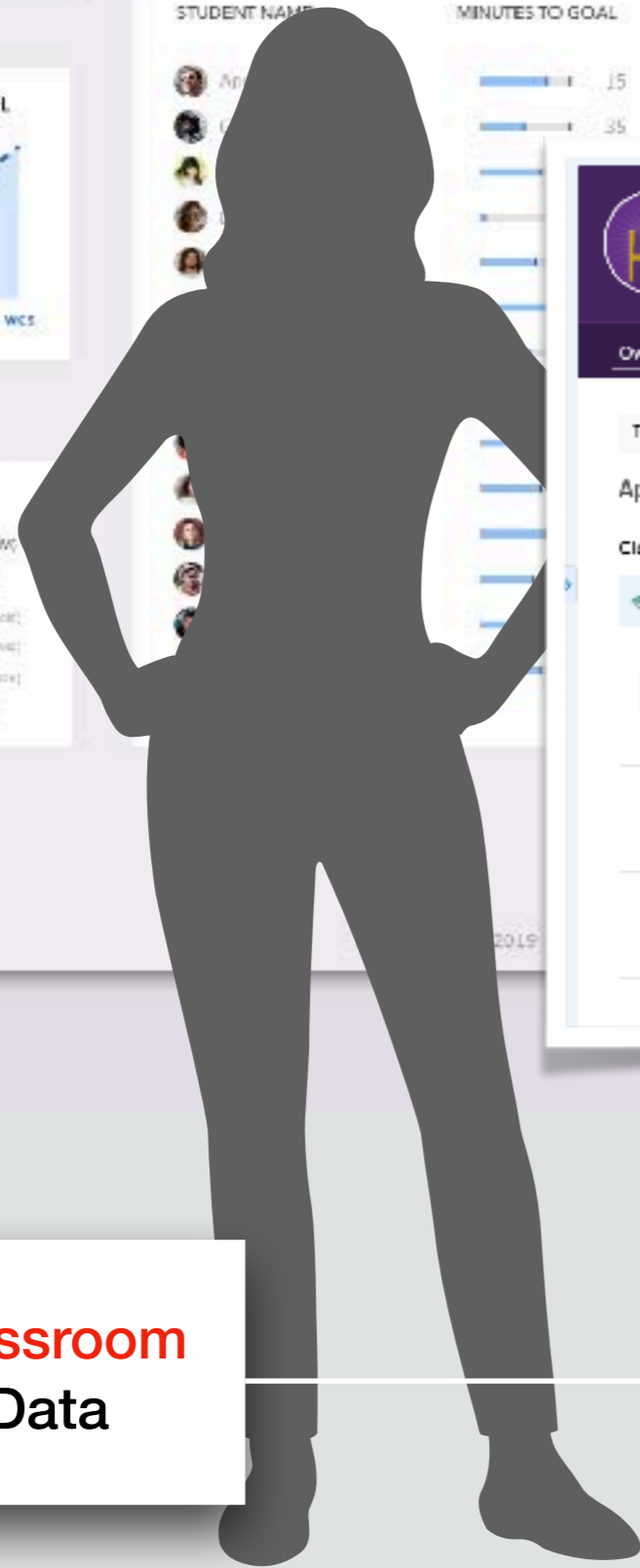
AVERAGE CLASS MATH LEVEL
 Line graph showing math level from WK 1 to WK 5, with a peak of 4.3.

MOST POPULAR APPS

RANK	STUDENTS	APP/PLATFORM
1	81	Newsela (iOS)
2	8	Ed Socrate (Android)
3	8	MosKanta (Android)
4	6	Ed Socrate (Android)
5	5	Socrate (iOS)

Kidapolis

Dreambox



Smith 6th 8th Math Class (WA) [View Course](#)
 GRADE 7 CLASSROOM - COMMON CORE STATE STANDARDS

Overview | Activity | Standards | Usage | Assignments | Roster

This Week | View: List | Grade | [Print All Student Reports](#) | [Print](#) | [Export](#)

April 1, 2018 (Sun) - April 2, 2018 (Today) [Tell us what you think about the new Overview!](#)

Classroom Stats
 Lessons: 36 completed | Standards Proficient: 0% avg/student

First Name	Last Name	Time Spent	Lessons	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Anthony	Q (7th)	25 min	7	████████	████████	████████	████████	███
Ryan	N (7th)	64 min	5	████████	████████	████████	███	███
Carol	J (7th)	16 min	1	████████	████████	████████	███	███
Dennis	H (6th)	24 min	7	████████	██████	███	███	███
Loward	K (7th)	52 min	1	████████	████████	████████	███	███
George	F (6th-2)	38 min	3	███	███	███	███	███

Dashboard

Classroom Data

Visualisation



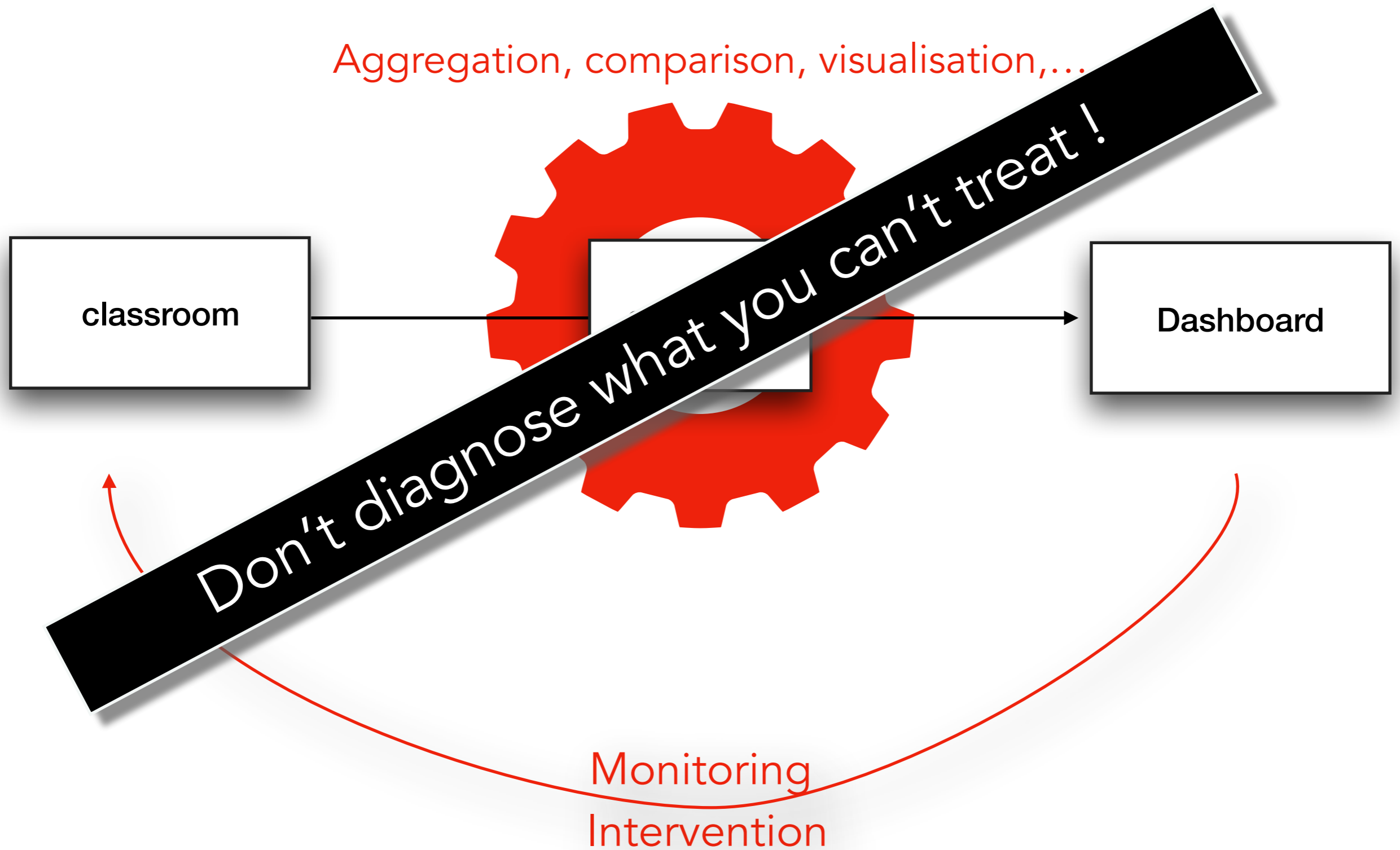
Aggregation, comparison, visualisation,...

classroom

Dashboard

Don't diagnose what you can't treat!

