Learning Theories

Dr Marion Palmer

10 August 2016

Outline of talk

- Learning theories
  - Functions of learning theory

- Learning theory paradigms

- Personal learning theories

Learning

- Think for a moment.

- What is learning?
  - Gaining new knowledge
  - Developing skills
  - Change in behaviour

- How do you learn?
- What are your experiences of learning?
- Where does learning take place?

iadt
DUN LAOGHAIRE

Learning

- Knowledge acquired by study
  Allen, R. E. (1984) The Pocket Oxford Dictionary of Current English Seventh Edition, Oxford, Clarendon Press, p. 416.

- Learning – process that enables human beings to change behaviours and their capabilities
  Gagne et al., (1992) p. 6.

- The process by which humans acquire the range of variety of skills, knowledge and attitudes that set the species apart from others. Gredler (2005), p. 430.
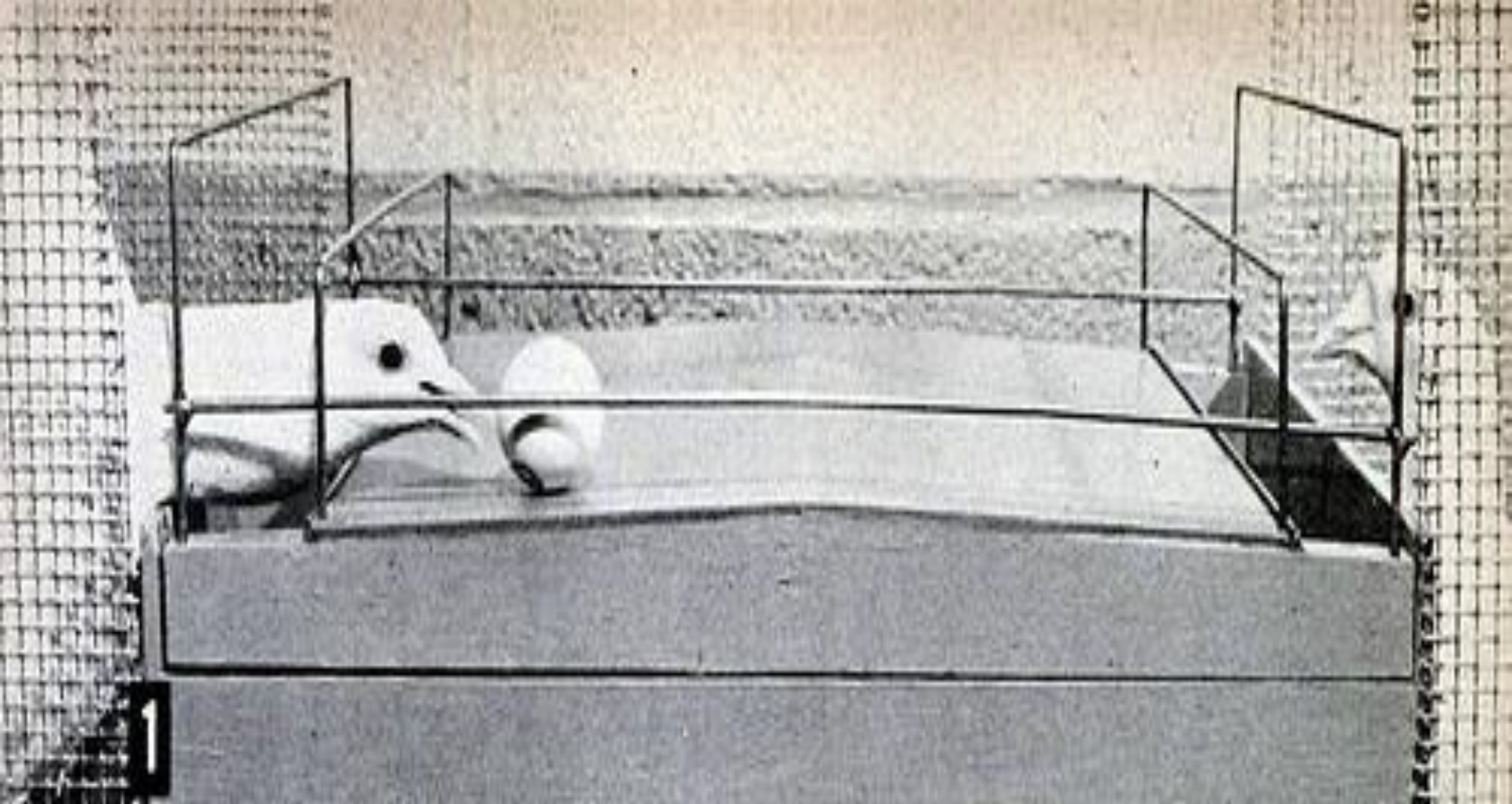
Learning theories

Learning theories

- What is a learning theory?
  - theories about how people learn

- Differences between learning theories
  - What learning is
  - The role of the learner
  - The learning situation.

Functions of learning theory

- **General functions**
  - Provides a framework for research
  - An organising framework for knowledge
  - Reveal the complexity of events
  - Reorganisation of prior experience
  - Working models of complex events
    - Gredler (2005), pp 15-19.

