

A try to align learning theories and teaching.

Believing and knowing: how learners learn and teachers teach



Gerhard Geissler
Vienna, May 17th



Structure of the presentation

- 1. What do you believe about learning?**
- 2. What do we know about learning?**
- 3. What should teachers consider to enabling effective teaching?**

What do you believe about learning?



Subjective theories

Which statement most closely reflects your attitude towards learning?

A

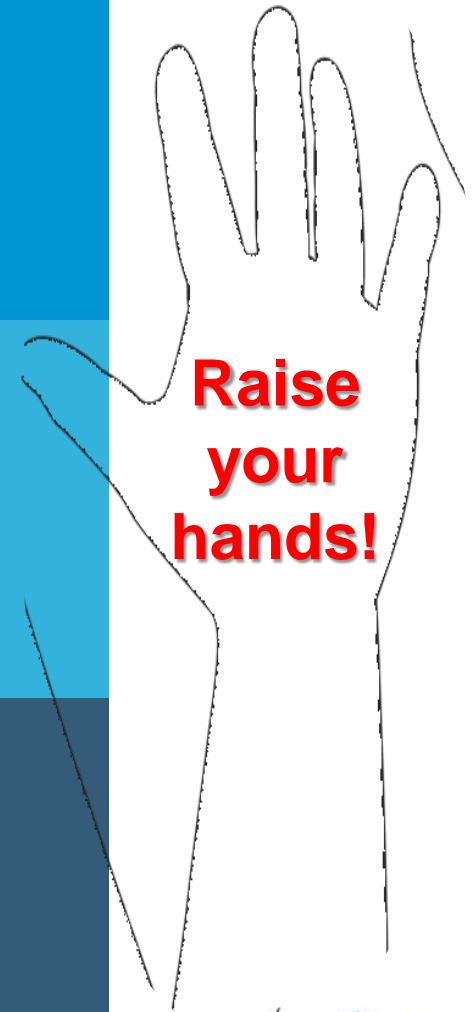
The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.

B

A failure is not always a mistake, it may simply be the best one can do under the circumstances. The real mistake is to stop trying.

C

Learning is the most personal thing in the world. It is as peculiar as a face or like a fingerprint. Even more individual than love life.



What do we know about learning?



3 learning theories

4 perspectives on learning

Learning theories: Overview

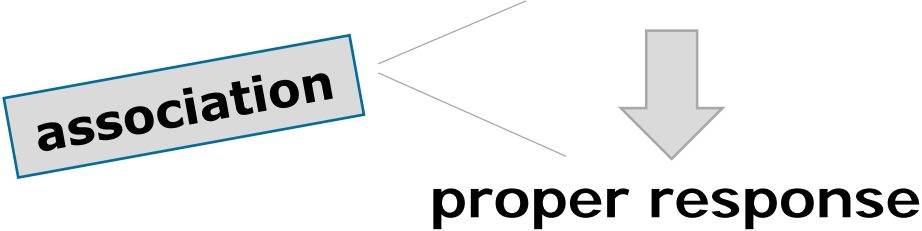
		Behaviorism	Cognitivism	Constructivism
1	Learning is a process of			
2	Factors influencing learning most			
3	Transfer is			
4	Types of learning explained			

**Which learning theory will you expect
if I show you a picture like this**



**Correct response:
Behaviorism**

Learning in behaviorism

1	<p>Learning is a process of</p> <p>Specific environmental stimulus</p>  <p>proper response</p>
2	<p>Factors influencing learning most</p> <ul style="list-style-type: none">• environmental conditions• arrangement of stimuli and consequences
3	<p>Transfer is</p> <p>a result of generalization</p>
4	<p>Types of learning</p> <p>strategies for stimulus-response associations, recalling facts, defining/illustrating concepts, automatically performing procedures</p>