Monitoring
Intervention



Distributed

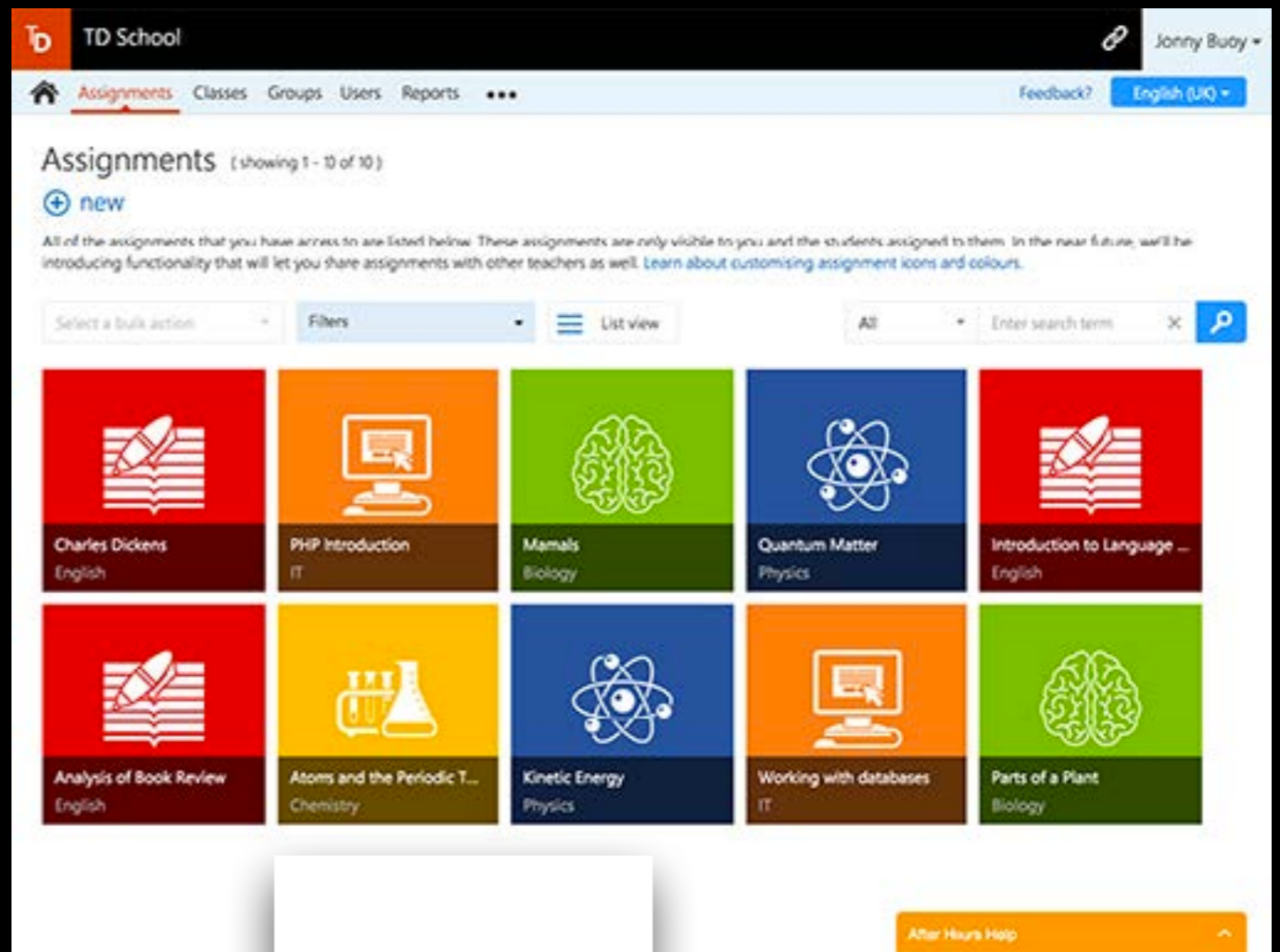


Data

Visualisation

Centralized



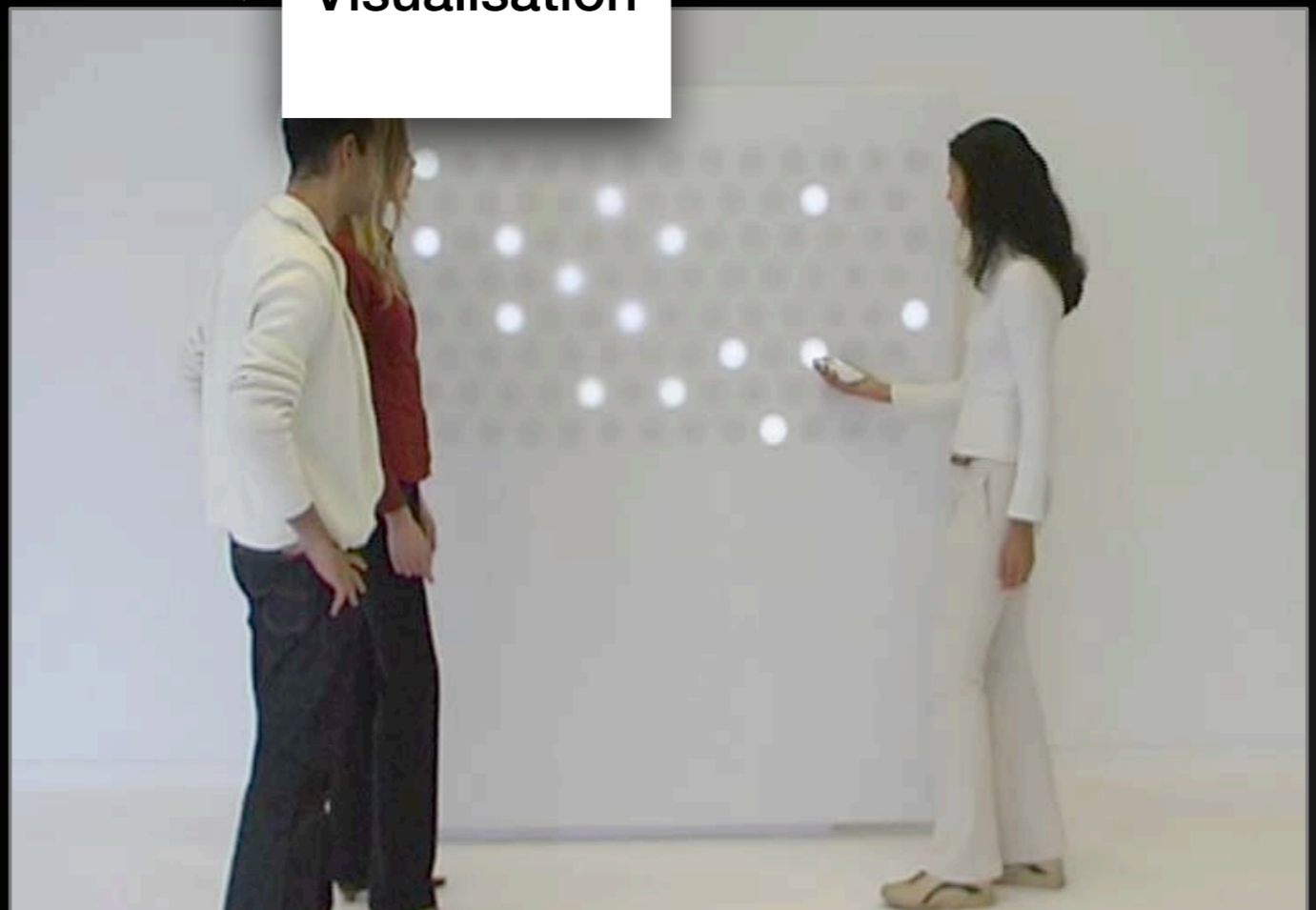


Focal

Data

Visualisation

**Peripheral
(ambient)**



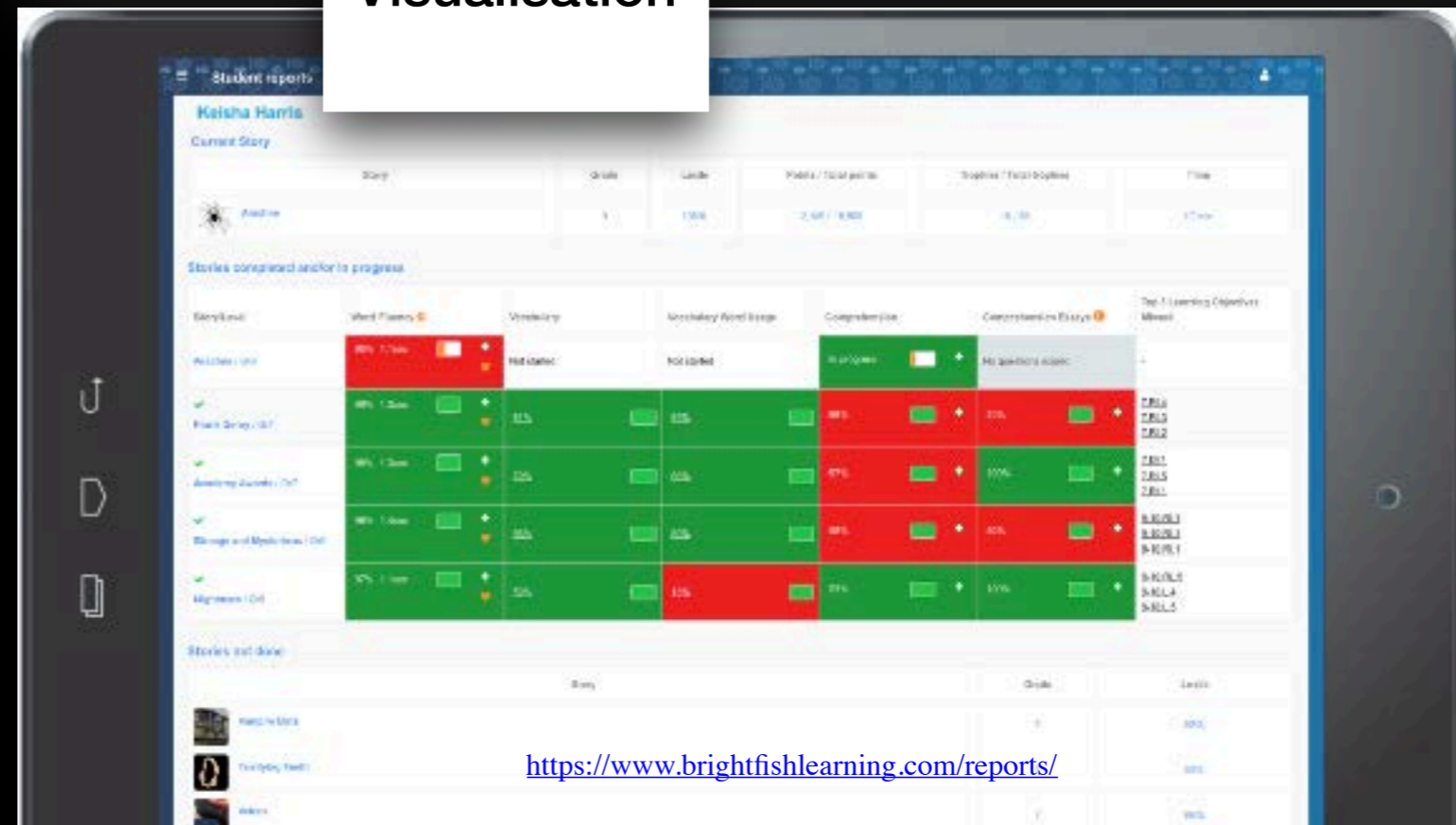
Public Dashboard



Data

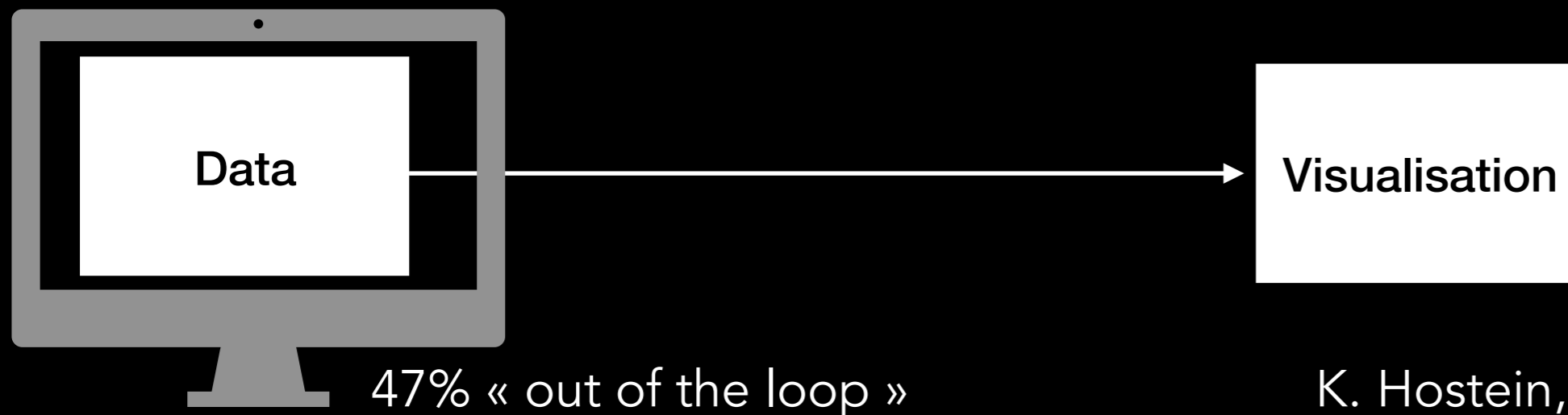
Visualisation

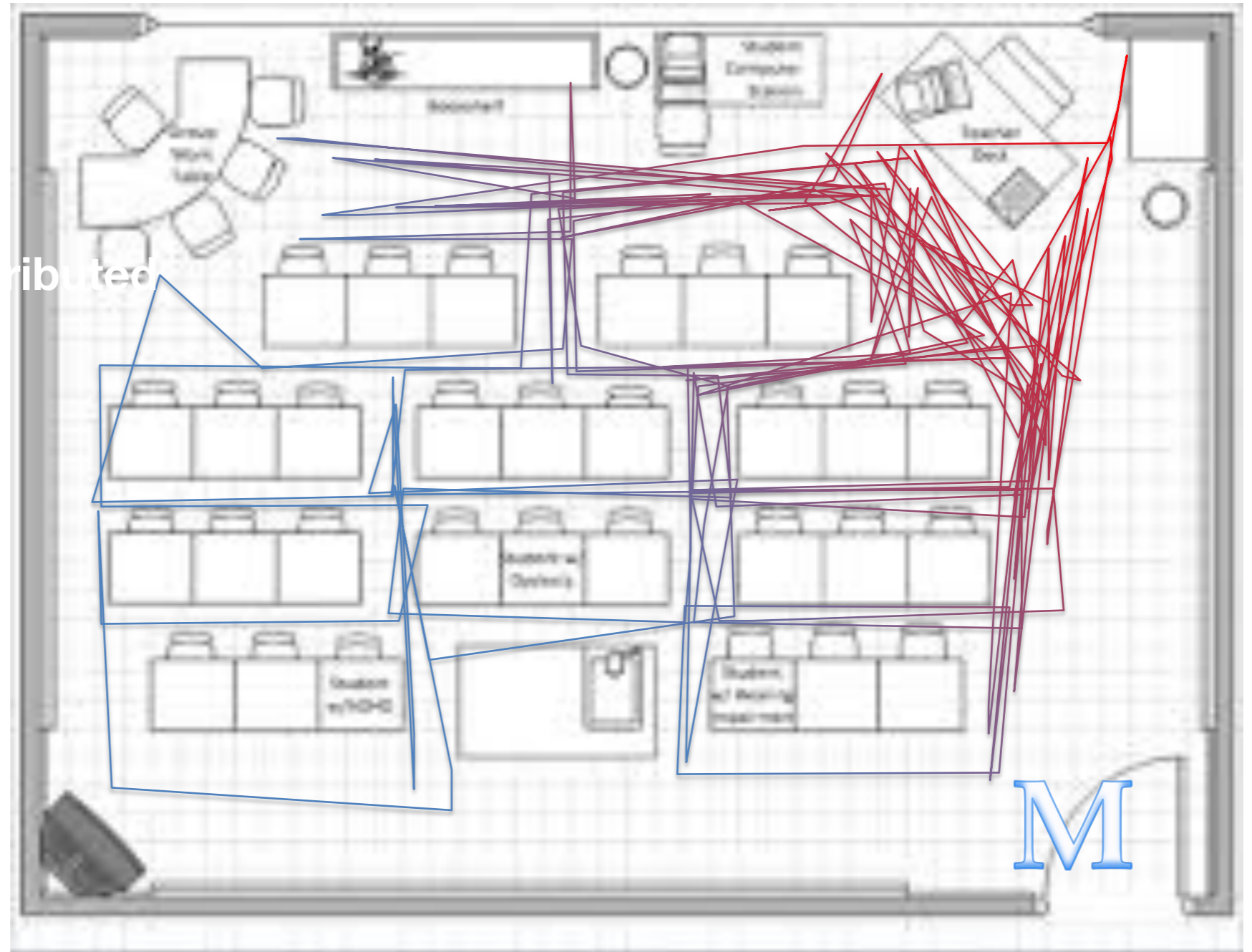
