



Innovating my teaching based on learning theories

Jacques Lanarès

R O B I N W I L L I A M S

He was their inspiration. He made their lives extraordinary.

DEAD
POETS
SOCIETY

A PETER WER FILM



Deep Learning

- Link ideas between different topics
- Find the meaning, look for principles
- Link concepts real situations
- Relate to what is already known

Learning approaches Continuum



Surface
Learning

Deep
Learning

Focused on
reproducing
content

Focused on
integration / ownership
of knowledge

From Prosser et Trigwell

TIGER

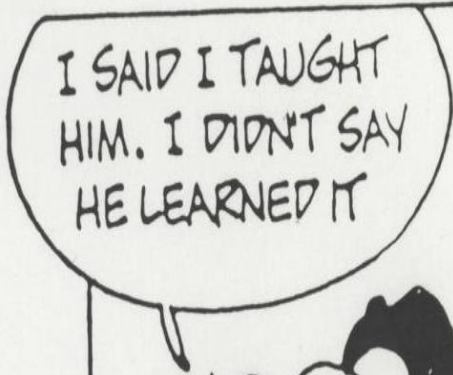
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I TAUGHT STRIPE HOW TO WHISTLE



I DON'T HEAR HIM WHISTLING



I SAID I TAUGHT HIM. I DIDN'T SAY HE LEARNED IT

BUD
BLAKE
56



coursera



The MOOC revolution: Status and next steps

Andrew Ng

Stanford University & Coursera



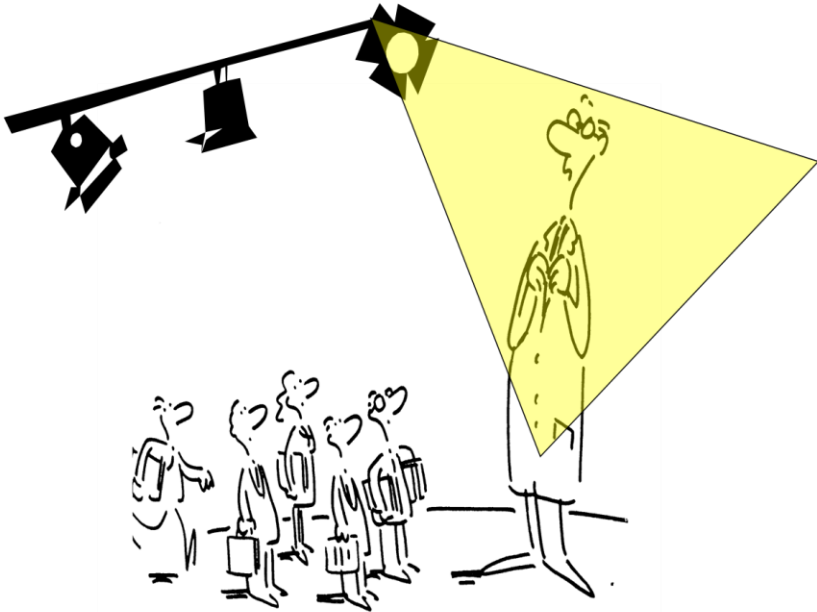
THE FLIPPED CLASSROOM REVOLUTION

COMING TO A BRAIN
NEAR YOU

Student centered Teaching & Learning

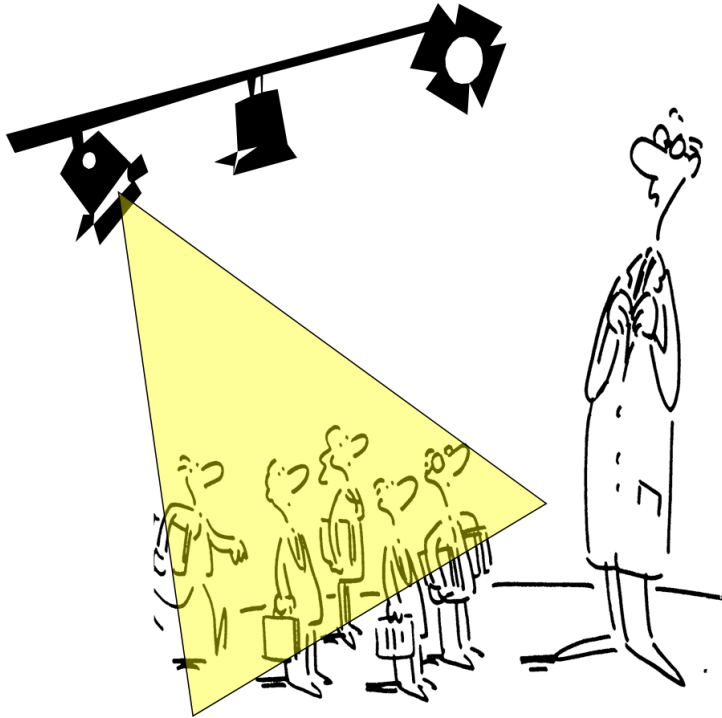


Shift focus from ...



- Focus on Teachers
- Focus on Content

... to an other Focus



- Focus on Learners
- Focus on Learning outcomes

My Goal is to address questions such as

- ✓ What is learning
- ✓ How do we learn
- ✓ What are the practical implications ?