Animation A - F

1

2

3

4

A

5

B

6

7

8

9

C

1 8 7 5 2 4

D

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E

1	2	3
4	5	6
7	8	9

F



Learning is a process of

Mental activity / processing of information



1

how information is received, organized, stored and retrieved

**making knowledge meaningful
by connecting to prior experience**

Factors influencing learning most

2

- Instructional explanations, demonstrations, illustrative examples,
- practice with corrective feedback

Transfer is

3

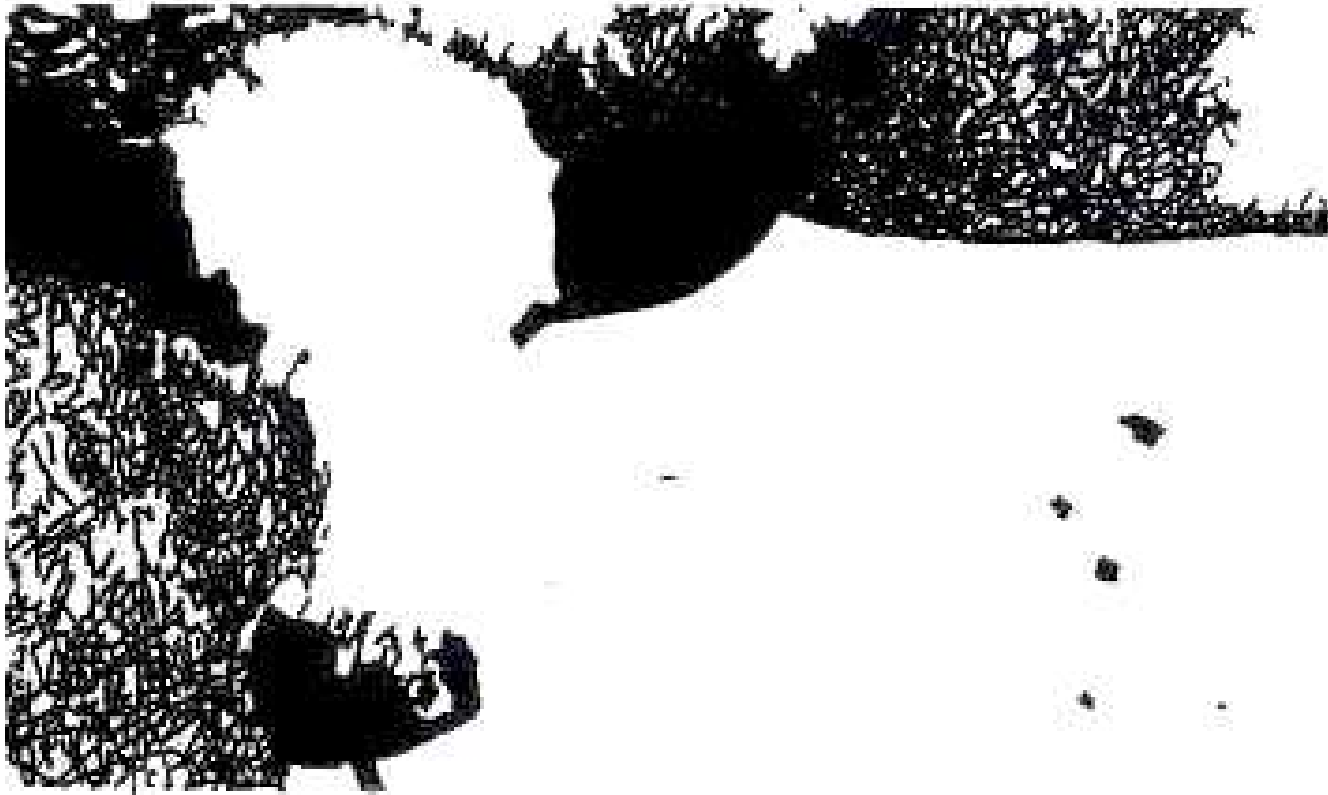
applying knowledge in a new context

Types of learning

4

complex types of learning

What do you see on this image? Decide alone, afterwards talk with your neighbor



Learning in constructivism

1

Learning is a process of

Learners build personal interpretations of the world based on individual experiences and interactions



Internal representation of knowledge is constantly open to change

2

Factors influencing learning most

- Learning has to occur in realistic settings
- Learning tasks have to be relevant to the students' lived experience

3

Transfer is

avored through retrospective abstraction of authentic experiences

4

Types of learning

deal with ill-structured problems

What should teachers consider to enabling effective teaching?