Private Dashboard



LUMILO

a pair of **glasses** that tune teachers in to
the **real-time, continuous assessments** that





Teachers'
Data

Visualisation



Teachers'
Data



Visualisation

You are crazy!

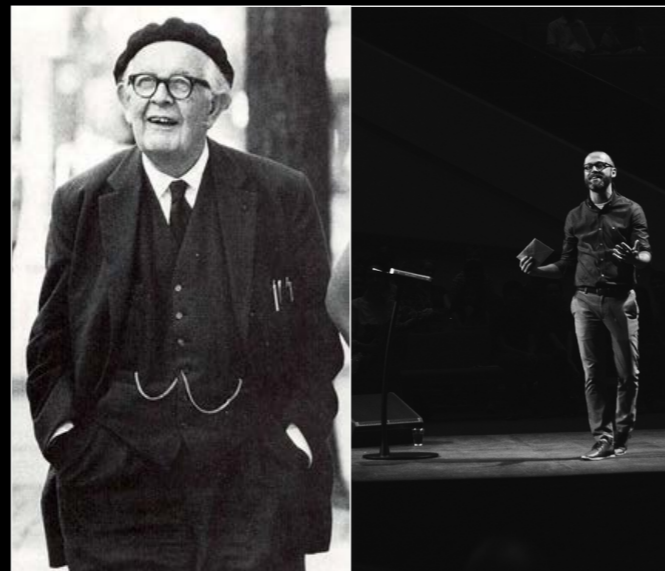
~~1. Are you crazy?~~



You are crazy!

1. ~~Are you crazy?~~

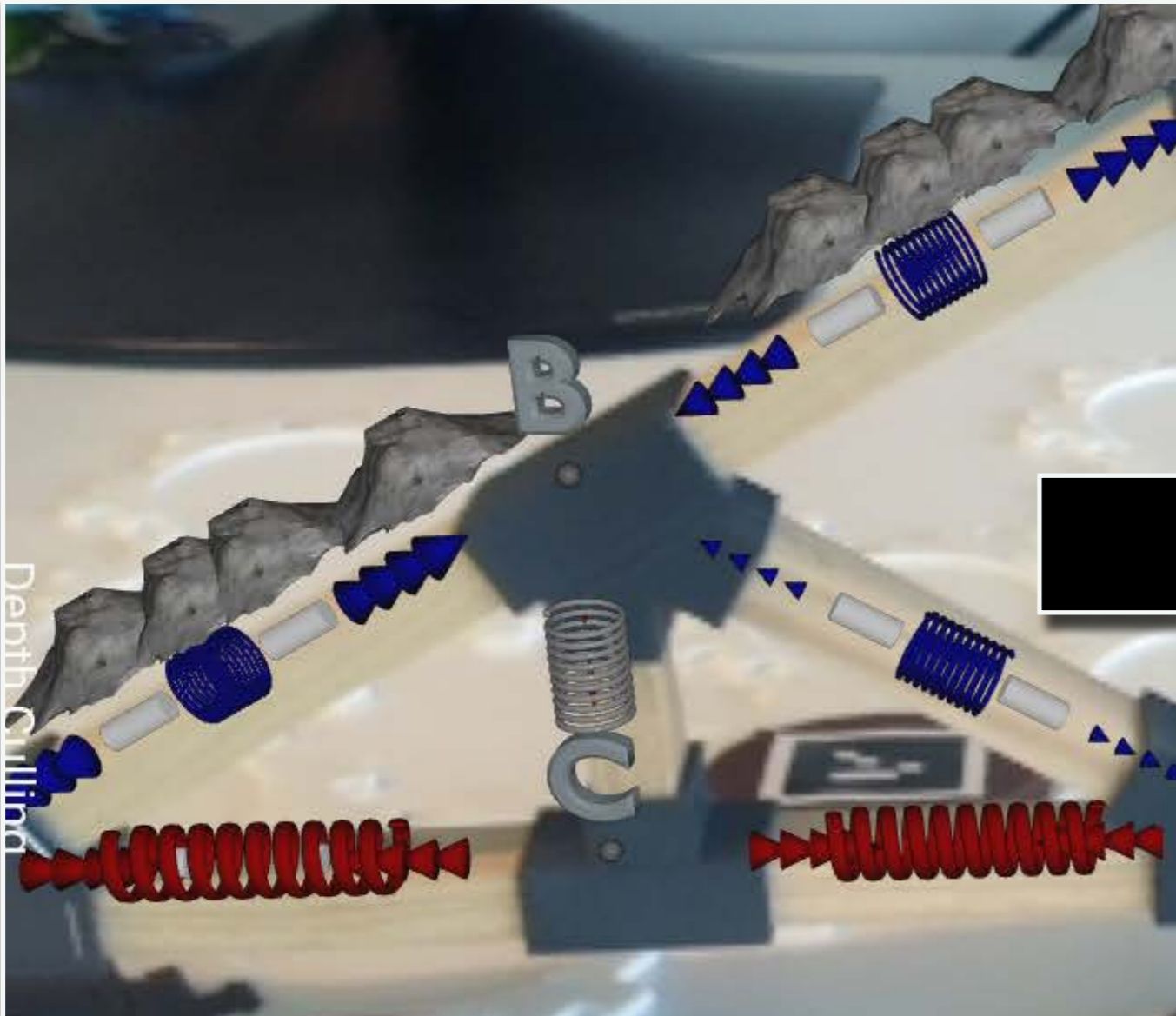
2. Lecturing better or lecturing less?