- ✓ Teaching & Learning
- ✓ Approaches to Learning
- ✓ Practical application

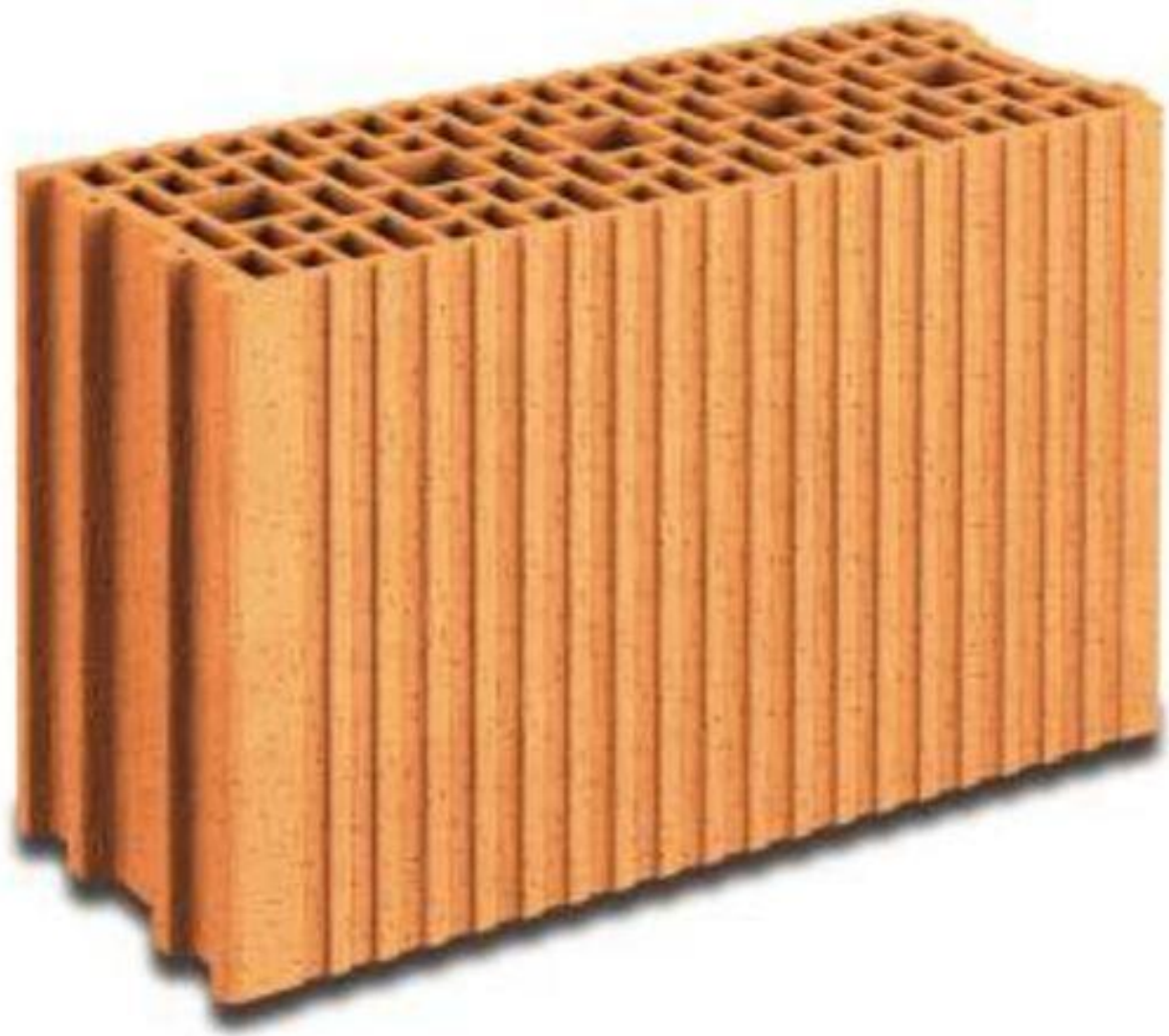
✓ Teaching & Learning

✓ Learning approaches

✓ Practical application



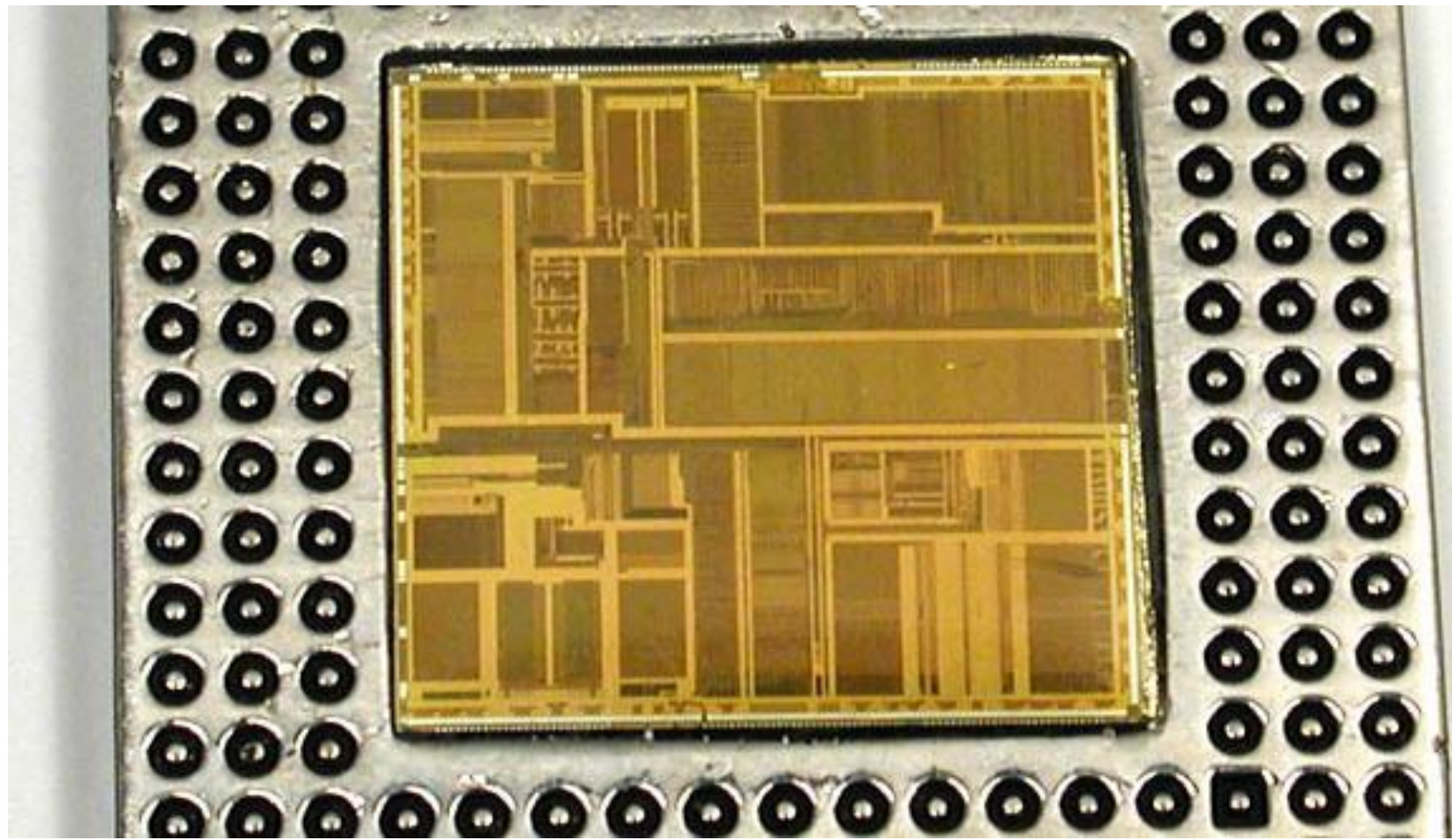






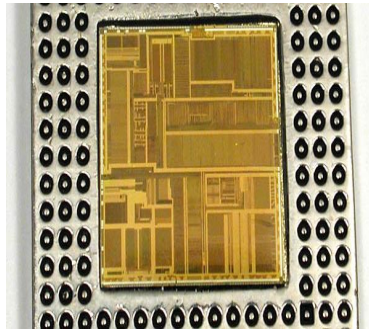
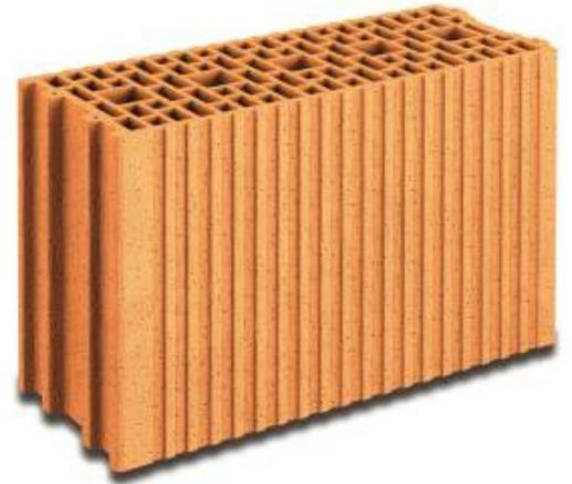






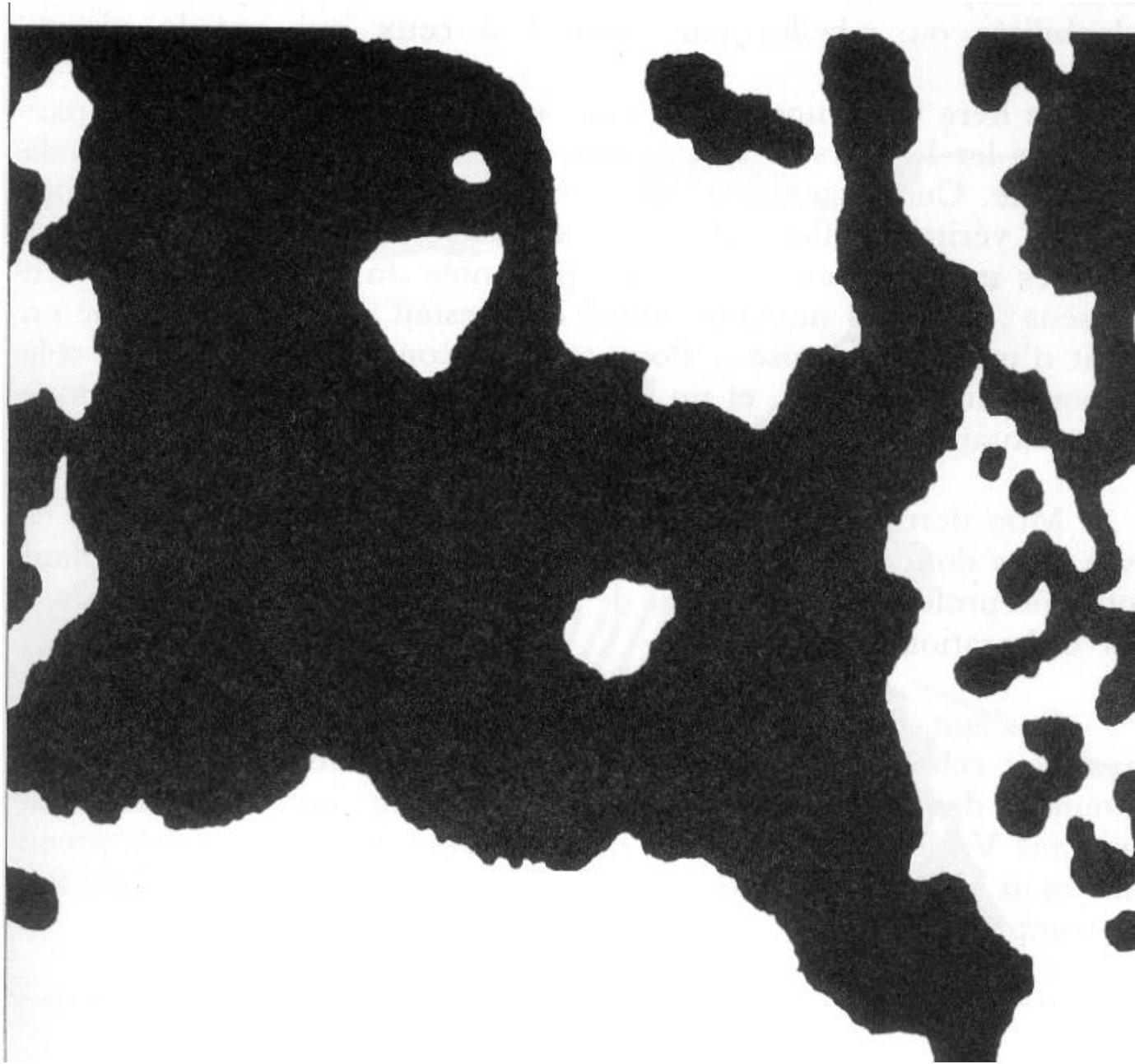


Which object do you spontaneously link with « teaching » ?



