

Cognitivism Learning Theory

Infographic By: Leah Willis

Cognitivism is a learning theory that focuses on how the mind processes, stores, and retrieves information. Cognitivists believe that some learning processes are unique to human beings, such as language.

Key Theorists



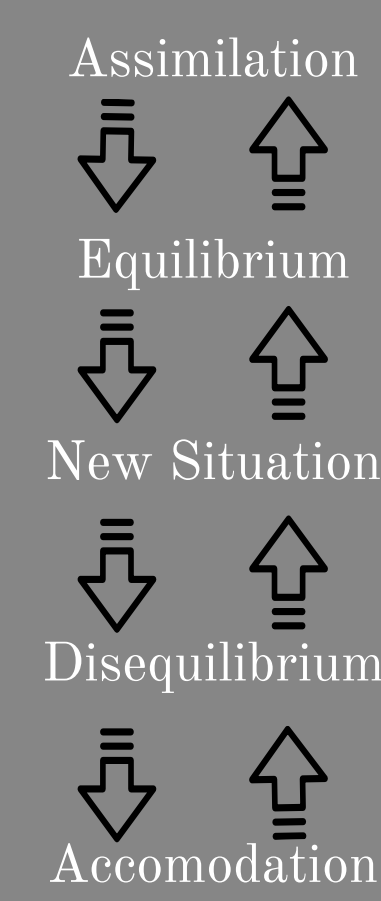
Jean Piaget

Schemes

Children are active and motivated learners. Children organize what they learn from their experiences.

4 Stages of Cognitive Development

- Sensorimotor stage: Birth to 2 years
- Preoperational stage: Ages 2 to 7
- Concrete operational stage: Ages 7 to 11
- Formal operational stage: Ages 12 and up

