Connectivism

About connectivism

Connectivism[1] is a new learning paradigm and a learning theory introduced in 2004 by George Siemens. This theory attempts to approach learning and knowledge in context of technological development during the last few decades, since the impact of technological achievements on learning and knowledge cannot be ignored.

Motivation for introduction of connectivism comes from notion that learning theories in frames of behaviorism, cognitivism, constructivism[2] promote the understanding that learning occurs only inside a person. According to Siemens,

- "*These theories do not address **learning that occurs outside of people** (i.e. learning that is stored and manipulated by technology). They also fail to describe how learning happens within organizations... We can no longer personally experience and acquire learning that we need to act. We derive our competence from **forming connections**.*[3]"

Siemens' connectivism incorporates ideas from:

- **Chaos theory** - Recognizing complex patterns and deep sensitivity on small changes in initial conditions are important properties of learning and decision-making as well as key aspects of chaos theory.
- **Self-organization** - This term usually refers to "*the spontaneous formation of well organized structures, patterns, or behaviors, from random initial conditions.*"[4] Self-organization is according to Siemens a characteristic of knowledge on personal as well as on institutional or corporate level.
- **Networks** - Network models were acquired because of their applicability and simplicity. Networks are sets of relations between elements which integrate those elements into a whole.

Connectivism integrates these principles. Learning is defined as **actionable knowledge** which can reside in a person but also outside one, for example in a database or organization. The process of learning is focused not on acquiring more knowledge into or from each of such information sources, but on connecting them and maintaining those connections.

Connections are formed between nodes, but also between networks of nodes. Nodes can represent virtually anything, like a community or an individual, and the stronger the connection is, the faster information will flow between the nodes. Aggregated nodes form the network, but the network itself can only have limited influence on the nodes. According to Siemens[5], elements and characteristics of a network include:

- Content (data or information)
- Interaction (tentative connection forming)
- Static nodes (stable knowledge structure)
- Dynamic nodes (continually changing based on new data, since knowledge can and does change over time)
- Self-updating nodes (nodes tightly linked to original information source)
- Emotive elements (emotions that influence the prospect of connection)

Connections between the nodes can depend on various factors which make them stronger or weaker[6]: motivation (impacts individuals determination to foster deeper connections), emotions (affect our evaluation of nodes and allow existence of contradictory perspectives), exposure (nodes grow and develop through forming connections to other nodes), patterning (recognizing the nature of different sources of information), logic and experience.

What is the practical meaning of connectivism?

Keywords and most important names:

- George Siemens, Stephen Downes

Criticisms

Some authors like professor of educational design Bijdrage van Pløn Verhagen criticize connectivism for being a pedagogical approach rather than a learning theory, since it doesn't really attempt to explain processes of how people learn.

Bibliography

Siemens, G. Connectivism: A Learning Theory for the Digital Age. 2005.

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Siemens, G. Connectivism: Learning as Network-Creation - ASTD. 2005.

Read more

Connectivism (George Siemens' blog).

1) Not to be confused with connectionism.

2) and humanism

3) Siemens, G. Connectivism: A Learning Theory for the Digital Age. 2005.

4) Rocha, L. M. Selected self-organization and the semiotics of evolutionary systems. Kluwer Academic Publishers, 1998.

5) , 6) Siemens, G. Connectivism: Learning as Network-Creation - ASTD. 2005.