Change

- Behaviour
- Representation





- ✓ Teaching & Learning
- ✓ Learning approaches
- ✓ Practical application

Stimulus



Situation



Change

- Behaviour
- Representation

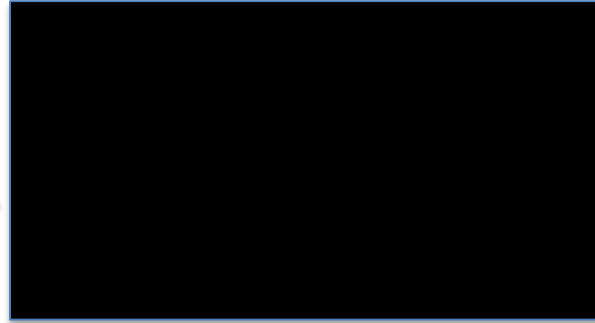




Stimulus



Situation

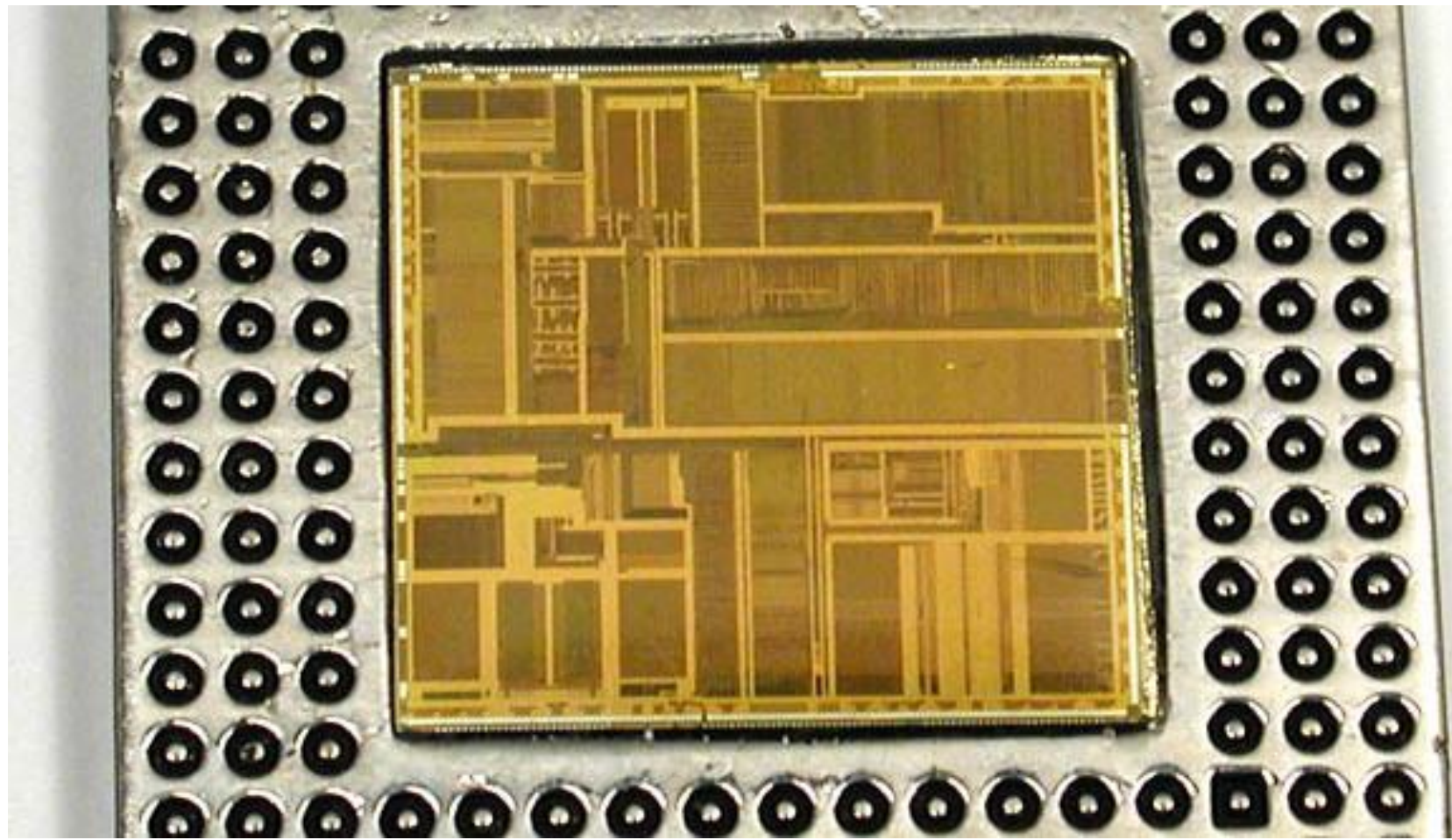


Change

- Behaviour
- Representation



Behaviourist



Stimulus



Situation



Change

- Behaviour
- Representation



Behavioriste



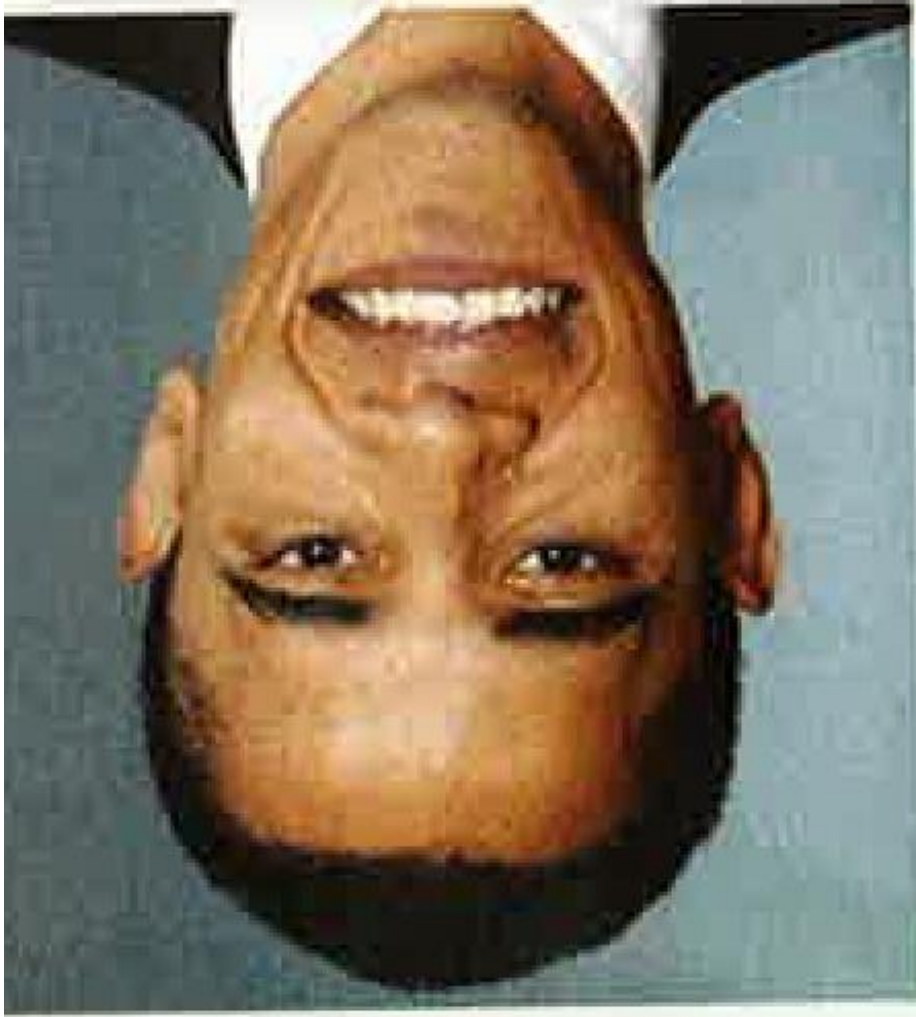
Cognitiviste

12 13 14

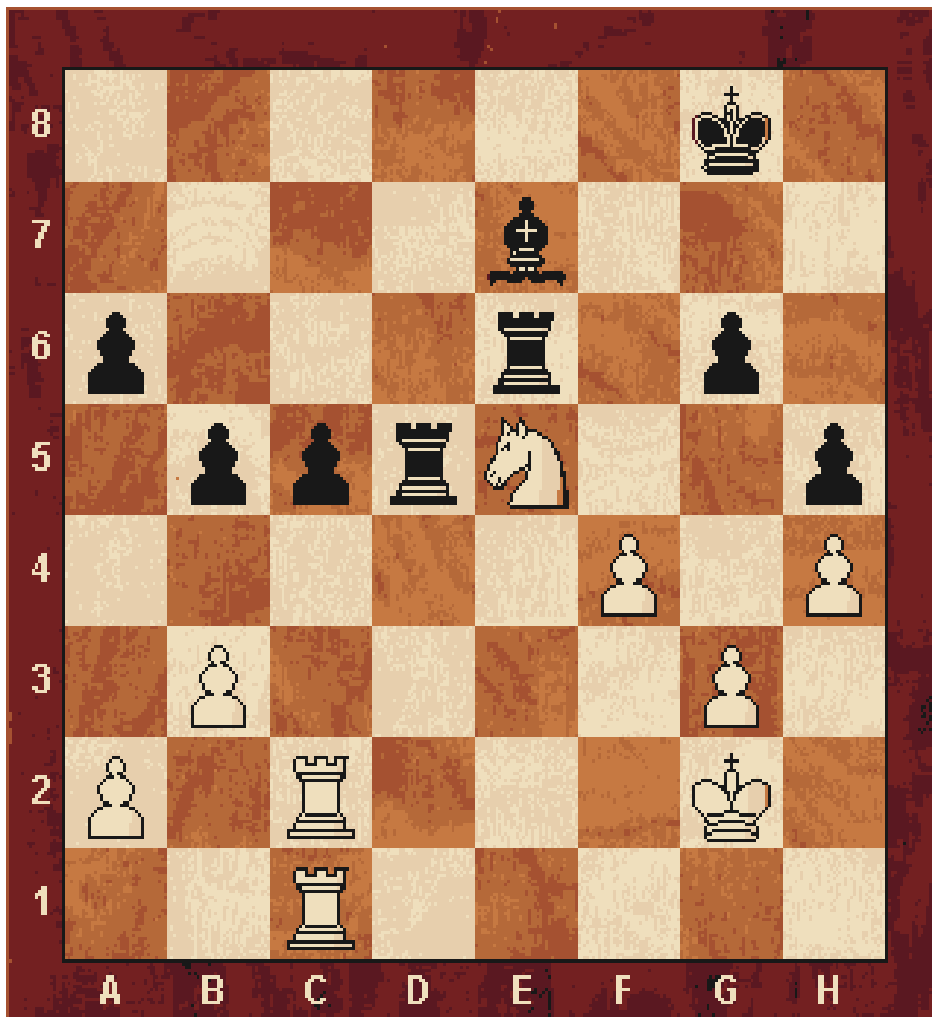
A B C

12 13 14

A B C

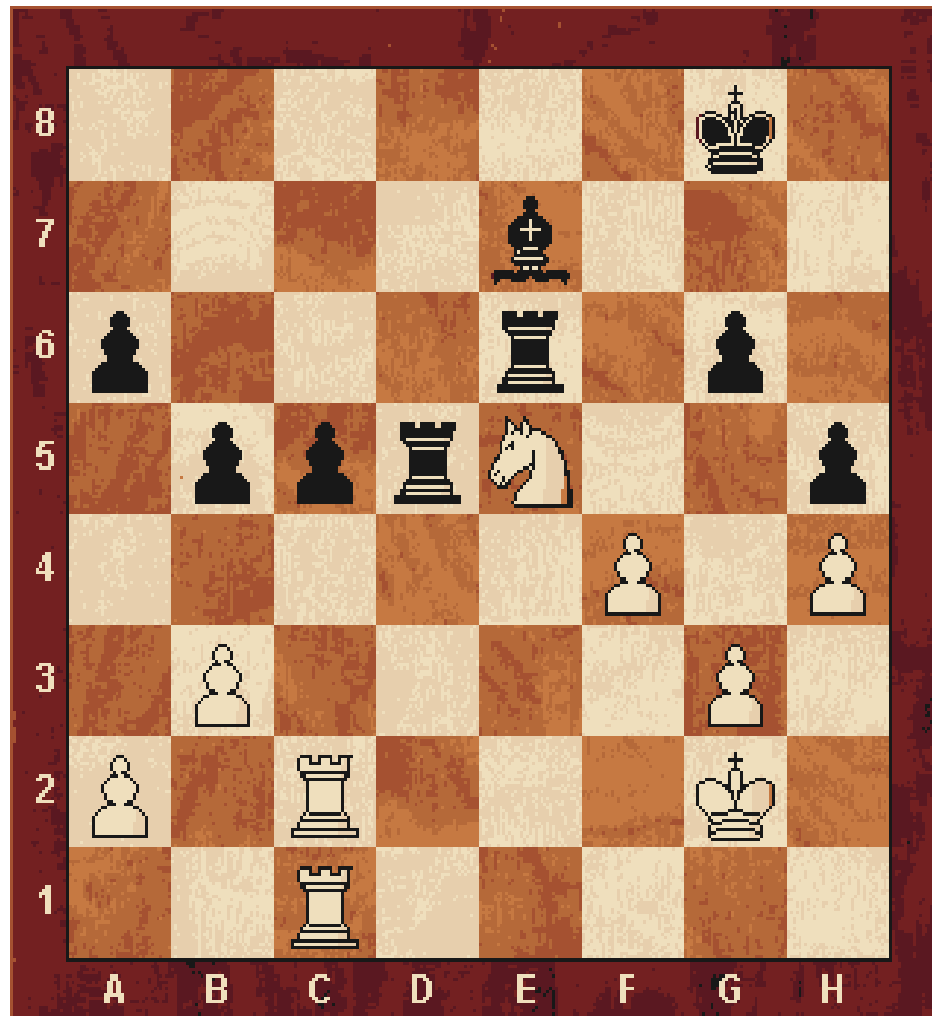






Simon & Chase

Learn = Link with what we know



1 = 1

2 = 2

3 = 3

4 = 4

5 = 5

6 = 6

7 = 7

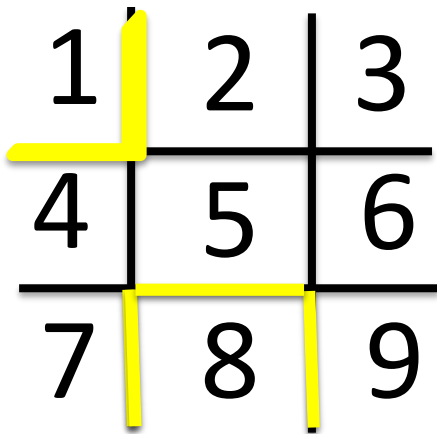
8 = 8

9 = 9

1 8 5 9 3 2

1	2	3
4	5	6
7	8	9





D'après T. Jensen, Aarhus Univ.