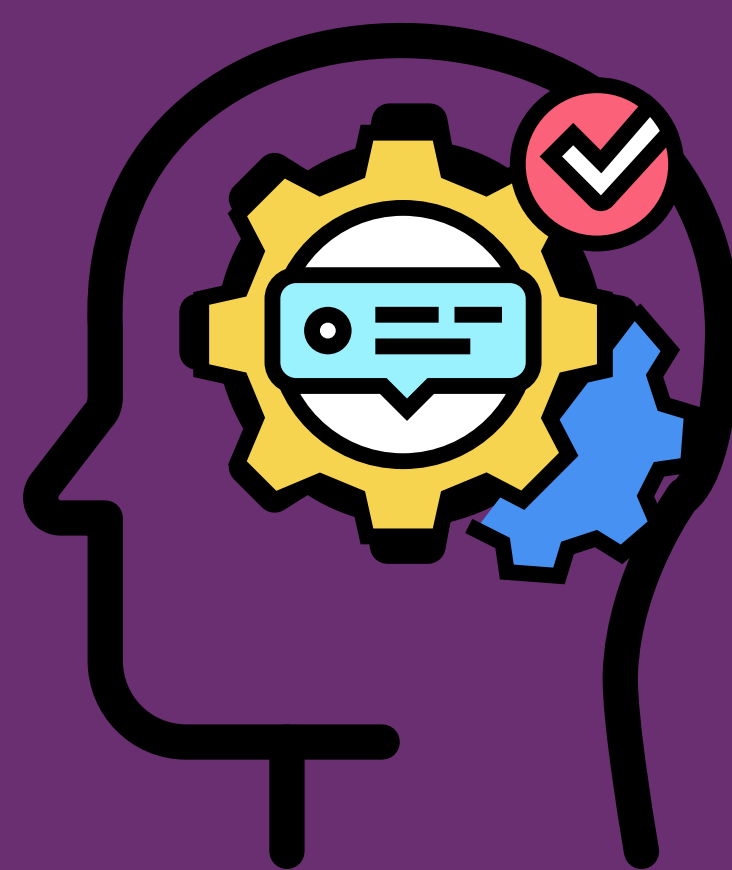


- Intrinsically motivated
- Active processors
- Prior Knowledge
- Maturation

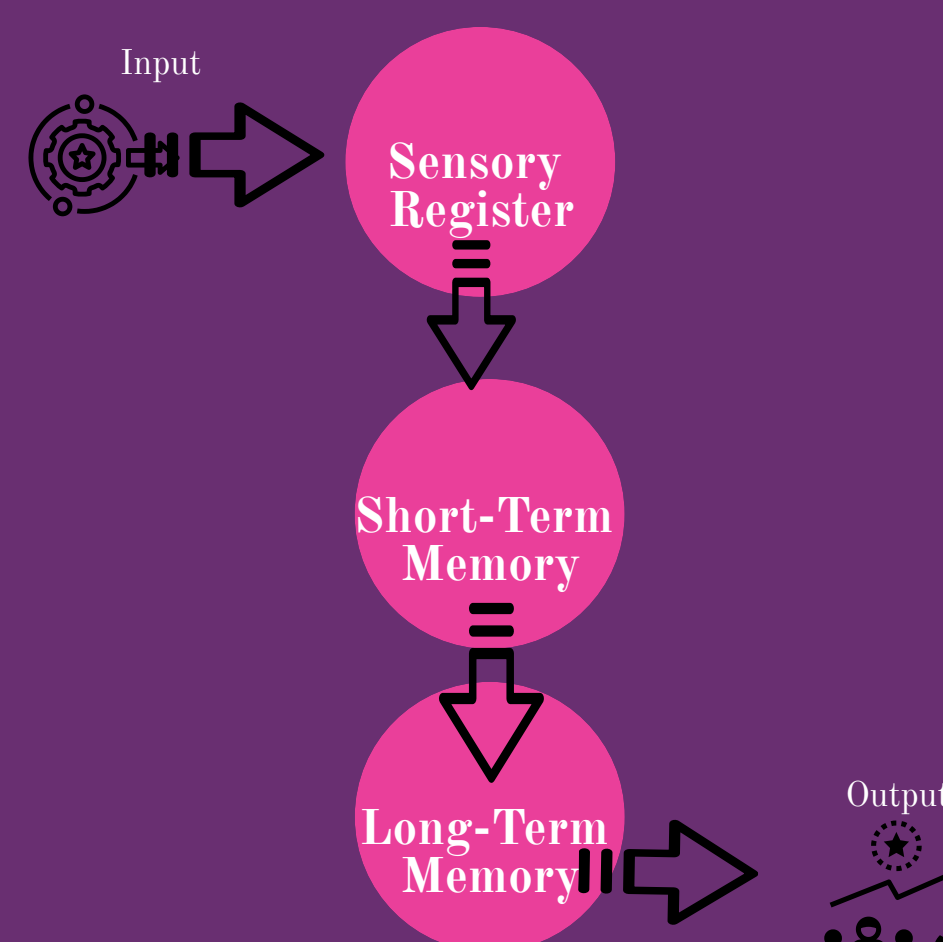
What is Learning?

Learning is a relatively permanent change in mental representations or associations due to experience. It involves the building of connections in schema through the processes of assimilation and accommodation.

