On Constructivism And Learning

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How does learning happen?

- How do human beings learn?
- To construct a theory of learning, we must look at examples of learning.
- This will also help us understand what is meant by learning.
- Once we form a theory we can test the theory by observations and experiments.

 Make a list of different examples of what one can call learning.

(Write down as many examples as you can think of, but the examples should be different in some way from each other.)

 Look at the list of examples that you have made and try to classify the examples into different kinds of learning.

(You may like to use different ways of classifying the examples.)

3. How do human beings, children and adults, learn? What are the ways in which learning takes place?

(Again try to list as many ways as you can think of.)

- 4. What do you understand by a 'theory of learning'? Can you briefly describe any such theory or theories that you know?
- 4a. Take an example where some learning has taken place. Discuss how different theories of learning would analyse it.

5. What are the differences between learning in school and learning outside school? List as many differences that you can think of.

Some theories of learning

- Naïve theory: we learn by listening and remembering.
- Learning by associating a reflex with a substituted stimulus. (Pavlov and Watson) e.g. baby refusing to drink cough syrup.
- Learning by conditioning through reinforcement and reward. (Thorndike and Skinner)

Skinner's Behaviourism

- Reinforcement need not be everytime.
 (Schedules of reinforcement).
- Behaviour of laboratory animals can be shaped: pigeons can learn to dance!
- Led to programmed learning with immediate feedback.

Insight and learning

- The gestalt psychologists criticized the behaviourist approach.
- What we perceive are meaningful wholes.
- Kohler's study of chimpanzees
- Sultan's double stick tool



Insight and learning

Wertheimer (1880-1943), a gestalt psychologist criticised Thorndike: Reducing mathematics to meaningless and disconnected bits

Piaget and the development of intelligence

- Human beings do not passively receive stimuli. Rather they always assimilate their experience.
- Complex and powerful cognitive structures develop without instruction!
- The child is not merely accumulating knowledge but organizing it.
- Cognitive dissonance is important for structures to develop.

Children's ideas about the shape of the earth

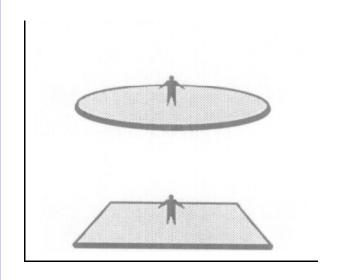
Children learn from experience that the earth is flat and gravity orients the vertical direction.

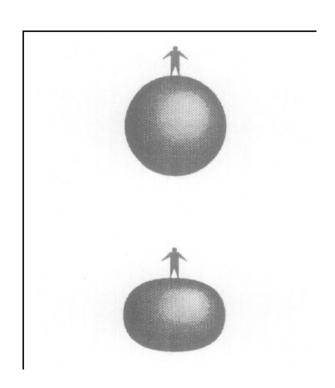
In school, or from elders they encounter the view that the earth is round.

So they attempt a reconciliation.

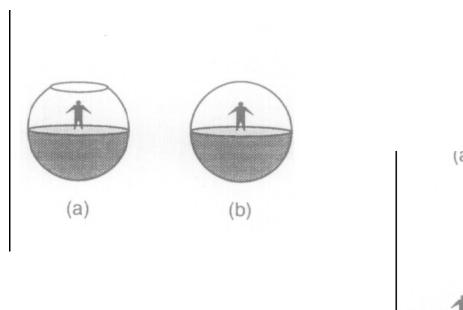
Alternative conceptions result, and they are very robust!

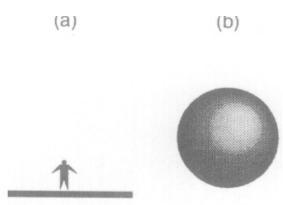
Children's ideas about the shape of the earth





Children's ideas about the shape of the earth





Constructivism as a theory of learning

- Children actively construct knowledge.
- Experiences are always assimilated to prior knowledge structures.
- Learning takes place through meaningmaking.
- Learning is intrinsically rewarding provided it is engaging and challenging.

Learning is social

- Knowledge is socially constructed.
- Natural learning occurs mostly in communities and in particular situations.
- How is informal learning different from formal learning?
 - Goals
 - Mechanisms of learning
 - Metacognitive awareness
 - Assessment of learning

Implications of constructivism for teaching

- engagement of the learner both emotionally and intellectually
- emphasis on autonomy of thinking; opposed to accepting on the basis of authority
- Build on what the learner already knows, especially knowledge gained from outside school

Implications of constructivism for teaching (contd.)

- Use the power of collective learning: encourage classroom discussion
- Let children solve genuine and non-routine problems