Gr. A

Gr. B

Gr. C

GOAT
House
Boat
CAR

Upper
or
Lower?

Rhyme
with
Coat ?

Which
category
of object?

Gr. A

Gr. B

Gr. C

GOAT
House
Boat
CAR

Upper
or
Lower?

Rhyme
with
Coat ?

Which
category ?

20%

50%

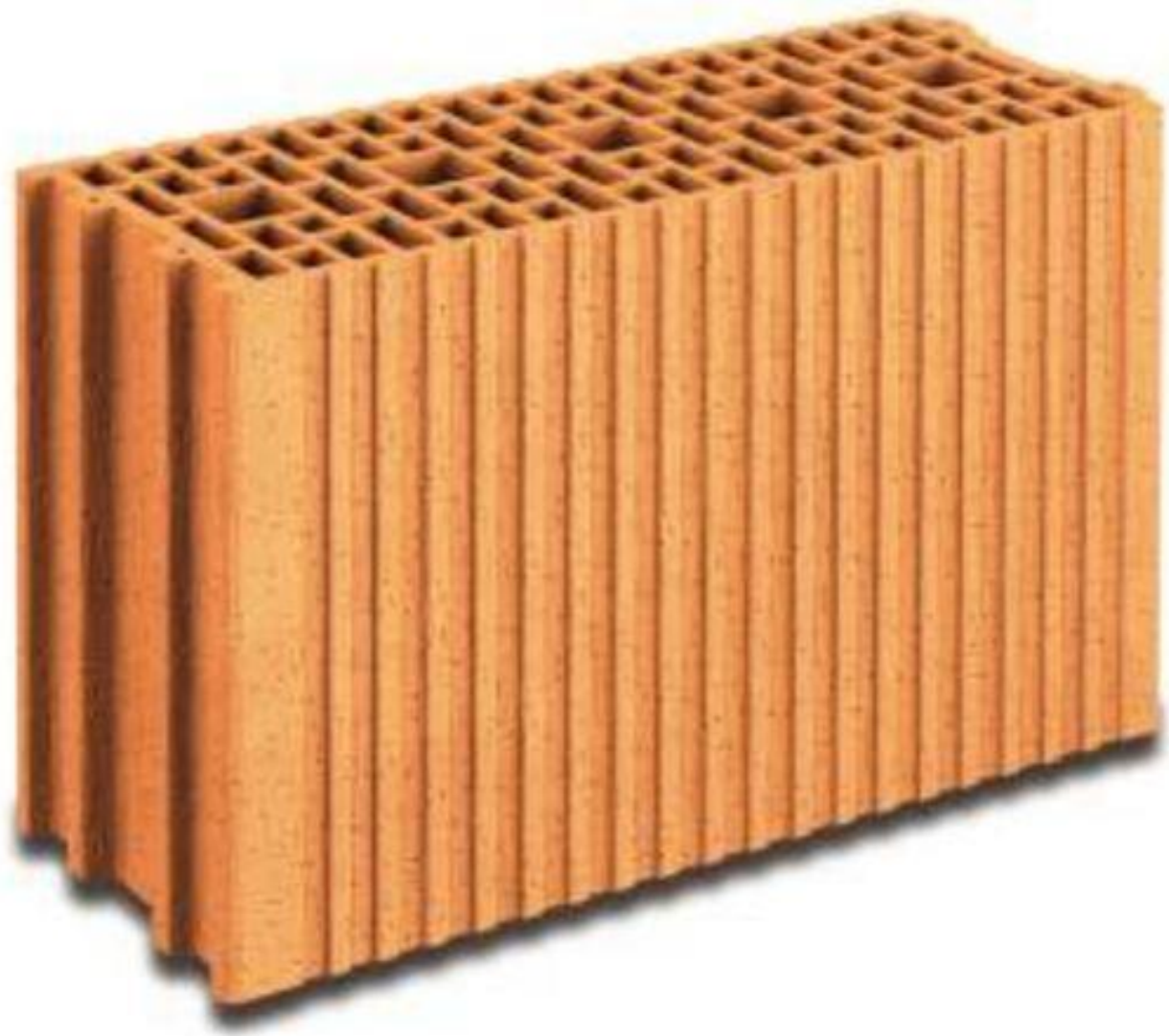
90%

2 mains conditions for memorizing

A : To give meaning to the « stimulation »