Information Processing Theory



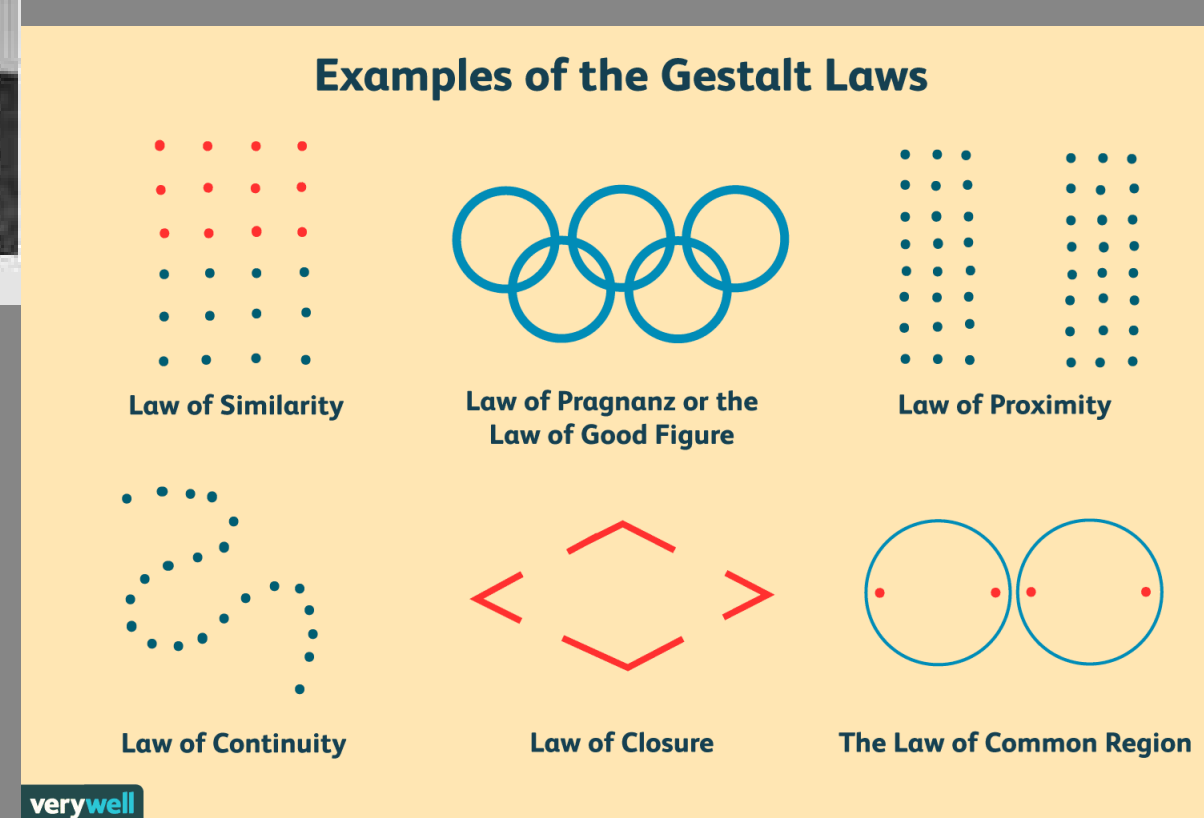
Dual Store Model





Gestalt Psychologists

The whole is more than sum of its parts





Law of Proximity

- Other things being equal, people perceive as a unit those things that are close together in space

Law of Similarity

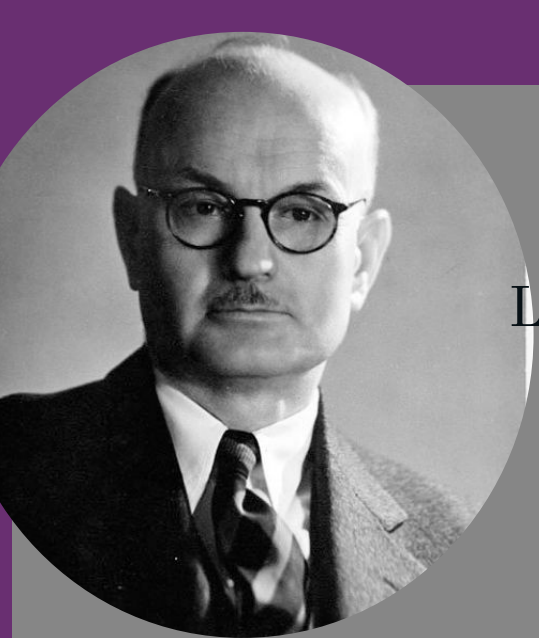
- People perceive those things that physically resemble one another

Law of Closure

- People fill in missing pieces mentally to form a complete picture

Law of Continuity

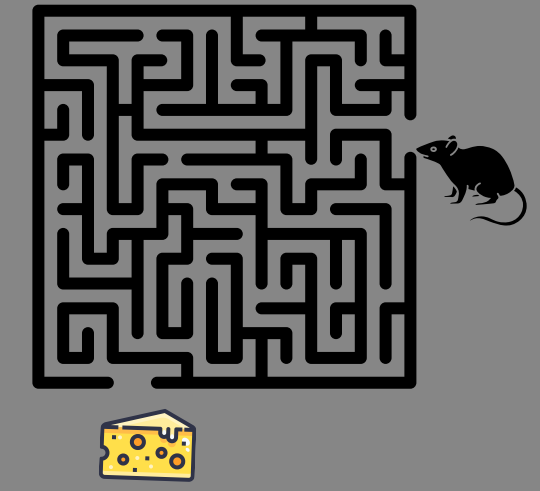
- The brain organizes visual elements into continuous lines or patterns



Edward Tolman

Cognitive Maps

Language is critical for learning and cognitive development. Learning could occur without reinforcement.



Latent Learning

- Other things being equal, people perceive as a unit those things that are close together in space

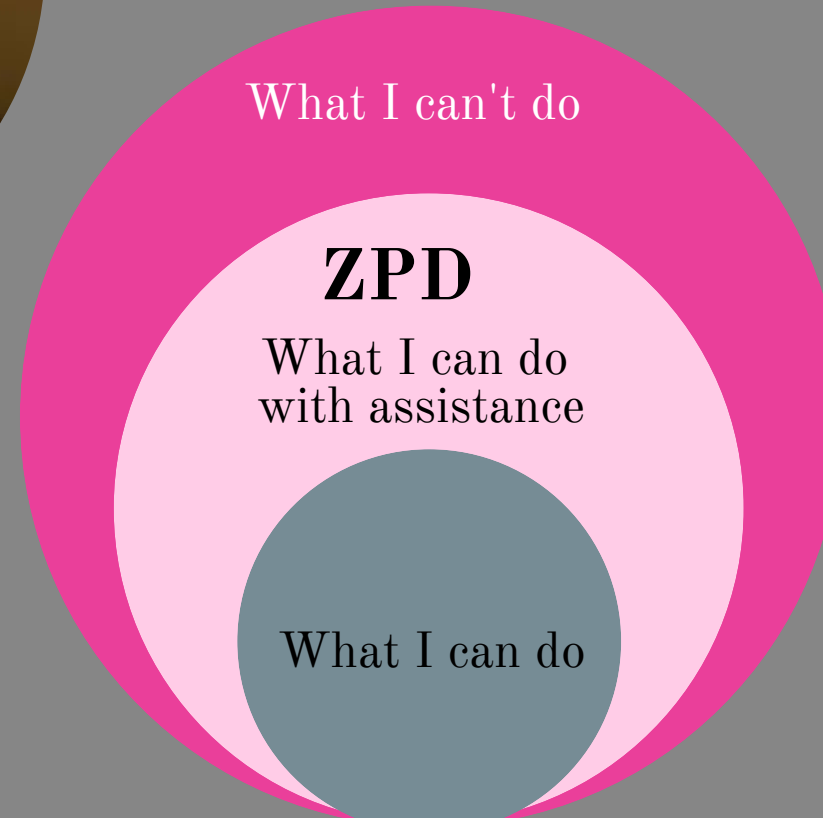
- Internal Processes
- Without reinforcement
- Goal-directed
- Organize information
- Without behavior