Intuitive statics for carpenters ?





2. (25 points) The frame shown below supports a load of ~~400~~ 180 N from its cable. Determine the reactions at A, B, and C necessary for equilibrium. Draw a final picture of member ABCD with forces properly oriented.

$\sum M_C = 0; A_y(3) - 180(4.7) = 0;$
 $A_x = 282 \text{ N} \rightarrow$
 $G_x = 102 \text{ N} \leftarrow$

$\sum F_y = 0; 282 - \frac{3}{5} F_C = 0$
 $F_C = 470 \text{ N} \nearrow$

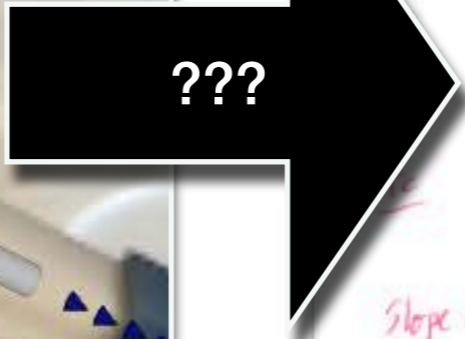
$\sum M_A = 0; \frac{3}{5} 470(4) + 180(6.2) - F_{BF}(2) = 0;$
 $F_{BF} = 1310 \text{ N} \downarrow$

$\sum F_y = 0; A_y - 1310 + \frac{3}{5} 470 + 180 = 0$
 $A_y = 954 \text{ N} \uparrow$

Slope wrong on F_C ...
 $F_C = \frac{5}{4} 282 = 352.5 \text{ N}$

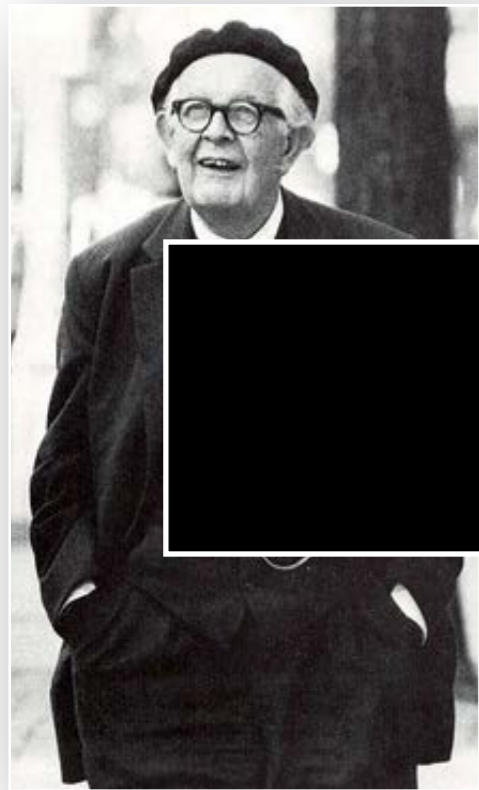
Don't need A_{dot} at C!
 Just a pin at C (no BF),
 or BF and no pin at C.

Support Rx's?
 2.15 pts, ...

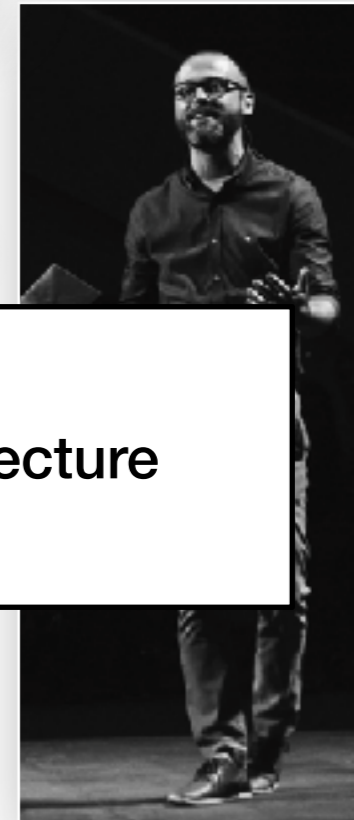


???

There is a time for telling



Problem Solving



Lecture

Who's the most consistent striker?



Year	Mike Arwen	Dave Backhand	Ivan Right
1988	14	13	13
1989	9	9	18
1990	14	16	15
1991	10	14	10
1992	15	10	16
1993	11	11	10
1994	15	13	17
1995	11	14	10
1996	16	15	12
1997	12	19	14
1998	16	14	19
1999	12	12	14
2000	17	15	18
2001	13	14	9
2002	17	17	10

“Productive Failure”

Comparing regularity

Mike Arwen : Mean = $\frac{280}{20}$
 = 14 goals / year
 Mode = 14

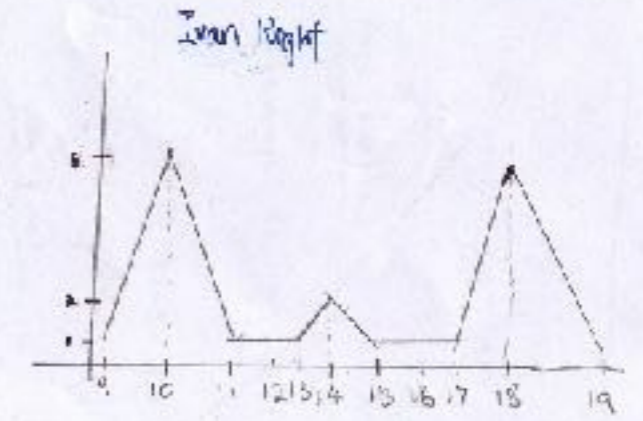
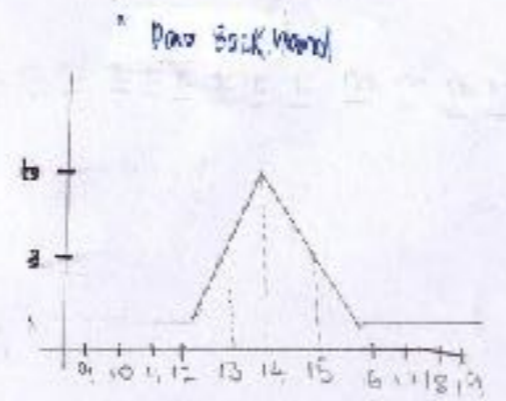
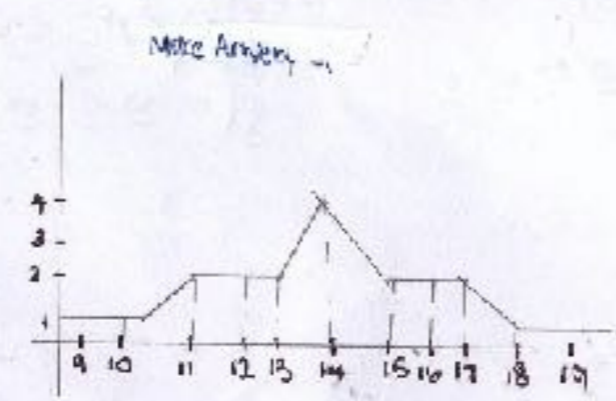
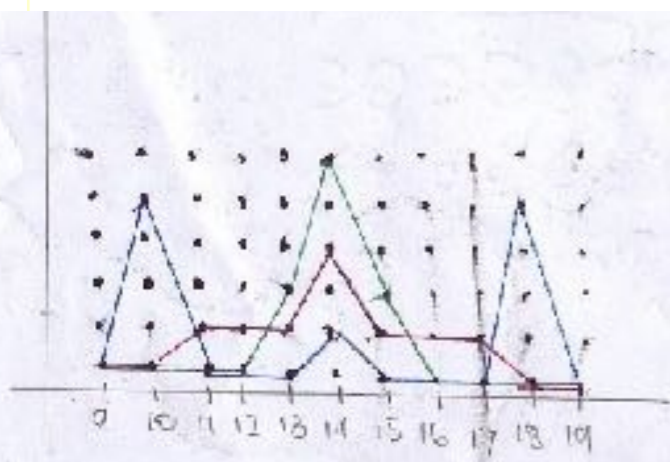
9	10	11	12	13	14	15	16	17	18	19
1	1	2	2	2	4	2	2	2	1	1

Dave Backhand : Mean = $\frac{280}{20}$
 = 14 goals / year
 Mode = 14

1	1	1	1	3	6	3	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---

Ivan Right : Mean = $\frac{280}{20}$
 = 14 goals / year
 Mode = 18 and 10

1	5	1	1	1	2	1	1	1	5	1
---	---	---	---	---	---	---	---	---	---	---



Sum of year-on-year deviation

Mike:	$9-14 = -5$	Dave:	-4	Ivan:	5
	$14-9 = 5$		7		-3
	$10-14 = -4$		-2		-5
	$15-10 = 5$		-4		1
	-4		1		-6
	4		1		7
	-4		4		-7
	5		-5		2
	-4		-2		-5
	4		3		4
	-4		-1		-9
	5		3		1
	-4		-4		8
	4		1		-7
	-4		4		-1
	5		-4		8
	-4		1		0
	5				-5
	-4				
	<hr/>		<hr/>		<hr/>
	0		-2		-5

0 ✓ Mike

Range
~~price~~ amount for:

Mike Armen: $9 - 19 = 10$

Dave husband: $9 - 19 = 10$

Ivan Right: $9 - 19 = 10$

} X

Sum of deviations about the mean

Year	avg	M.A	D.B	I.R	x		
1982	14	14	13	13	0	-1	-10
1989	14	9	14	18	-5	-5	4
1990	14	14	16	15	0	+2	+
1991	14	10	14	10	-4	0	-4
1992	14	15	10	16	+1	-4	+2
1993	14	11	11	10	-3	-3	-4
1994	14	15	13	17	+1	-1	+3
1995	14	11	14	10	-3	0	-4
1996	14	16	15	12	+2	+1	-2
1997	14	12	19	14	-2	+5	0
1998	14	16	14	19	+2	0	+5
1999	14	12	12	14	-2	-2	0
2000	10	17	15	18	+3	+1	+4
2001	14	13	14	9	-1	0	-5
2002	14	12	17	16	+2	+3	-4
2003	14	13	13	18	-1	-1	+4
2004	14	18	14	11	+4	0	-3
2005	14	14	18	10	0	+4	-4
2006	14	19	14	18	+5	0	+4
2007	14	14	15	12	0	+1	+4

Average of year-on-year absolute deviation

MIKE = $\frac{5+5+4+5+4+4+4+5+4+4+4+5+4+4+4+5+4+5+4}{20-1}$

= $84/19 = 4.26$

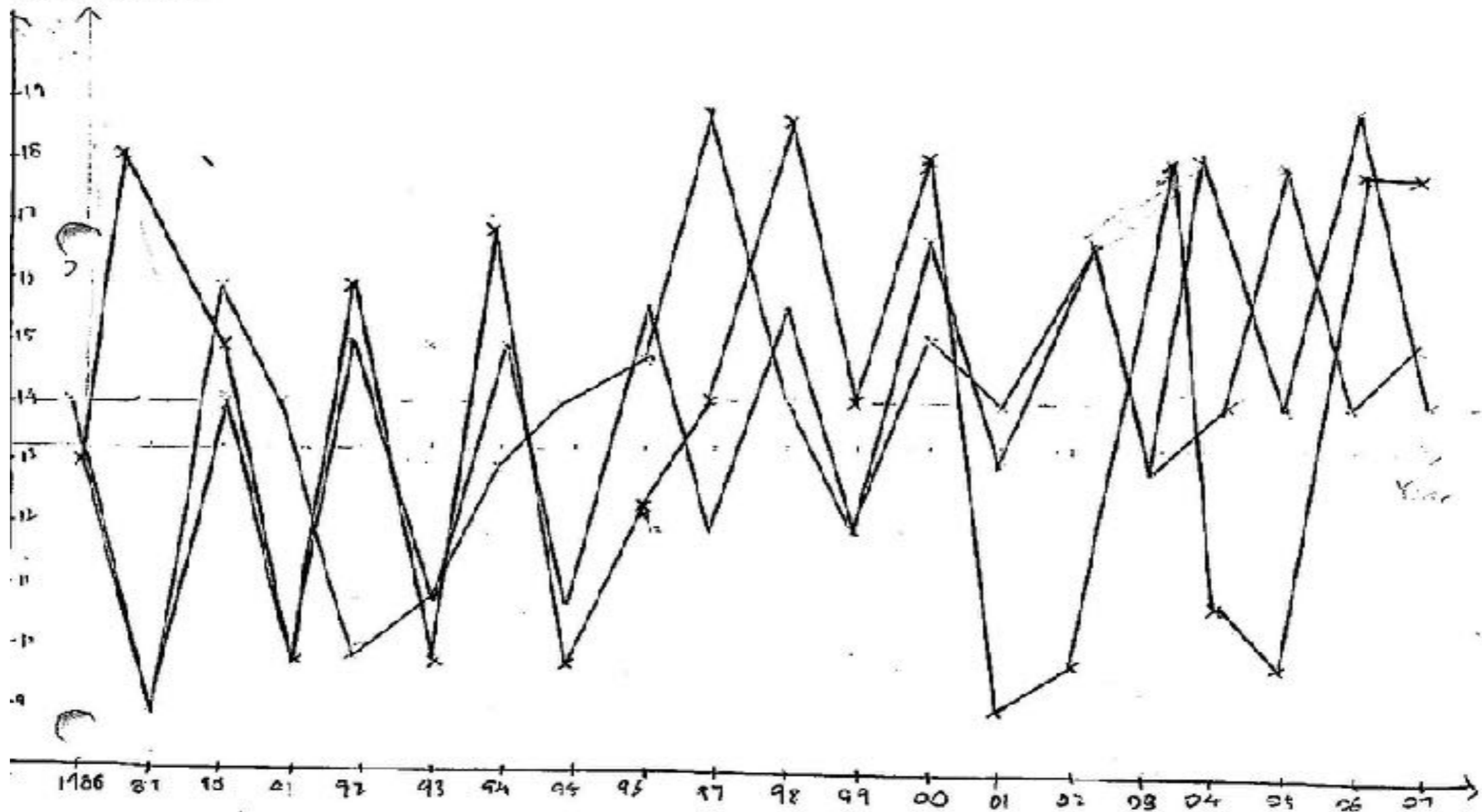
DAVE = $\frac{4+7+2+4+1+2+1+1+4+5+2+3+1+3+4+1+4+4+1}{19}$

= $54/19 = 2.84$ DAVE is most consistent

IVAN = $\frac{5+3+5+1+6+7+7+2+2+5+5+4+9+1+8+7+1+8+0}{19}$

= 4.79

Goals Scored



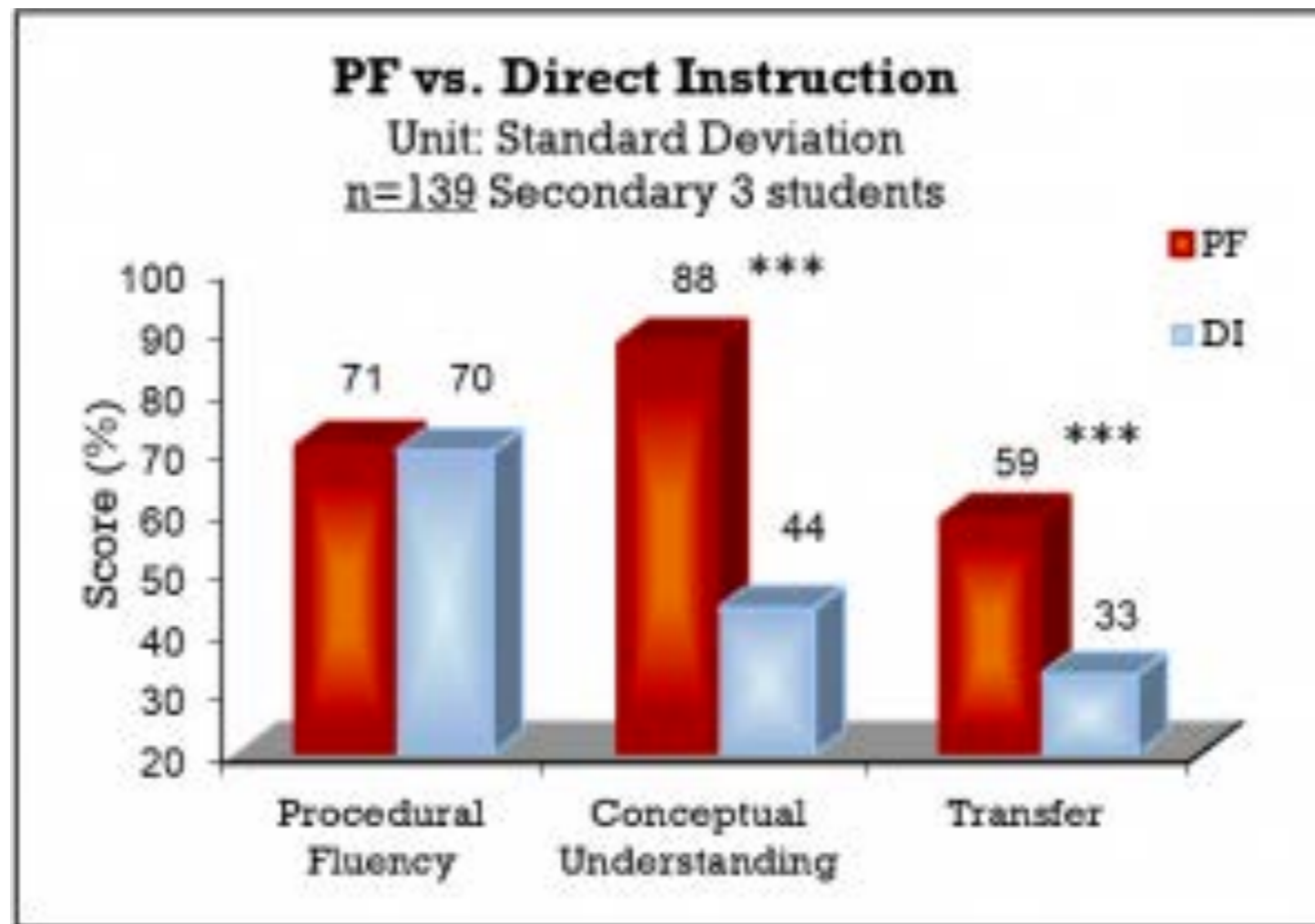
- Mike Arwen
- - - Dave Backford
- ... Ivan Right