B : To know what to do with this information

B > A



Stimulus



Situation



Change

- Behaviour
- Representation



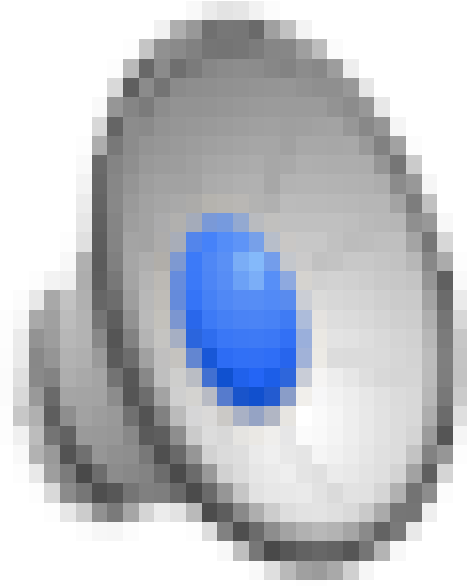
Behaviourist

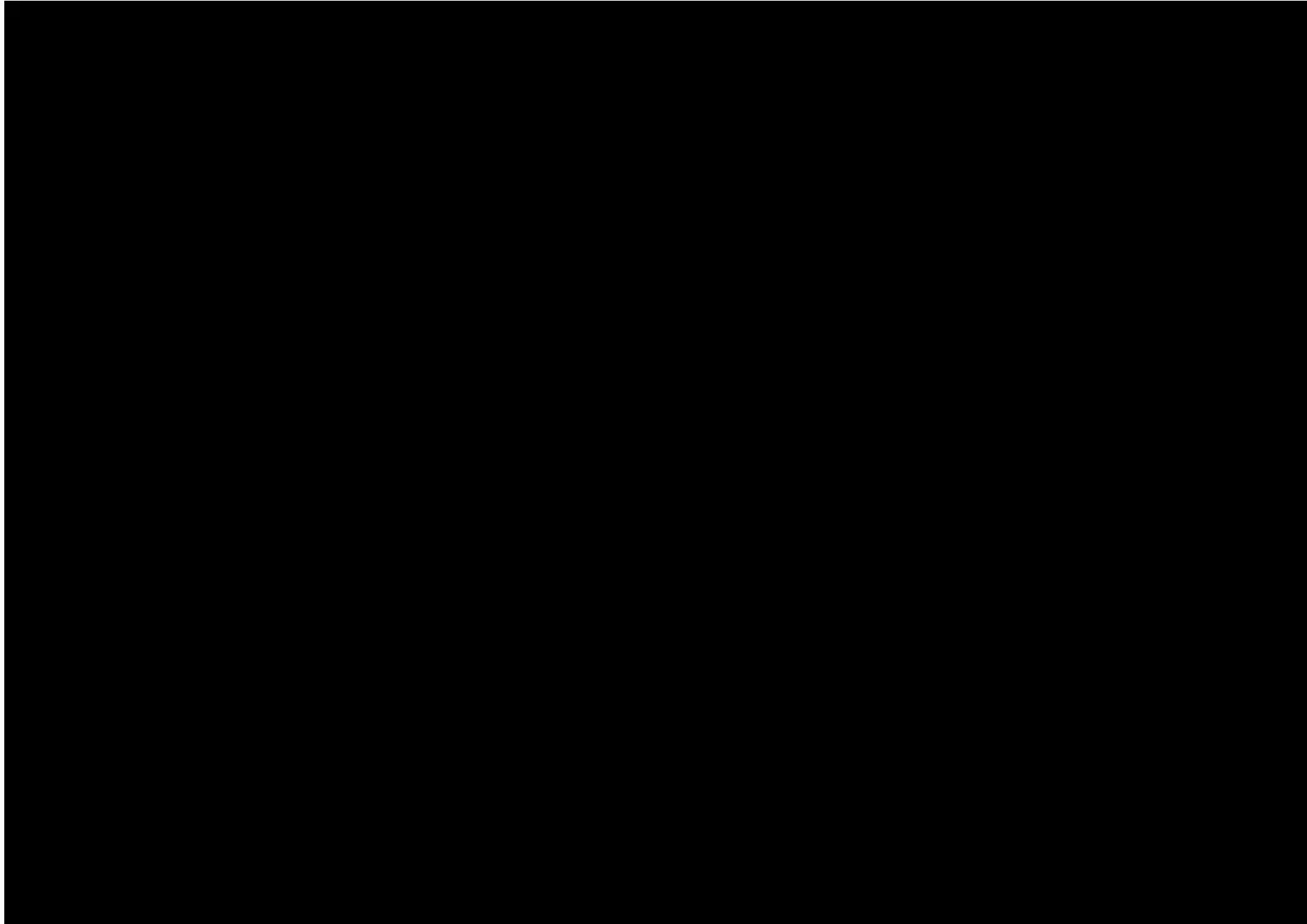


Cognitivist



Constructivist







J. Piaget

Everything you teach
them, You prevent
them from learning it



Stimulus



Situation



Change

- Behaviour
- Representation

Behaviourist



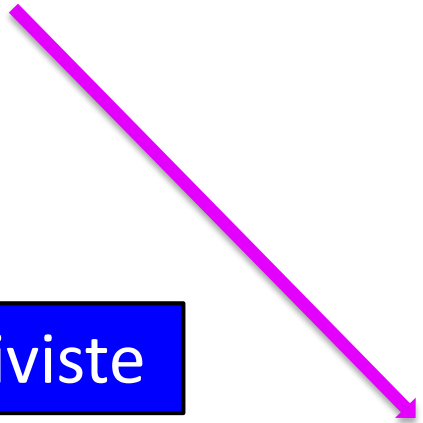
Cognitivist



Constructivist

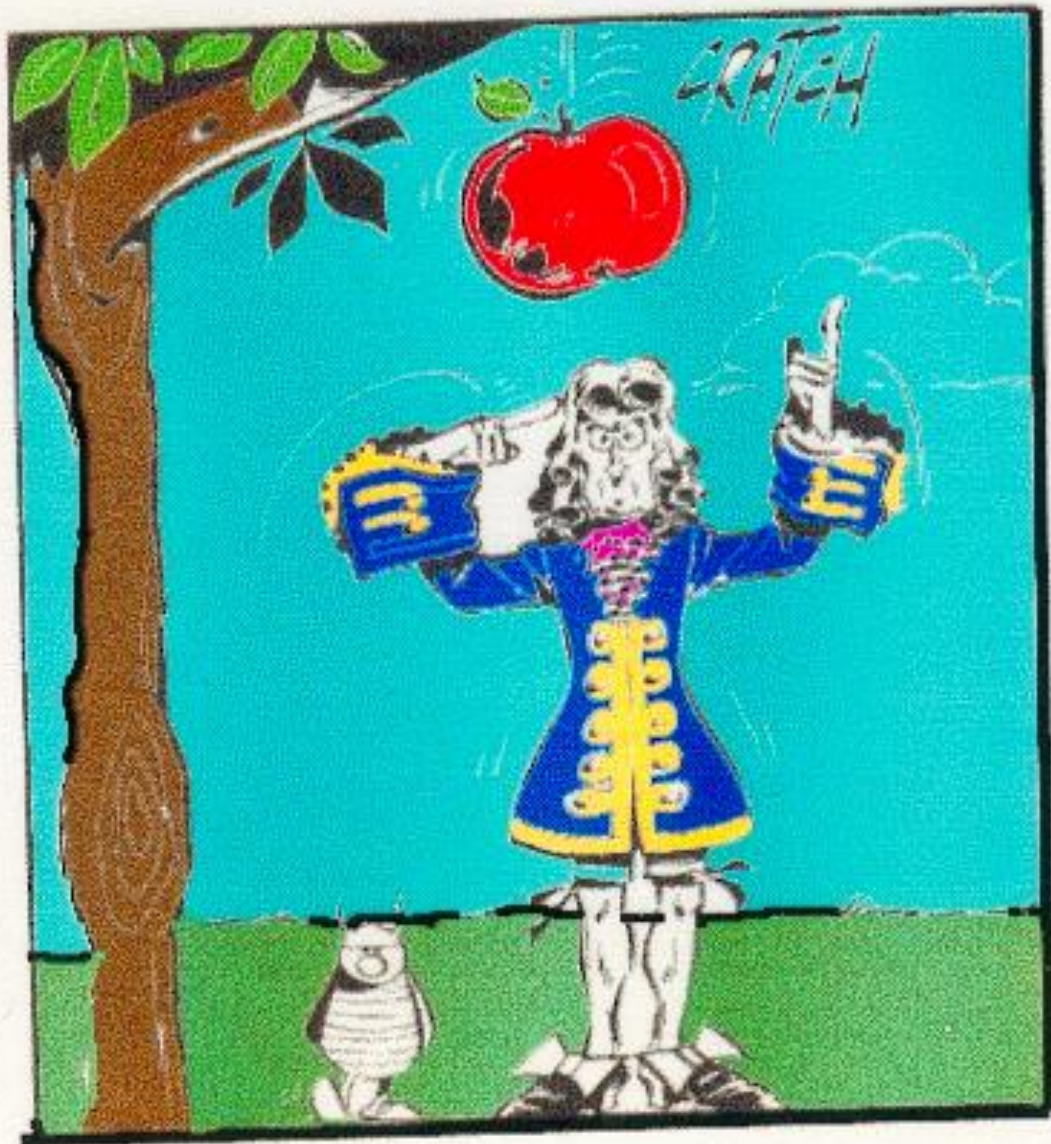


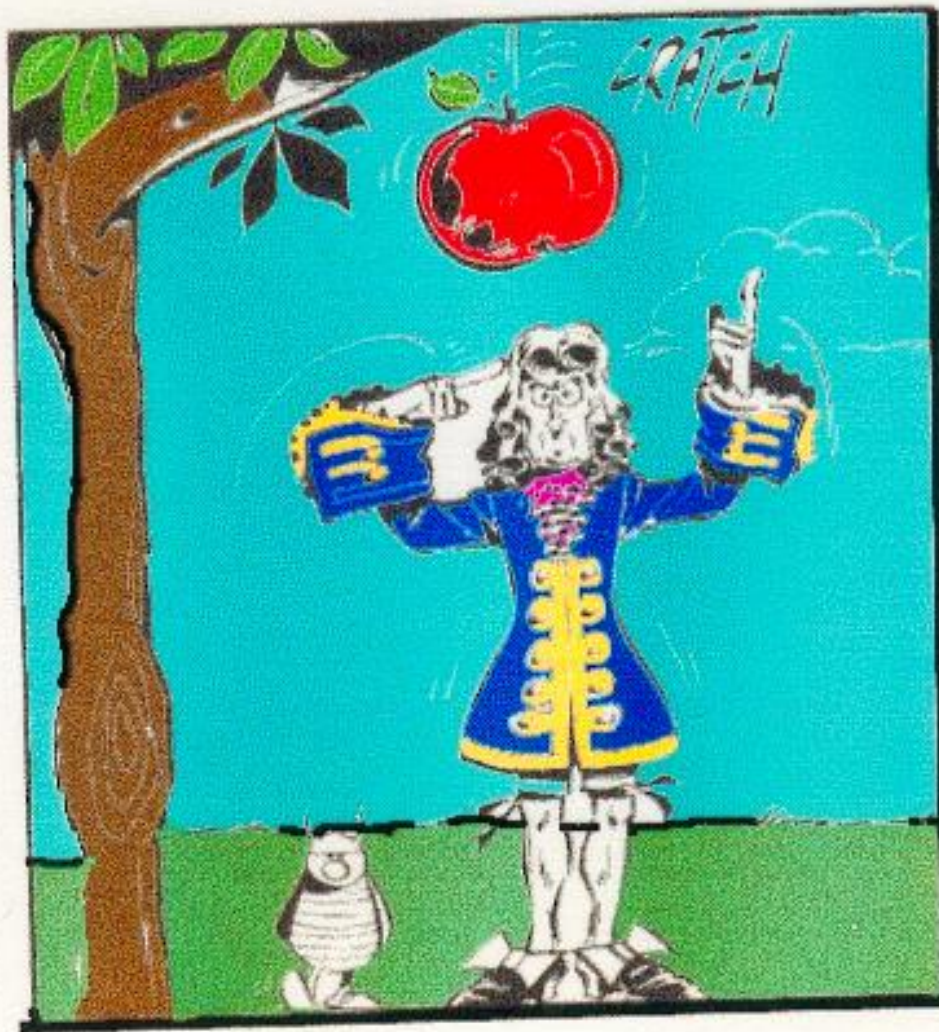
Socio-constructivist



Learning a co-construction

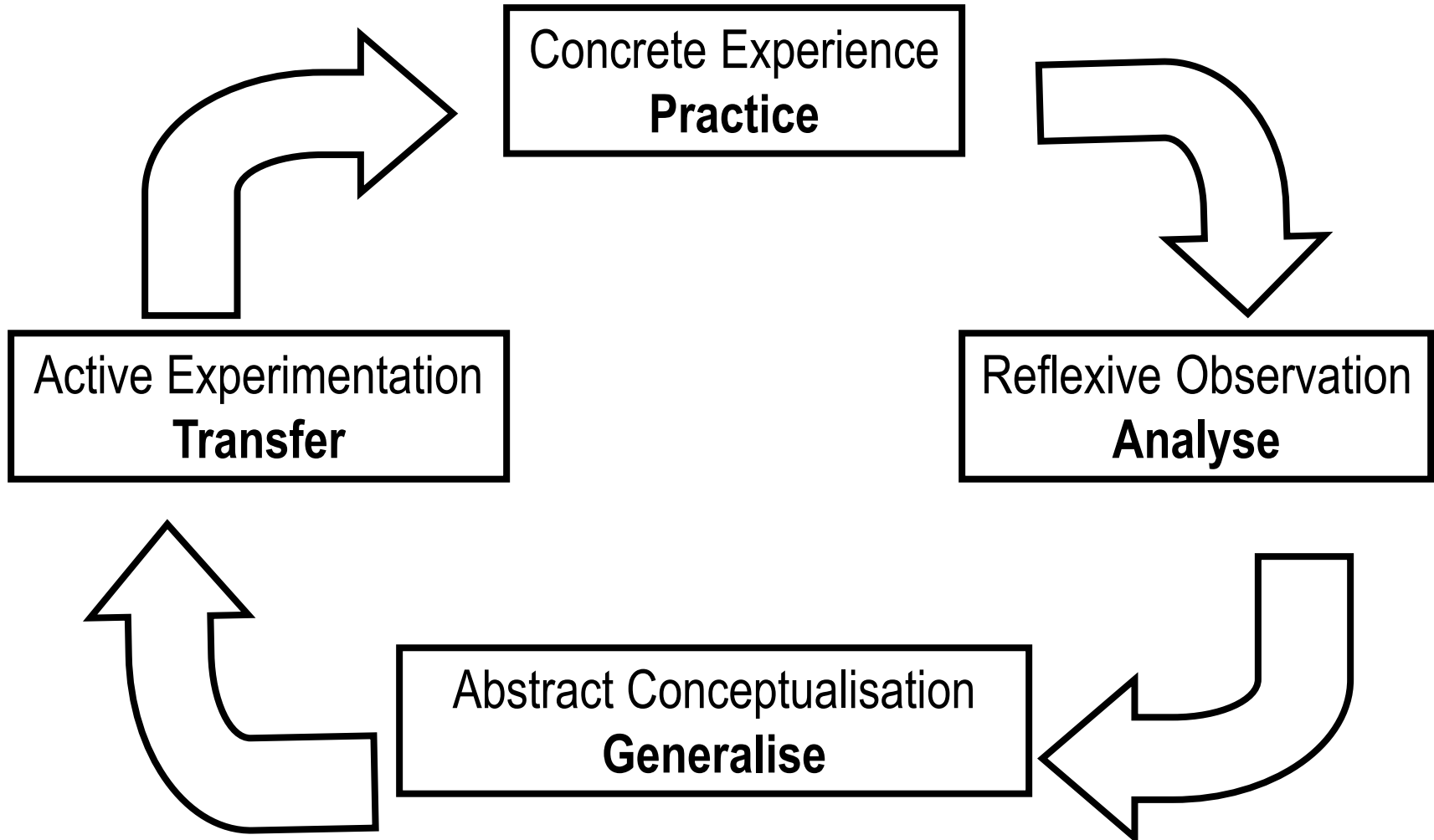




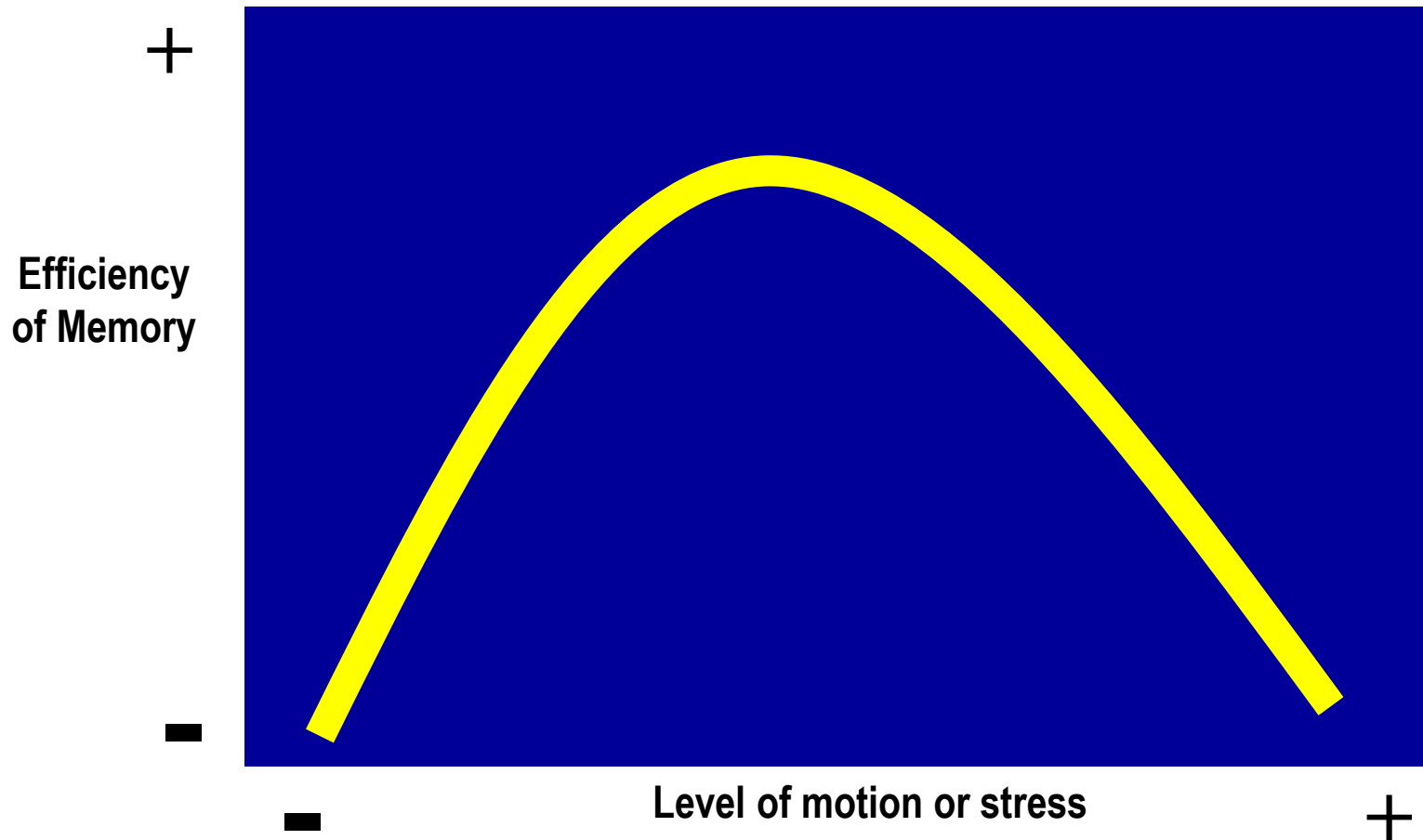


Learning does not come from what you experience but from what you do when you experience it

Reflexive Practice



Relation between emotion & Learning



How to develop motivation to learn XY ?



It is not like pushing a flush...

Motivation

$$\mathbf{M} = \mathbf{C} \times \mathbf{V}$$

Motivation

$$M = C \times V$$



Value attributed
to the result / obj.

Motivation

$$M = C \times V$$



Competence perceived
to reach the objective

Value attributed
to the result / obj.

How to increase the probability of perceived value ?

e.g

✓ “Contextualisation”

problems, quizz, news, personal experiences, etc.

✓ Euritistic questions

✓ Links with more global goals of the T.

✓ Links with professional situations

How to increase the probability of feeling competent ?

e.g

- ✓ Links with what is already known
