

**A try to align learning theories and teaching.**

# **Believing and knowing: how learners learn and teachers teach**



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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**

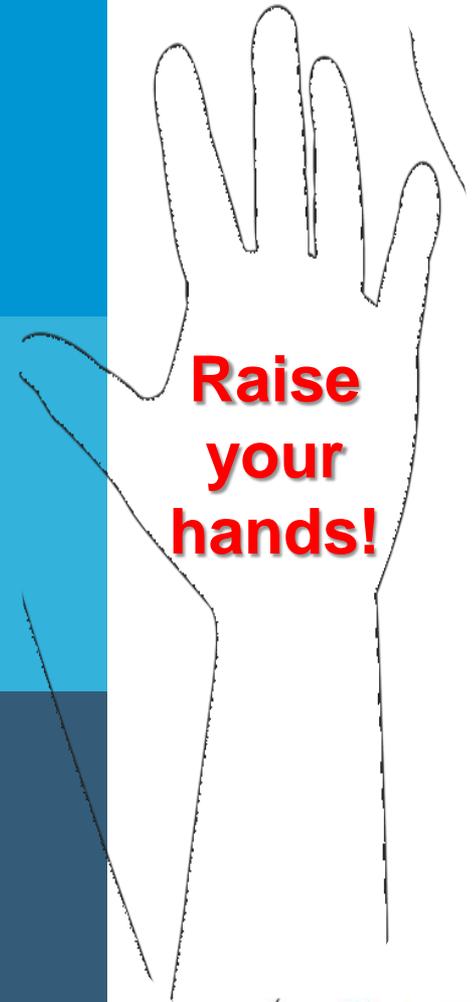
The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.

**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

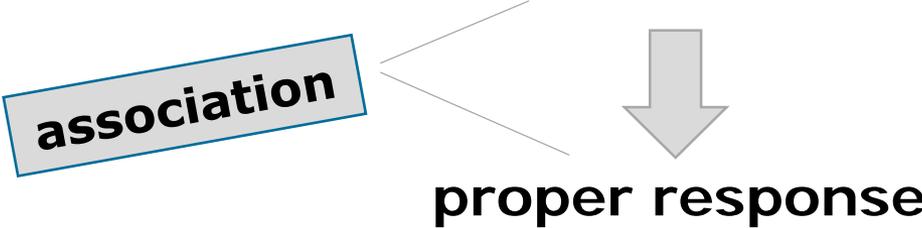
		<b>Behaviorism</b>	<b>Cognitivism</b>	<b>Constructivism</b>
<b>1</b>	<b>Learning is a process of</b>			
<b>2</b>	<b>Factors influencing learning most</b>			
<b>3</b>	<b>Transfer is</b>			
<b>4</b>	<b>Types of learning explained</b>			

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



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

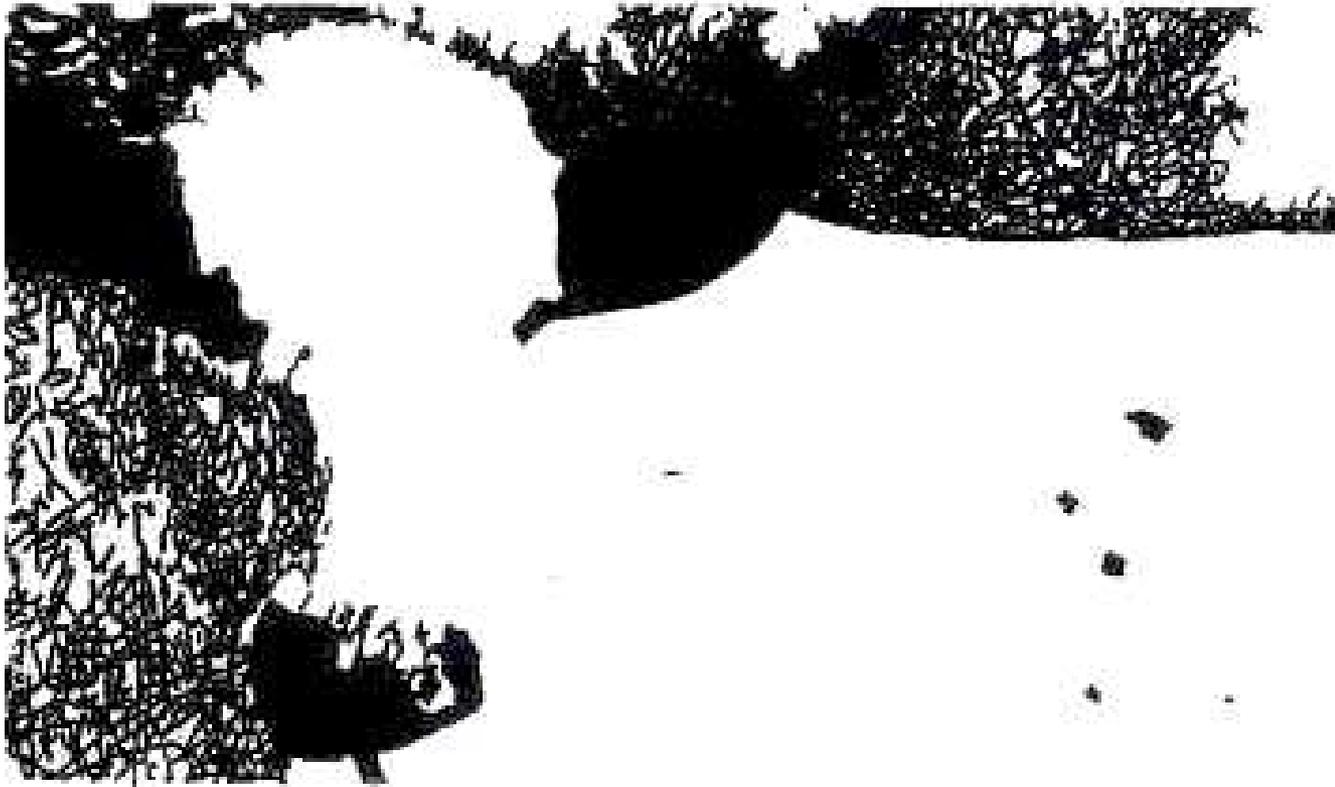
**Transfer is**

- 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

		<b>Behaviorism</b>	<b>Cognitivism</b>	<b>Constructivism</b>
<b>5</b>	<b>Relevant principles for instructional design</b>			
<b>6</b>	<b>Structure of instruction</b>			

## 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.

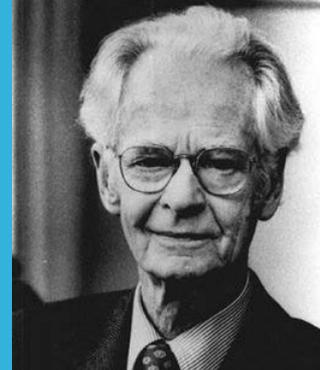
*David Ausubel*



**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.

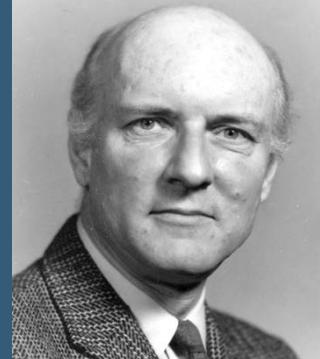
*Burrhus F. Skinner*



**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!**

# References

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