Idea 3 Manure Graph Length

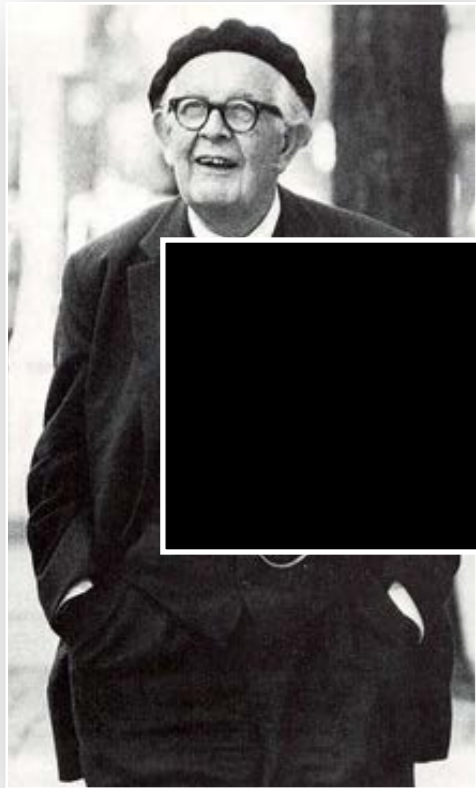
MA $\sqrt{26} + \sqrt{26} + \sqrt{17} + \sqrt{26} + \sqrt{17} + \sqrt{17} + \sqrt{17} + \sqrt{26} + \sqrt{15} + \sqrt{15} + \sqrt{15} + \sqrt{26} + \sqrt{17} + \sqrt{17} + \sqrt{17} + \sqrt{26} + \sqrt{17} + \sqrt{26} + \sqrt{21} = 83.26$
 DB $\sqrt{17} + \sqrt{26} + \sqrt{15} + \sqrt{17} + \sqrt{15} + \sqrt{15} + \sqrt{26} + \sqrt{17} + \sqrt{26} + \sqrt{15} + \sqrt{17} + \sqrt{15} + \sqrt{15} + \sqrt{26} + \sqrt{17} + \sqrt{17} + \sqrt{26} = 56.54$
 IR $\sqrt{26} + \sqrt{15} + \sqrt{26} + \sqrt{17} + \sqrt{15} + \sqrt{15} + \sqrt{15} + \sqrt{15} + \sqrt{15} + \sqrt{26} + \sqrt{17} + \sqrt{26} + \sqrt{15} + \sqrt{15} + \sqrt{26} + \sqrt{26} + 1 = 94.54$

∴ Dave Backford is the most consistent player as he has the shortest 'stretched-out' graph, showing consistency over time.

Azad Akaen 3



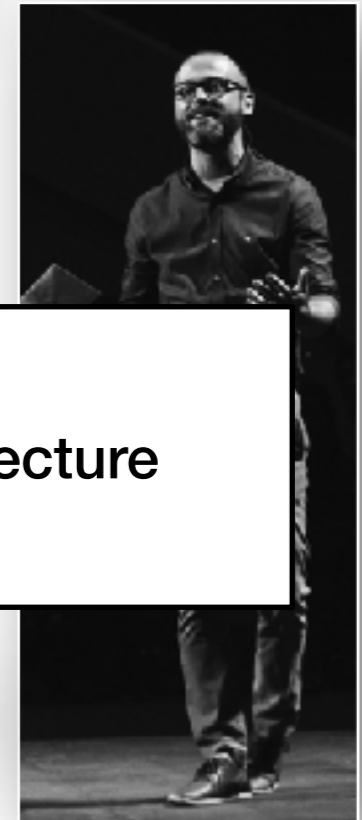
There is a time for telling



Problem Solving



Lecture



The art of debriefing



KOSMOS 200
KOSMOS 200
KOSMOS 200
KOSMOS 200
KOSMOS 200
KOSMOS 200

KOSMOS 500
KOSMOS 500
KOSMOS 500
KOSMOS 500
KOSMOS 500
KOSMOS 500

KOSMOS KAFFER ART. NR. 858618 INHALT: 5 CTN. MADE IN CHINA
KOSMOS KAFFER ART. NR. 858618 INHALT: 5 CTN. MADE IN CHINA
KOSMOS KAFFER ART. NR. 858618 INHALT: 5 CTN. MADE IN CHINA
KOSMOS KAFFER ART. NR. 858618 INHALT: 5 CTN. MADE IN CHINA

KOSMOS KAFFER-RUBOTER ART. NR. 858618 INHALT: 5 CTN. MADE IN CHINA

KOSMOS DEHEMI-PERISKOP ART. NR. 858618 INHALT: 5 CTN. MADE IN CHINA

PROJECT

Erweiterung
Anwendung

The logo for Simpliquity features a stylized circular icon on the left, composed of two concentric rings in shades of green and grey. To the right of the icon, the word "Simpliquity" is written in a clean, modern, sans-serif typeface. The letter 'i' in "Simpliquity" has a small green dot, and the letter 'l' has a small green vertical bar, mirroring the green color in the icon.

Simpliquity

Orange

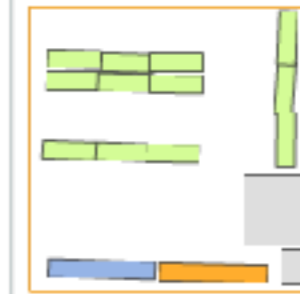


Comparaison

Afficher les statistiques



Brute: **256m²**
Brute stock.: **236m²**
Nette: **30m²**
Étagères: **12**
Degre d'util.: **12.6%**
Chariot: **gerbeur**
Temps/palette: **115s**
Temps simul.: **0:13:49**



Brute: **256m²**
Brute stock.: **220m²**
Nette: **36m²**
Étagères: **12**
Degre d'util.: **16.4%**
Chariot: **gerbeur**
Temps/palette: **130s**
Temps simul.: **0:23:40**



Question

Please order a standard return 2nd class

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 Basel	To Geneve	City		
		Basel	Davos	Fribourg
		Geneve	Lausanne	Neuchatel
		Zurich		
Travel Return	Fare	Travel		Fare
		One-way	Return	Standard
				Young
				Half-fare
Class	Bike	Class	Bike	

Question

Please order a standard return 2nd class ticket

From:
Fribourg

To:
Zurich

Travel:
Return

Fare:
Standard

Class:
2nd

Bike:
No

Question

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



From Basel	To Zurich
Travel	Fare
<input type="radio"/> One-way	<input type="radio"/> Standard
<input type="radio"/> Return	<input type="radio"/> Young
	<input type="radio"/> Half-fare
Class	Bike
<input type="radio"/> 1st	<input type="radio"/> Yes
<input type="radio"/> 2nd	<input type="radio"/> No

⌚ :24

⌚ :3€

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 | ↓ ↑ |

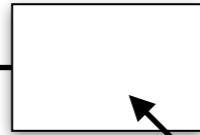
The drag and drop is easiest to see all of the options.

Submit

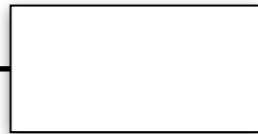
Class



Team



Solo



The screenshot displays two side-by-side panels. The left panel, titled "Chat (group/A1)", shows a "Group Chat" interface with several messages:

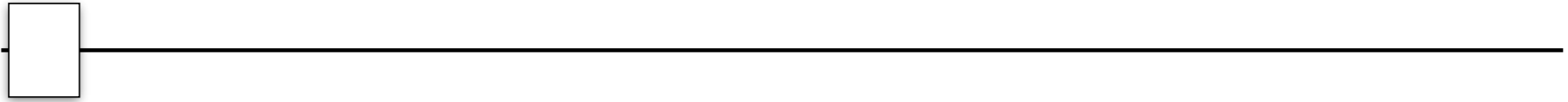
- Message 1: "I had really liked the drag and drop because everything was so visible"
- Message 2 (Jenny): "It was so slow though. All of the movement took forever"
- Message 3 (Ryan): "What about the form? Everything was still visible but relatively fast with familiar interactions."
- Message 4 (Jenny): "yeah, ok"
- Message 5 (Jenny): "What after that?"

The right panel, titled "Group Preference (group/A1)", contains the following text and elements:

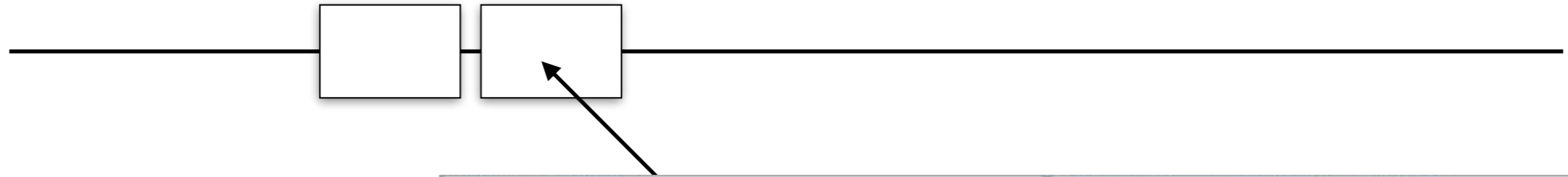
- Text: "You and your partner must have the same ranking to submit."
- Text: "Rank the interfaces in the order that you would most prefer them."
- Two columns for ranking: "Ryan's List" and "Jenny's List".
- Each list contains four items: "1 Form", "2 Drag and Drop", "3 Command", and "4 Map".
- Each item has a blue arrow icon (down or up) for reordering.
- Text at the bottom: "The form showed all the choices but was still pretty fast."
- A blue "Submit" button.

Socio-cognitive conflict

Class



Team



Solo



The screenshot shows a user interface with two main panels. The left panel is titled "Chat (group/alone)" and contains a "Group Chat" section with two messages from a "Friendly robot": "Hello Guys :) I <3 CHILLians" and "Ryan ranked the interfaces in the following order: Command, Drag and Drop, Form, Map, with the justification 'The command is fastest once you have practice.'". The right panel is titled "Group Preference with Data (group/alone)" and contains the instruction "You and your partner must have the same ranking to submit." followed by "Rank the interfaces in the order that you would most prefer them." and "Ryan's List". Below this is a section "At rank 1, add item:" with four buttons: "Form", "Drag and Drop", "Command", and "Map". The bottom right panel is titled "Train Data (group/alone)" and contains a "STATS" section with a line graph titled "MEAN TIME PER TICKET FOR EACH INTERFACE". The graph shows mean time for four interfaces (map, dragdrop, command, form) across three trials. The y-axis is "Mean Time" (20-40) and the x-axis is "Trial" (1, 2, 3).