content already addressed, metaphors, experiences, etc.
- ✓ Make student summarize (including visually)
- ✓ Give opportunities to apply
- ✓ Increase student's awareness of their strategies

✓ Teaching & Learning

✓ Learning approaches

✓ Practical application

Stimulus

Situation



Change

- Behaviour
- Representation

Behaviourist

Cognitivist

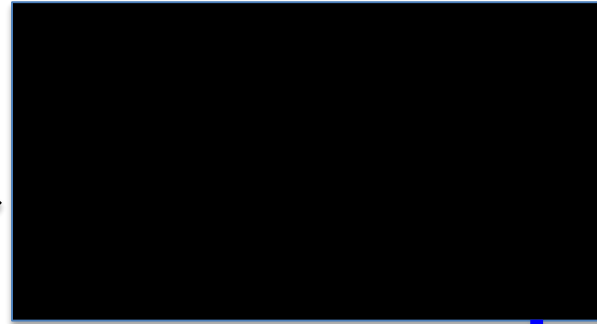
Constructivist

Socio-constructivist

Feedback

Stimulus

Situation



Change

- Behaviour
- Representation

Behaviourist

Cognitivist

Constructivist

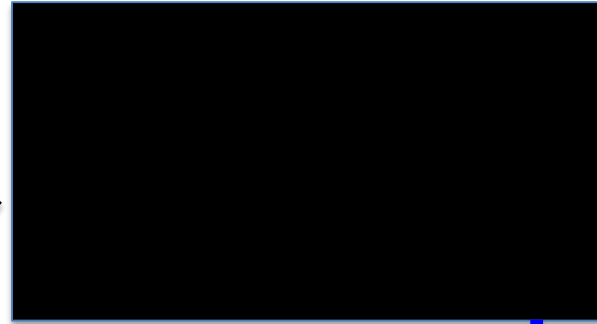
Socio-constructivist

Feedback

Application

Stimulus

Situation



Change

- Behaviour
- Representation

Behavioriste

Cognitiviste

Constructiviste

Socio-constructiviste

Feedback

Application

Reflexivity

Stimulus

Situation



Change

- Behaviour
- Representation

Behavioriste

Cognitiviste

Constructiviste

Socio-constructiviste

Feedback

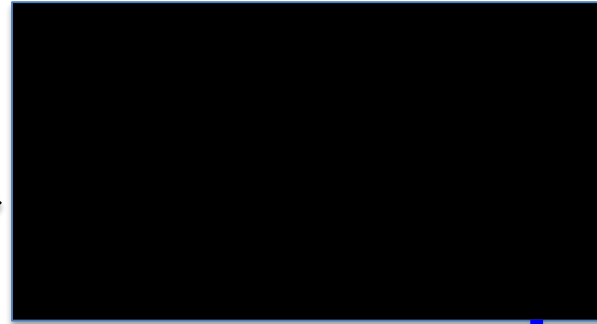
Application

Reflexivity

Interactions

Stimulus

Situation



Change

- Behaviour
- Representation

Behavioriste

Cognitiviste

Constructiviste

Socio-constructiviste

Feedback

Application

Réflexivité

Interactions

What promotes Deep Learning

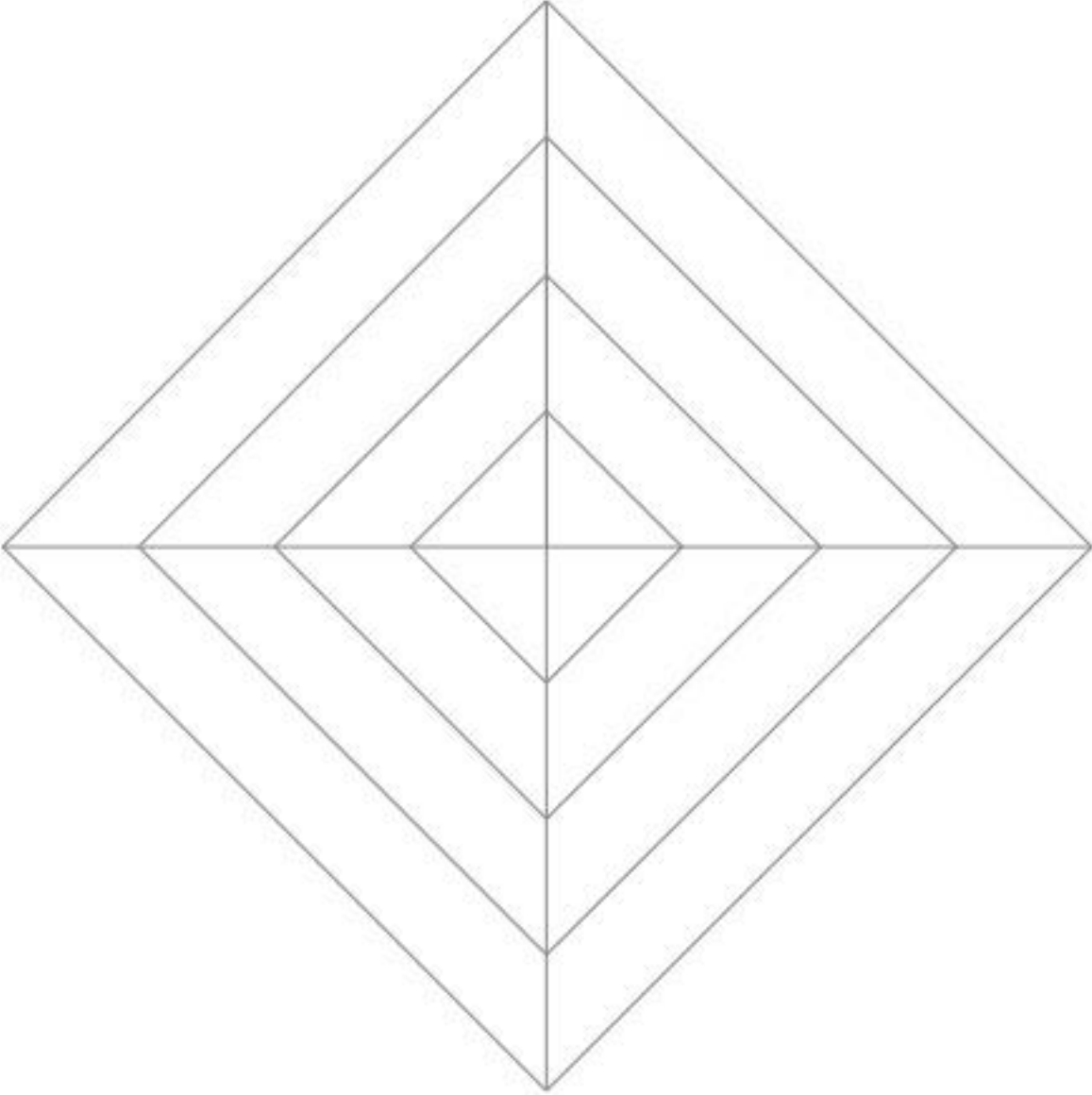
- Teaching by questions or problems **A**
- Feedback on progression **FB**
- Opportunities to make links **R**
- Use knowledge in different contexts **A**
- Put in doubt representations **R**
- High involvement of students, interactions **I**