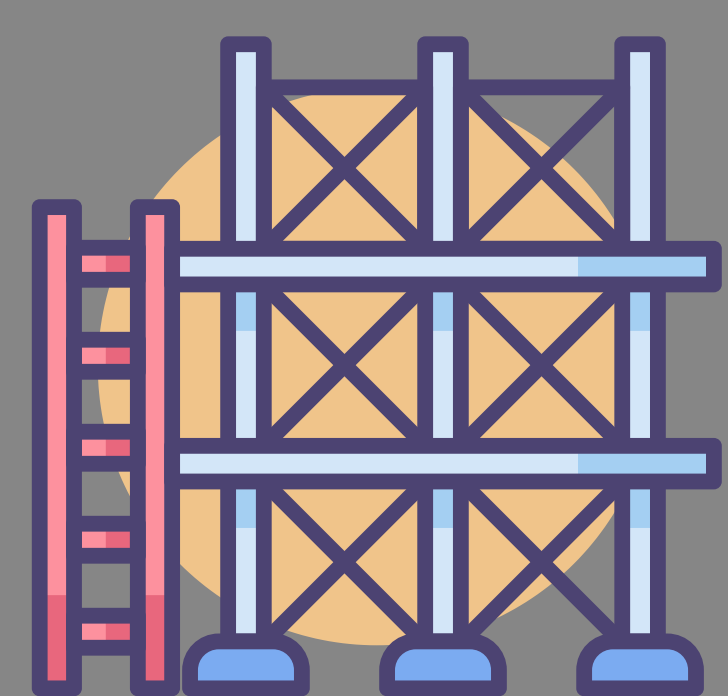


Lev Vygotsky

Zone of Proximal Development (ZPD)

Language is critical for learning and cognitive development





- Learning is most effective in the zone of proximal development
- Scaffolding supportive techniques aids learners to acquire complex skills in problem-solving and metacognition

- Social activities
- Internalize activities

Key Terms and Assumptions

- **Schemes:** Response to another stimulus in the same manner they respond to conditioned stimuli
- **Assimilation:** Fitting new information into the existing scheme
- **Accommodation:** Modifying the existing scheme to fit new information
- **Retrieval:** Getting information out of storage
- **Encoding:** Creating new memory
- **Dual store Model:** An information processing theory that demonstrates how information is processed in our heads (from sensory registration it goes to two "stores": short-term memory and long-term memory)
- **Information Processing:** Memories works in a way similar to how computers process information
- **Maintenance Rehearsal:** Repeating a piece of information so that it stays in the short-term memory as long as you need it. It does not go into the long-term memory
- **Memory:** Ability to recall information previously acquired
- **Meaningful Learning:** By relating new information to information stored in long-term memory people find meaning in that new information
- **Storage:** Process of putting new information in memory

- **Hierarchical Knowledge:** Long-Term memory storage structure arrangement where more general information superordinate information at the top of the hierarchy and more specific subordinate information below it
- **Learning IS change in mental representation**
 - Learning mechanisms include info processing, assimilation, accommodation
 - Knowledge is represented in schema
 - Schema structure can indicate surface and deep levels of learning
 - Learning is through dual coding that engages 9-events of cognitive processing
 - Mental changes can be inferred through behaviors, however learning does not require behavior change

References

Ormrod, J.E. (2012) Human Learning (8th edition). Upper Saddle River, NJ: Pearson Education
IDE 621 Syracuse University Handout

Graphics from: Wikipedia, Learning Process in Education | What is Gestalt Psychology? Structural Learning (structural-learning.com), Piktochart, What Are the Gestalt Principles? (verywellmind.com)