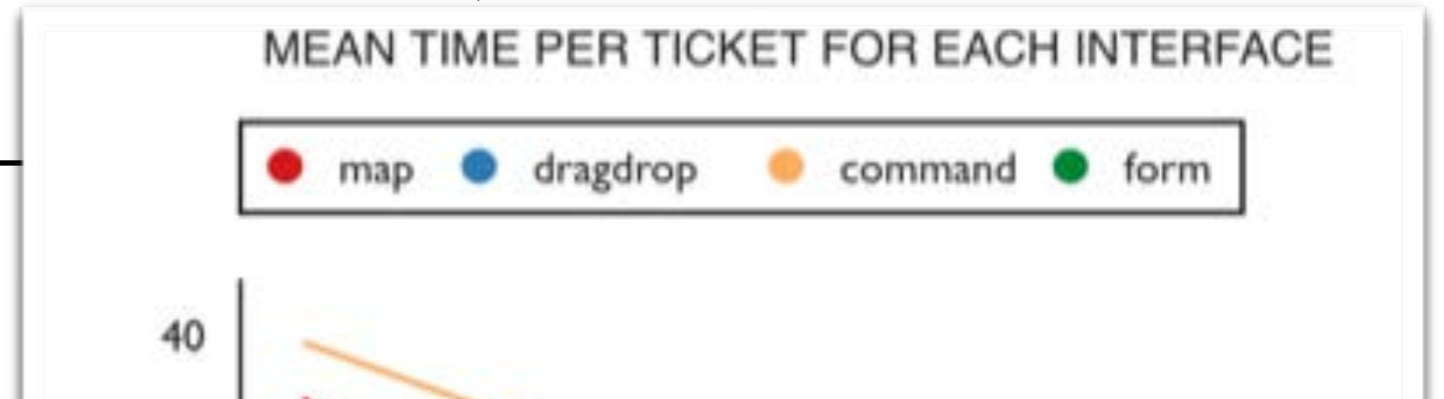
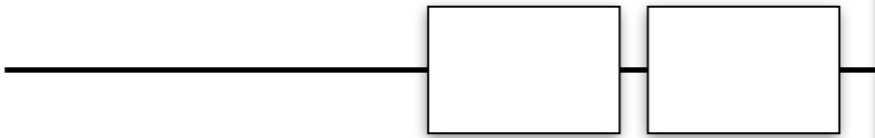
Trial	map	dragdrop	command	form
Trial 1	38	28	40	35
Trial 2	20	24	33	20
Trial 3	19	21	30	19

Arguing with data

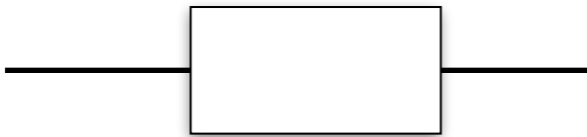
Class



Team



Solo

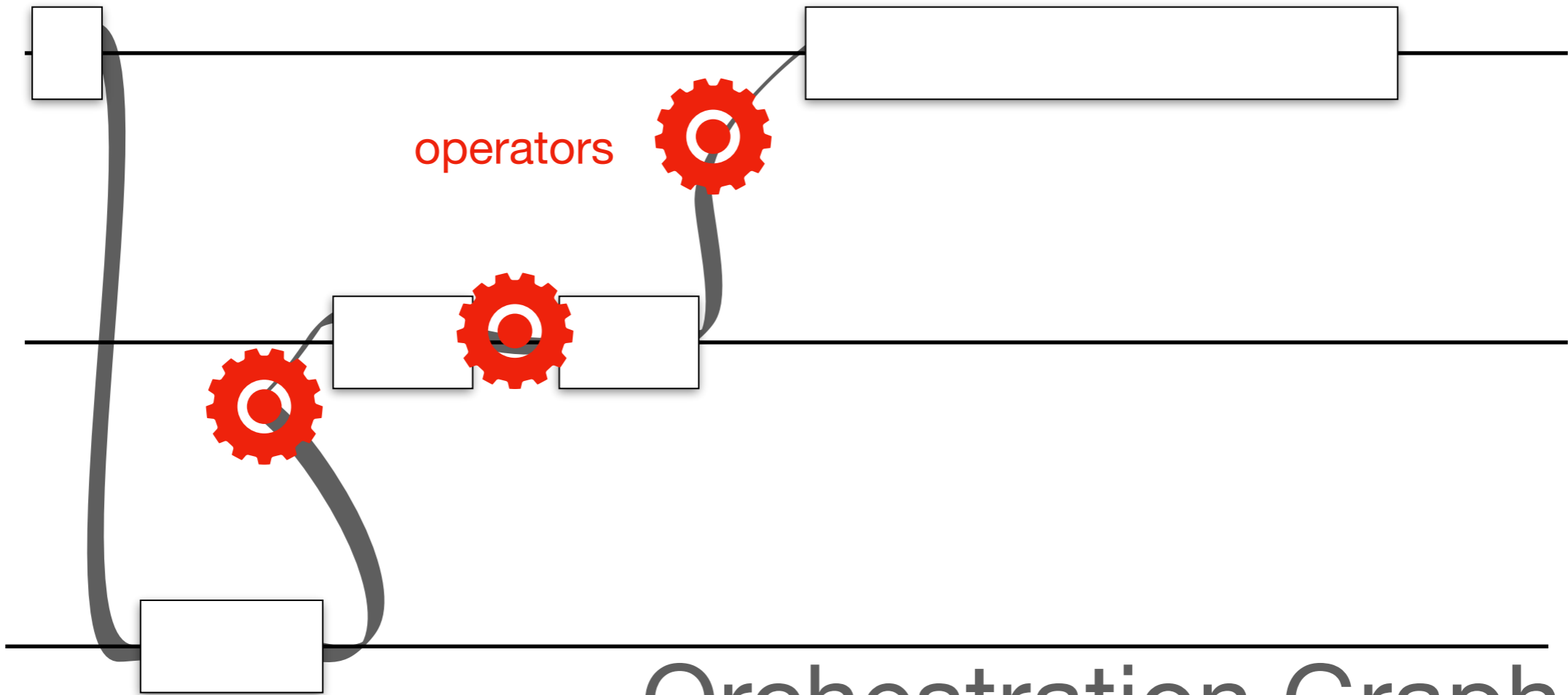


	(1) Connaissances sémantiques liées à la tâche	(2) Connaissances sémantiques liées à la tâche transposition informatique de la tâche	(3) Connaissances syntaxiques, arbitraires
NOVICES	✓		
INTERMITTENTS	✓	✓	
EXPERTS	✓	✓	✓

Class

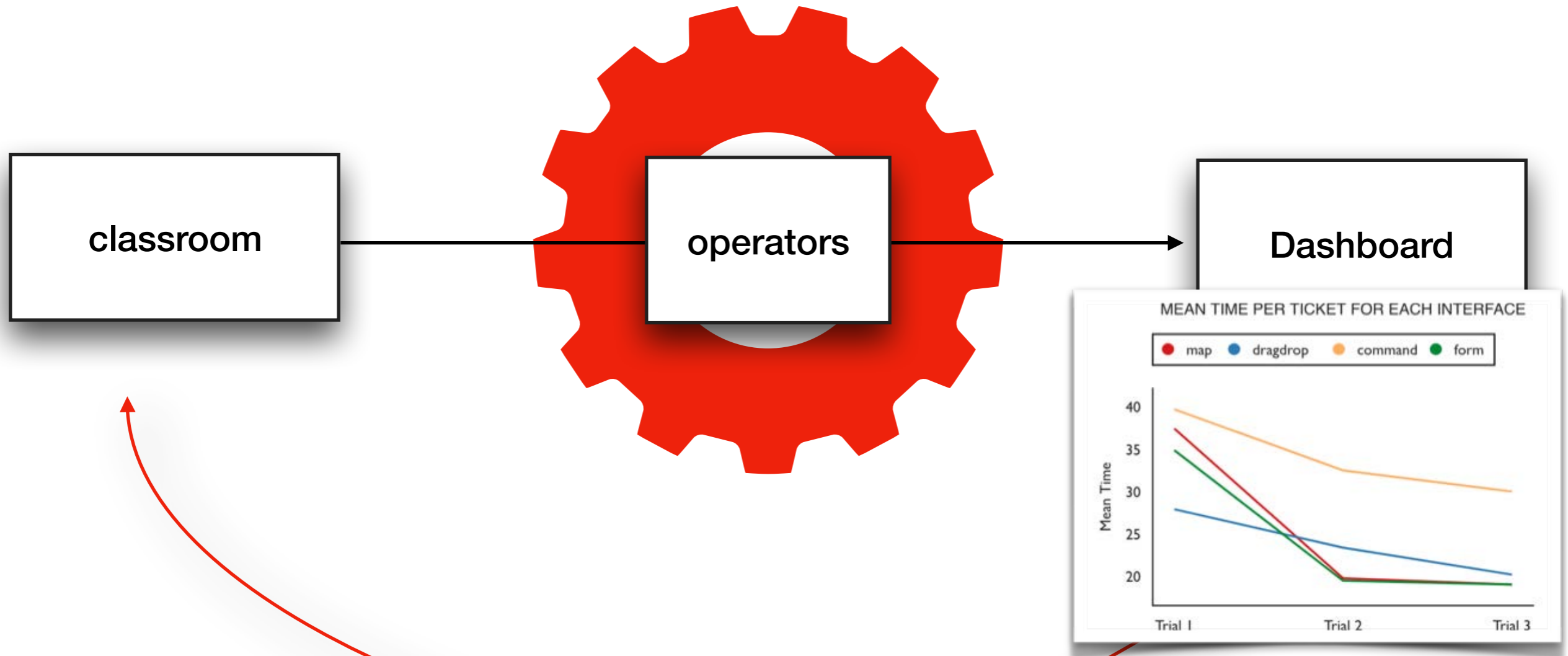
Team

Solo



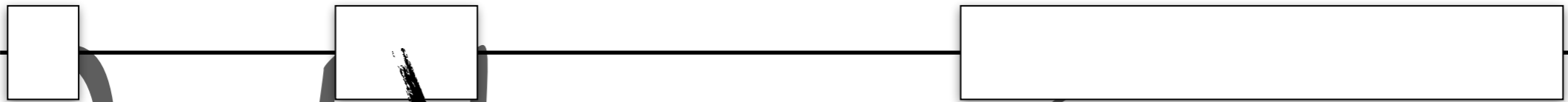
Orchestration Graph

Aggregation, comparison, visualisation,.....