Application

Reflexivity

Feedback

Interactions



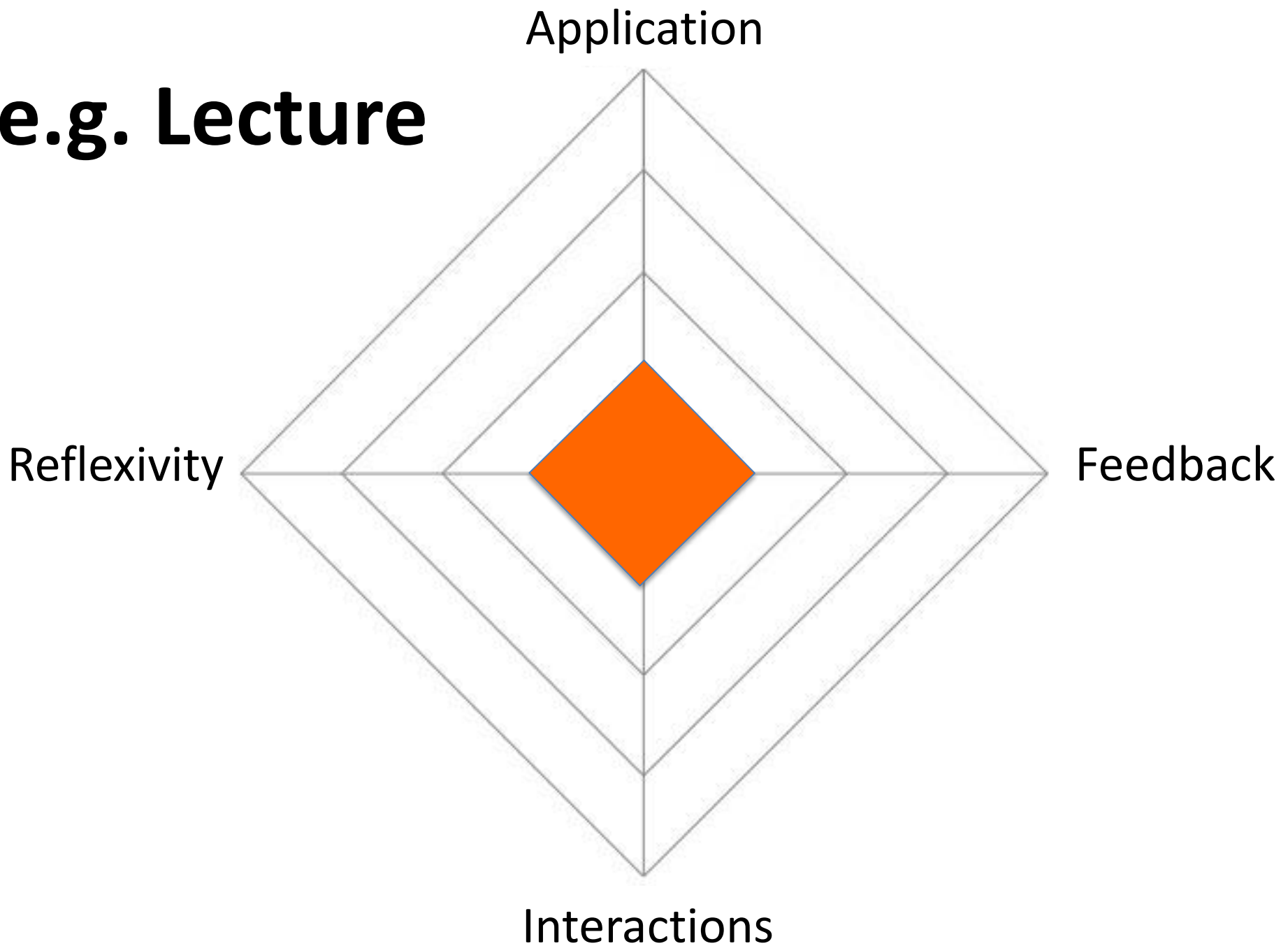
	1	2	3
Application	Very few notions used	some notions are used in one context	some notions are used in different contexts
Interactivity	Very few interactions	Interactions students / students OR students / teacher	Interactions students / students AND students / teacher
Feedback	Almost no feedback	Feedback mono source (either peers, prof. Or results)	Multiple Feedback (peers + + prof + results)
Reflexivity	Few activities stimulate reflexivity	Some activities stimulate reflexivity (synthesis, comparisons, linking notions, formalization)	Many activities stimulate reflexivity (synthesis, comparisons, linking notions, formalization)

Can you tell me what happened last week ?

Nothing happened the Prof spoke all the time



e.g. Lecture



e.g. Lecture +

Application

Case study in class

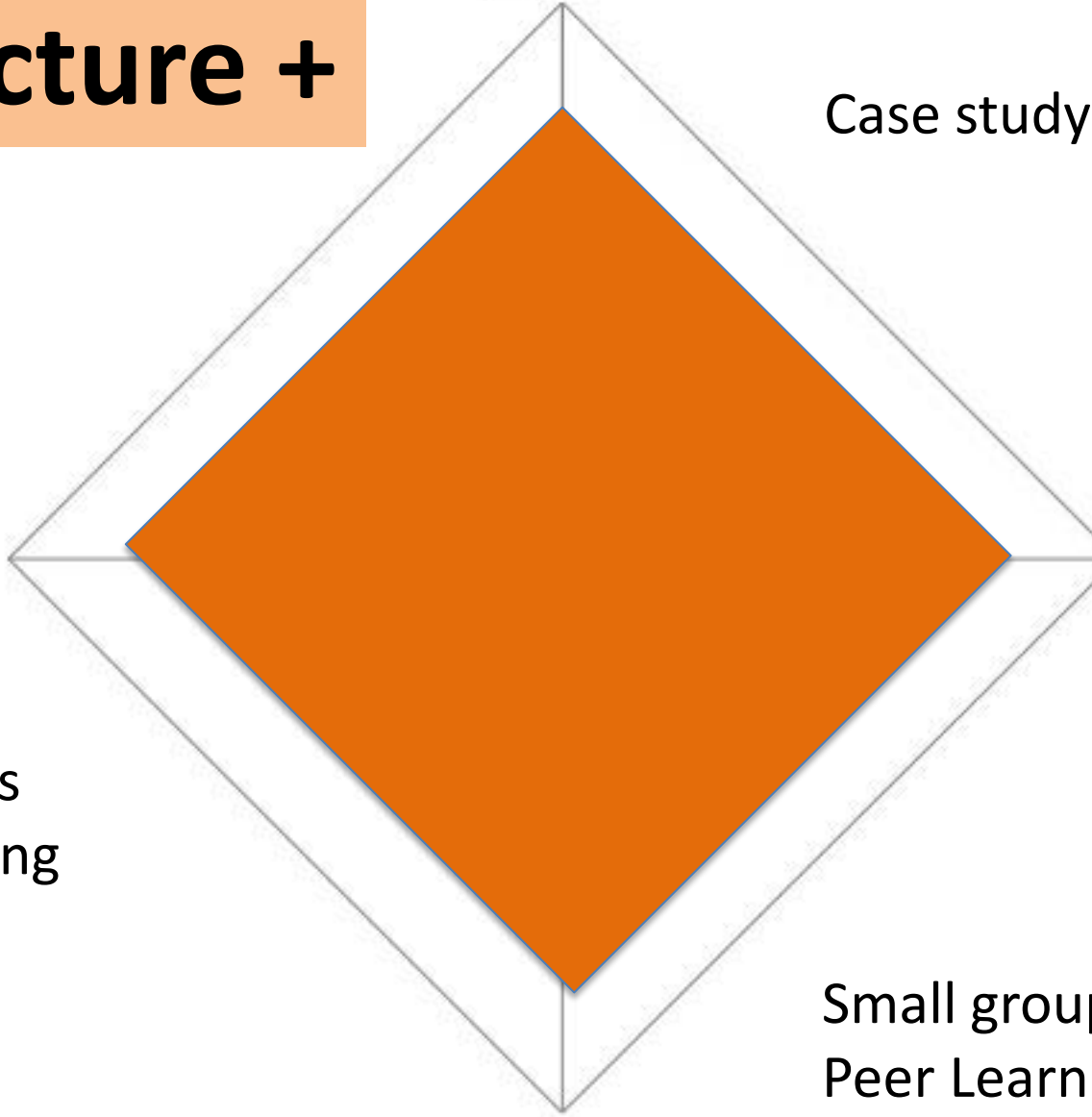
Reflexivity

Synthesis
Comparisons
Mind mapping

Feedback

Small group discussions
Peer Learning

Interactions

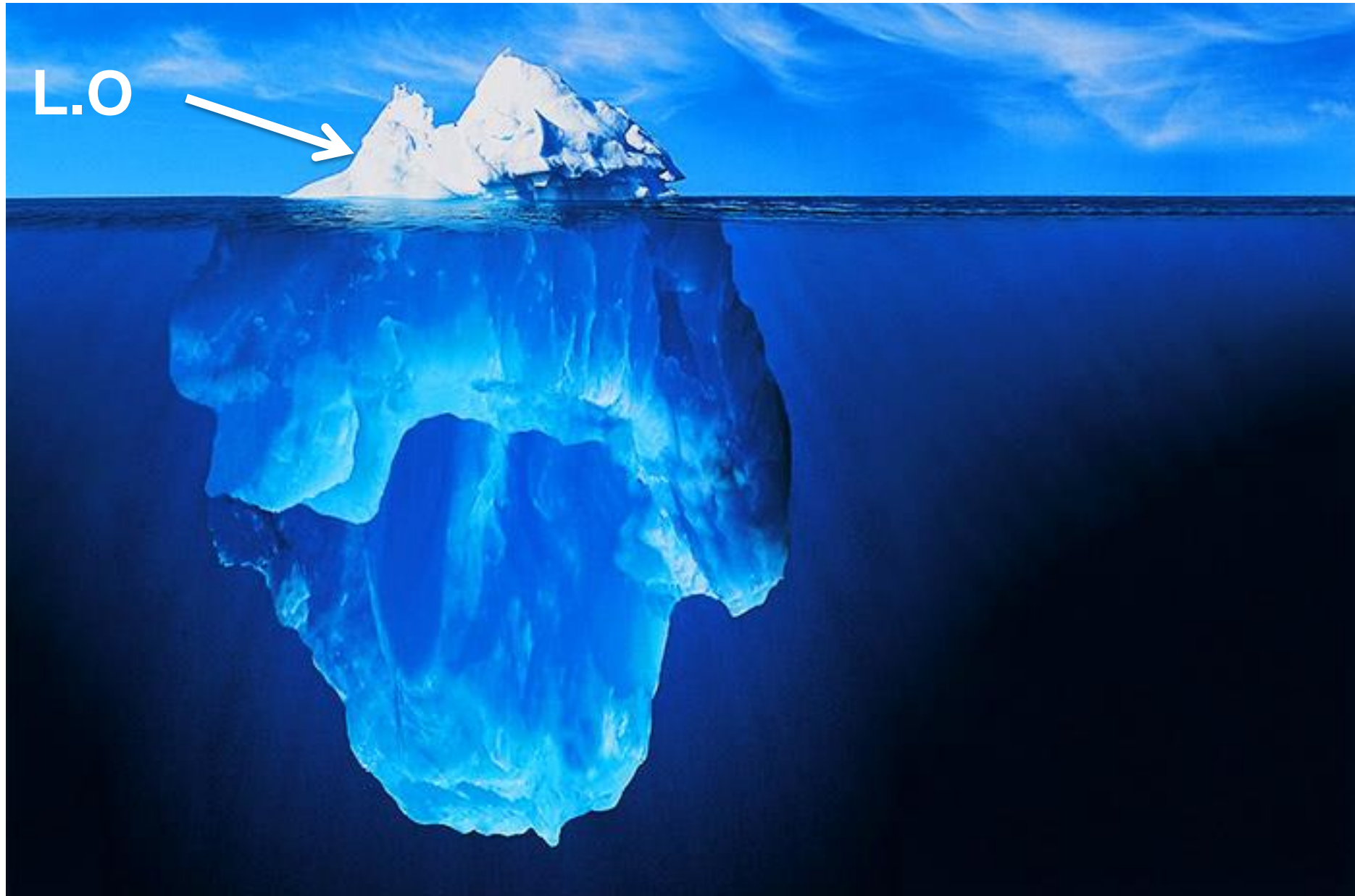


To sum up...