- **Specific functions**
  - Guides for planning instruction
  - Evaluating instruction
    - Evaluating products for use in instruction
  - Diagnosing problems in instruction
  - Evaluating research on theories
    - Gredler (2005), pp 15-19.

iadt
DUN LAOGHAIRE

Learning theories

- Learning theories – three main paradigms
    - Behaviourist
    - Cognitive
    - Constructivist   (Carlile & Jordan, 2005)

- Major learning theories
    - http://cehdclass.gmu.edu/ndabbagh/Resources/IDKB/models_theories.htm (Dabbagh, 2014)
    - http://cmapspublic3.ihmc.us/rid=1LGVGJY66-CCD5CZ-12G3/Learning%20Theory.cmap

Basic Principles

Objectivism/Behaviorism	Cognitivism/Pragmatism	Constructivism/Interpretivism
Learning happens when a correct response is demonstrated following the presentation of a specific environmental stimulus	Learning is a change of knowledge state	Learners build personal interpretation of the world based on experiences and interactions
Learning can be detected by observing an organism over a period of time	Knowledge acquisition is described as a mental activity that entails internal coding and structuring by the learner	Knowledge is embedded in the context in which it is used (authentic tasks in meaningful realistic settings)
Emphasis is on observable and measurable behaviors	Learner is viewed as an active participant in the learning process	Create novel and situation-specific understandings by "assembling" knowledge from diverse sources appropriate to the problem at hand (flexible use of knowledge)
Uses a "black box" metaphor - the learner is a black box, what happens inside is unknown	Emphasis is on the building blocks of knowledge (e.g. identifying prerequisite relationships of content)	Believes that there are many ways (multiple perspectives) of structuring the world and its entities
Emphasis is on relationships between environmental variables and behavior	Emphasis on structuring, organizing and sequencing information to facilitate optimal processing	Believes that meaning is imposed by the individual rather than existing in the world independently
Instruction utilizes consequences and reinforcement of learned behaviors	Focus is on how learners remember, retrieve, and store information in memory	
Believes behavior is guided by purpose	Examines the mental structure and processes related to learning	
Cues are antecedents to behavior and set the conditions for its occurence	Learning is viewed as an active process that occurs within the learner and which can be influenced by the learner	
	The outcome of learning is not only dependent on what the teacher presents but also on what the learner does to process this information.	

Learning theories and technology enhanced learning

- Technology enhanced learning is different.

- Step 1   Learning to use the technology.
- Step 2   Learning with the technology.
- Step 3   Learning through the technology.

- Example
  - Learning to surf the Internet.
  - Finding something out via the Internet.
  - Google something.

Learning theories

- Which learning theories are most applicable to technology enhanced learning?
    - Behaviourist
    - Cognitive
    - Constructivist
    - Social Constructivist

- Other relevant theories
    - Connectivism George Siemens
    - OCL Online collaborative learning Linda Harasim
    - Cognitive theory of multimedia learning Richard E Mayer

Personal learning theories

- How we think about
    - Learning
    - Learners
    - Learning situation

- Naïve view of learning based on personal experience.
- Informed view based on research literature.

- Instructional decisions informed by personal learning theories.

References

- Carlile, O. and Jordan, A. (2005) It works in practice but will it work in theory? The theoretical underpinnings of pedagogy. In: *Emerging Issues in the Practice of University Learning and Teaching*. O'Neill, G., Moore, S., McMullin, B. (Eds). Dublin: AISHE, 2005. Retrieved from http://www.aishe.org/readings/2005-1/carlile-jordan-IT_WORKS_IN_PRACTICE_BUT_WILL_IT_WORK_IN_THEORY.html.

- Gagne, R. M., Briggs, L. J. & Wager, W.W. (1992). *Principles of instructional design. (4th ed.)* USA: Wadsworth/Thomson learning.

- Gredler, M. E. (2005). *Learning and Instruction, Theory into Practice.* Upper Saddle River, NJ: Pearson.

- Harasim, L. (2012). *Learning Theories and Online Technologies.* New York and London: Routledge.

- Mayer, R. E. (2005). Cognitive Theory of Multimedia Learning. In *The Cambridge Handbook of Multimedia Learning.* Cambridge: Cambridge University Press, pp. 31-48.

- Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. *International Journal of Instructional Technology*, 2(1). Retrieved from http://www.itdl.org/Journal/Jan_05/article01.htm.

iadt
DUN LAOGHAIRE

Further reading

- Bransford, J. D., Brown, A. L., and Cocking, R. R. (2000). *How People Learn, Brain, Mind, Experience, and School*. Washington DC: National Academy Press.
- Dirksen, J. (2012). *Design for how People Learn*. Berkeley, CA: New Riders.
- Illeris, K. (ed.) (2009). *Contemporary Theories of Learning. Learning Theorists . . . in their own words.* London and New York: Routledge.
- Sierra, K. (2006) *Crash course in learning theory*. Retrieved from http://headrush.typepad.com/creating_passionate_users/2006/01/crash_course_in.html.

- Dr Marion Palmer mjpalmer25@gmail.com, @mpalmeriadt