Monitoring
Intervention
+ Debriefing

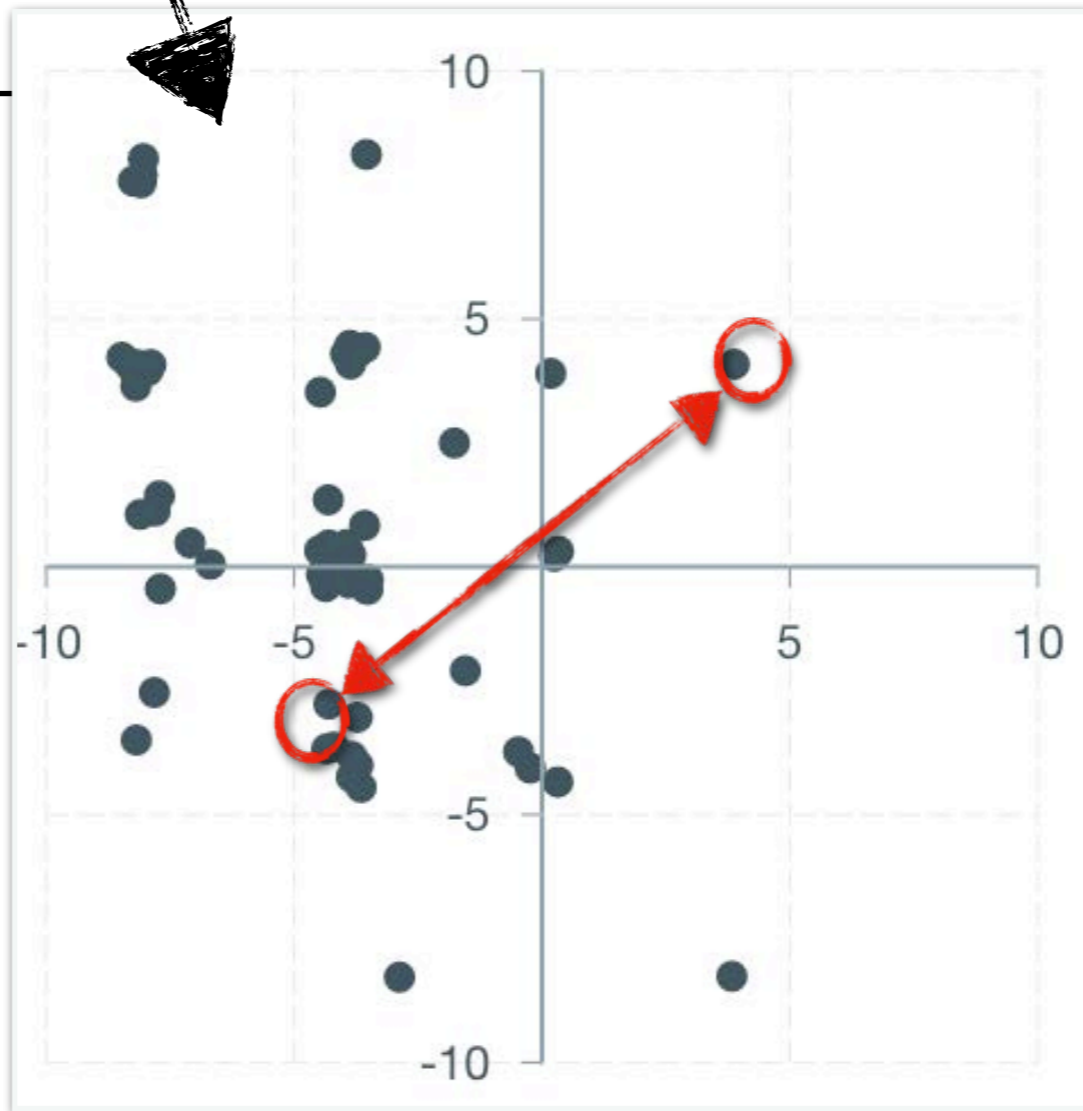
Class



Team



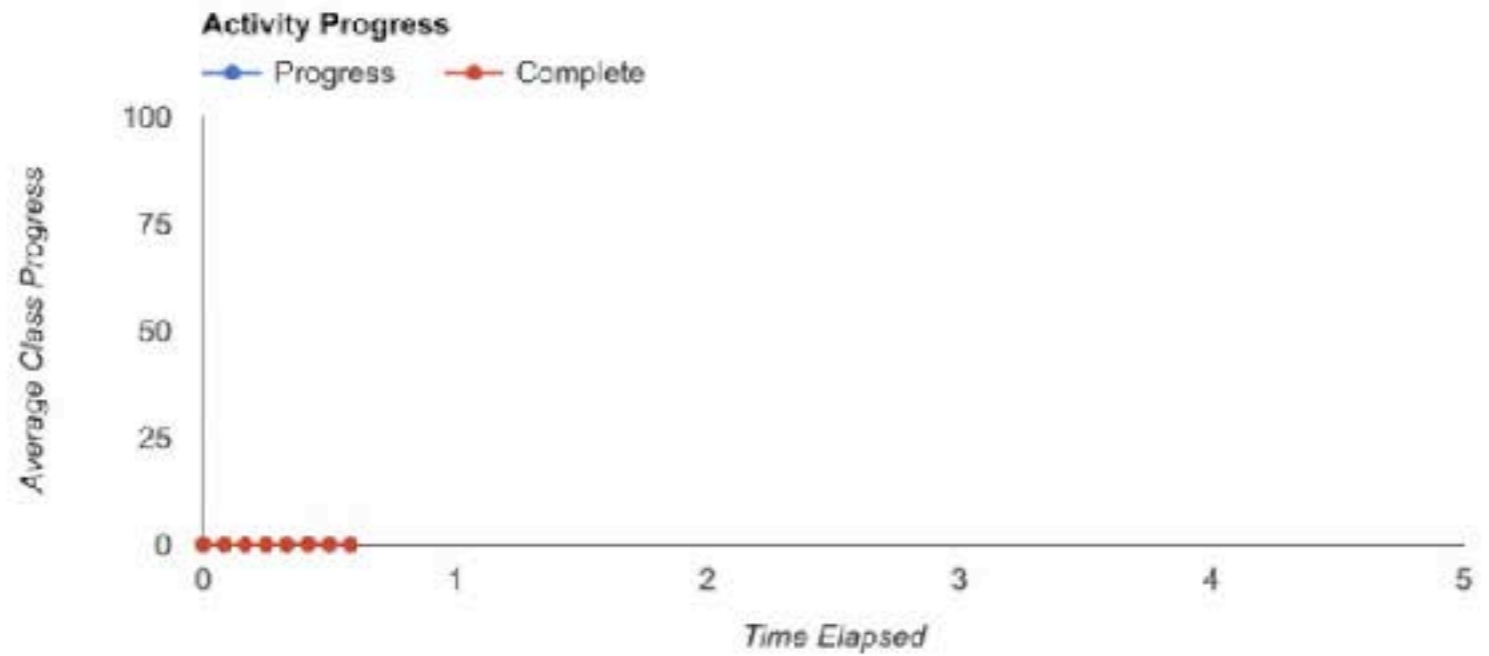
Solo



Map of opinions

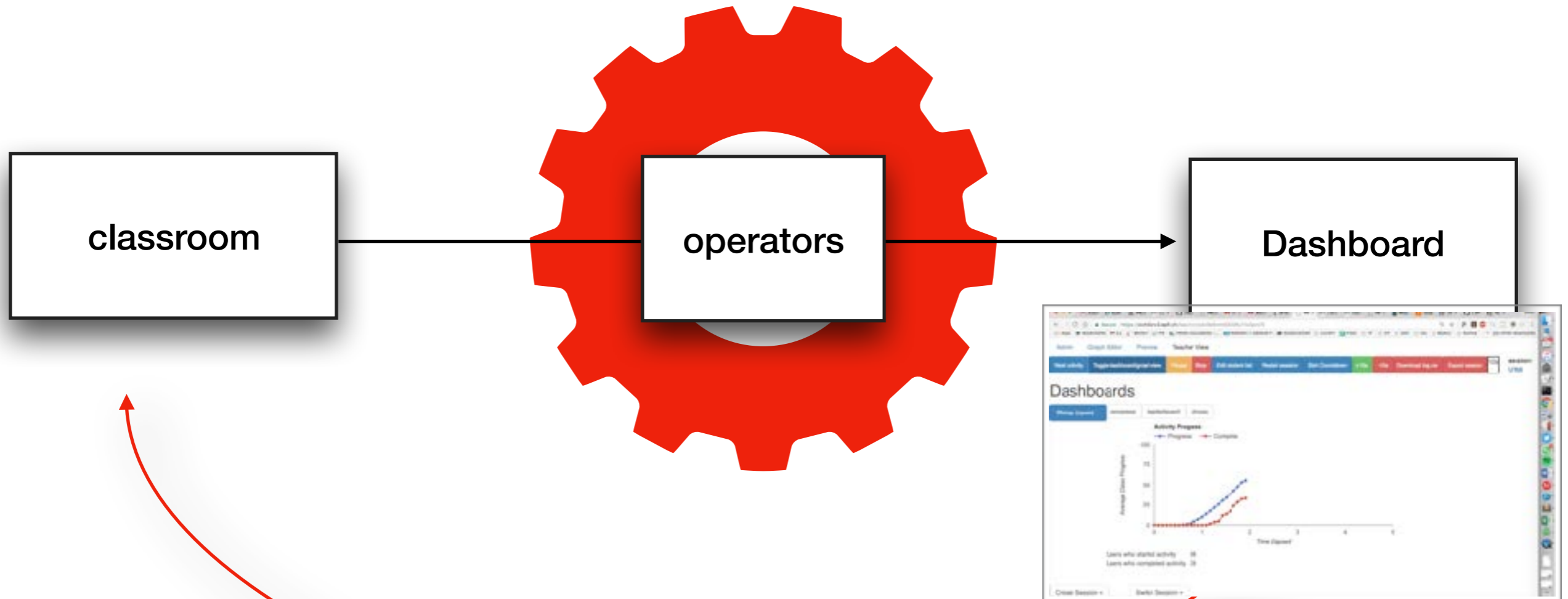
Dashboards

Stroop (open) progress leaderboard stroop



Users who started activity 3
Users who completed activity 0

Aggregation, comparison, visualisation,.....



Monitoring
Intervention
+ Debriefing
+ Timing

Looking for a postdoc or project manager

Monitoring
Intervention
Debriefing
Timing

Classware = orchestration technology

Monitoring
Intervention
+ Debriefing
+ Timing