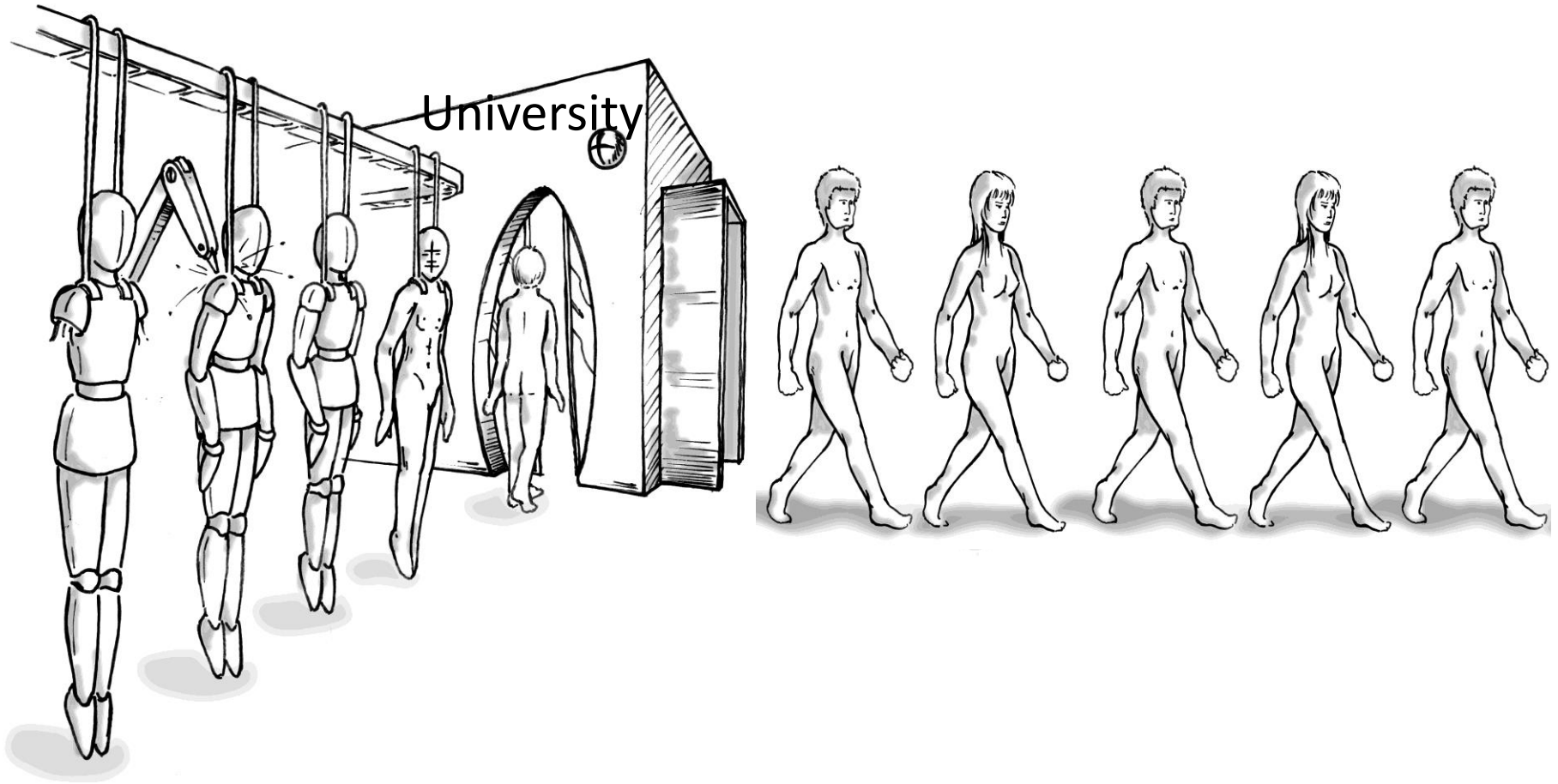
- Learning is a change in actions and representations
- Different complementary approaches explain these changes
- 4 Main conditions:
Reflexivity. Interactions. Application. FB
- Learning an individual and mostly invisible process.



Learning mainly an invisible process

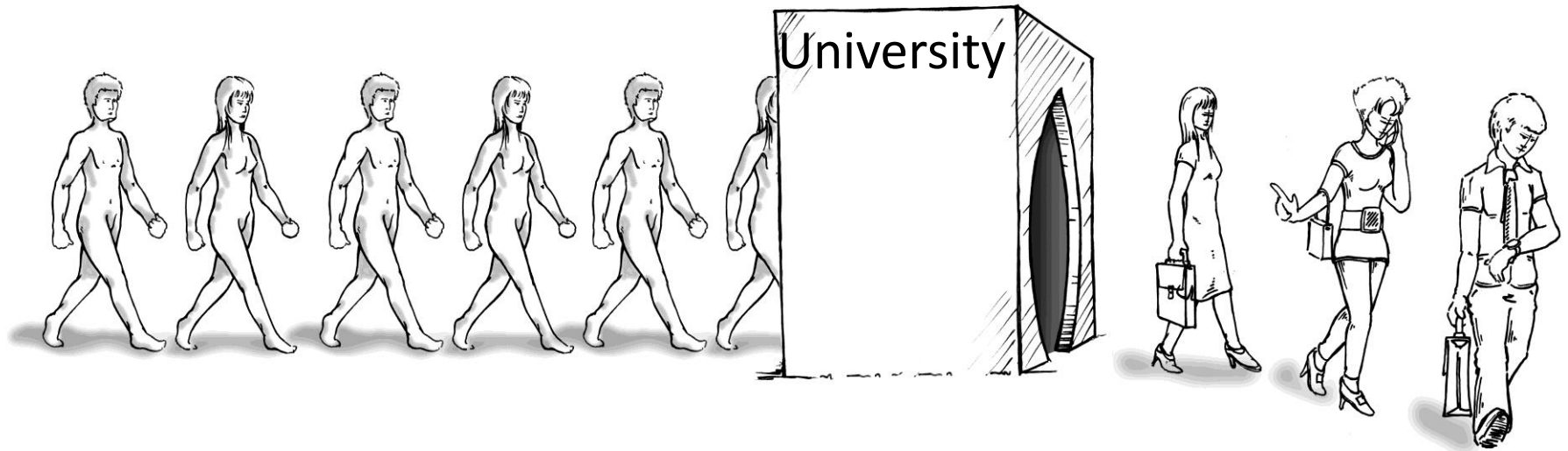


Learning, not an industrial process, but rather...



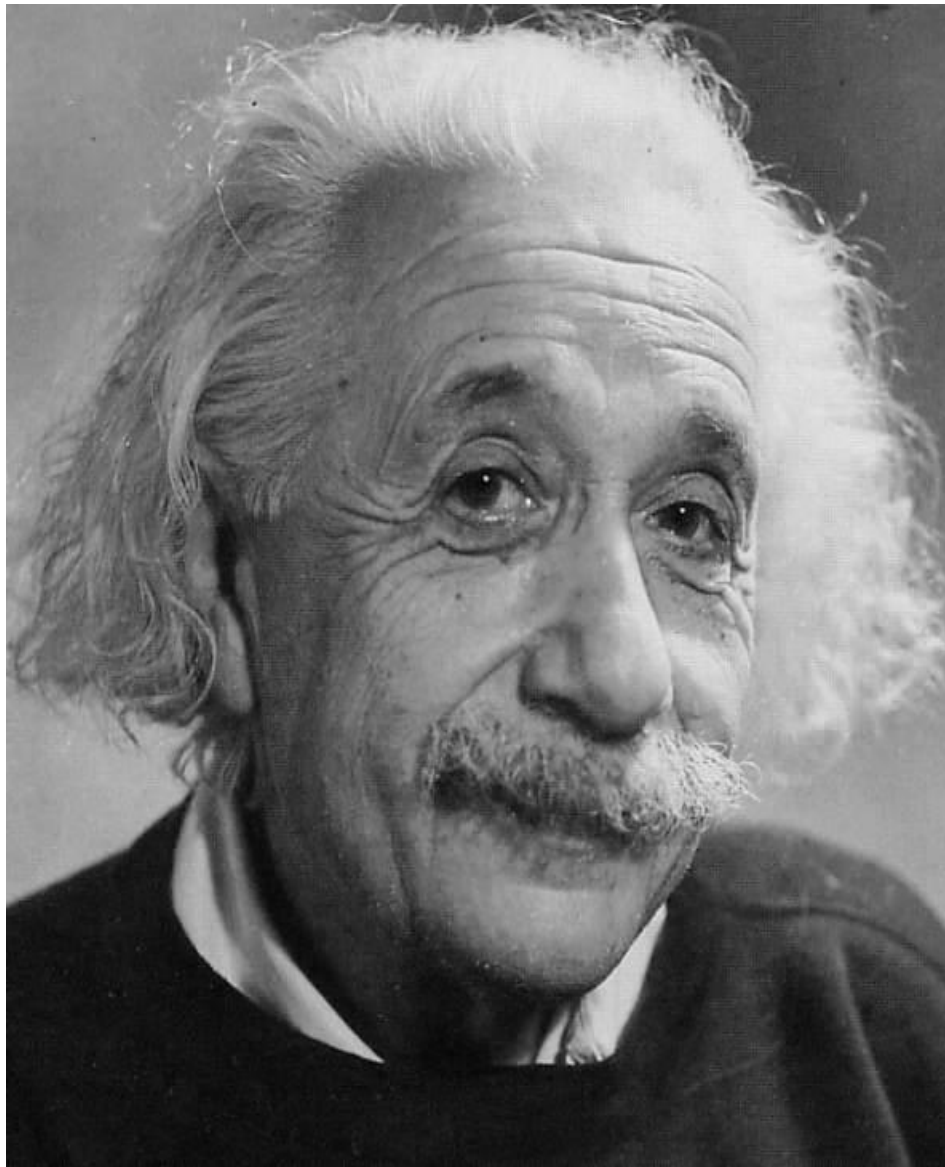
*Inspired by I.
Gardner*

Learning, an individual process



Inspired by I.

Carroll



« It is the supreme
art of the teacher to
awaken joy in
creative expression
and knowledge»

Einstein

A scenic view of a university campus framed by a large tree. The tree's thick trunk is on the left, and its branches arch over the scene. In the background, a paved path winds through a green field towards a line of trees and distant hills. A few people are visible on the path. The sky is bright and clear.

Thanks for your attention

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