**Reflecting lesson planning
with 3 learning theories**

Teaching is more ...

**WHAT
IF I
TOLD
YOU**

**THAT
READING A
POWERPOINT
ALoud IS
NOT THE
SAME AS
TEACHING**

Learning theories for teaching

		Behaviorism	Cognitivism	Constructivism
5	Relevant principles for instructional design			
6	Structure of instruction			

Relevant principles for instructional design

- Goal: Elicit desired response to a stimulus.
- Defining observable and measureable outcomes
- Pre-assessment of students to determine where instruction should begin
- Sequencing of instructional presentation, mastery learning
- Use of reinforcement to impact performance: tangible rewards, informative feedback

Structure of instruction

Instruction often consists of cues and reinforcement

The teacher should

- find cues which can elicit to the desired responses
- arrange practice situations
- arrange environmental conditions

Relevant principles for instructional design

- Goal: „Learning by constructing“ new knowledge
- Involve learner actively
- Make connections with previously learned material
- Structuring, organizing and sequencing information
- Practicing
- Use of feedback to guide and support accurate mental connections

Structure of instruction

Making knowledge meaningful and helping learners to organize and relate new information to existing knowledge in memory

Main tasks of teachers

- Use learning experiences of students
- Find most effective manner to work with new information
- Arrange practice with feedback

Relevant principles for instructional design

- Goal: Learning through experience.
- Identification of the context in which certain skills will be learned
- Emphasis on learner control and the capability of the learner to manipulate information
- Information should be presented in different ways
- Supporting problem solving skills
- Assessment focused on transfer of knowledge and skills

Structure of instruction

The learner elaborates upon and interprets the given information
Meaning is created by the learner

Teachers should

- instruct the students how to construct knowledge / meaning
- design experiences in authentic contexts
- promote collaboration with others

Typical teaching methods

Behaviorism

- Lecture
- Practice
- Rote learning
- Multiple choice tests

Cognitivism

- Outlining
- Mnemonics
- Concept mapping
- Advance organizers
- Problem solving
- Essay writing

Constructivism

- Discovery
- Collaborative group work
- Self guided learning
- Projects
- Peer grading review

Statements

A

The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.

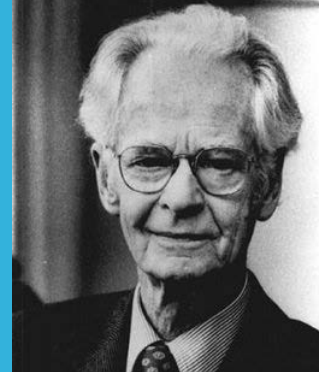
David Ausubel



B

A failure is not always a mistake, it may simply be the best one can do under the circumstances. The real mistake is to stop trying.

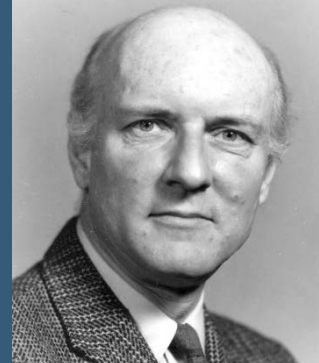
Burrhus F. Skinner



C

Learning is the most personal thing in the world. It is as peculiar as a face or like a fingerprint. Even more individual than love life.

Heinz v. Foerster





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**Thank you for
your attention!**

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