TECHNOLOGY IS THE EMPEROR'S NEW CLOTHES: CONNECTIVISM AS THE EIGHTH INTELLIGENCE

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Abstract:

Technology has become an integral part of most people's daily lives. As such, more and more young people are utilizing it for their educational pursuits. This paper seeks to explain that connectivism, its own theory, is actually a natural outgrowth of multiple intelligences theory. We will explore the ease with which we can, as educators, integrate it into current teaching practices and pedagogy. We will also describe multiple intelligence from a learner based point of view, the importance of using technology in the classroom, and how to integrate technology both on a practical level and via theories that underpin current educational practice.

Introduction

Technology is continually growing, changing and developing at a rapid pace. New gadgets and software appear all the time to anxiously-awaiting early adopters, those people who are the first to try the latest and greatest. All this change can be rather exciting for some; however, it feels like chaos to others. Those who are in the education field are faced with a challenge to make sense of all this *technology chaos* as noted by Siemens (2008) who stated that the "call for academic reform, driven by growing fears of lack of competitiveness and innovation in a global economy, has reached an almost fevered pitch" (Siemens, 2008). Many educators and administrators are trying to figure out ways to improve their efficiency and find effective ways of integrating technology in their classrooms. There are some who think technology is merely another tool to use in the classroom and some who embrace it wholeheartedly as an extension of instructional design. As the literature and research suggest, "technology-using teachers range along a continuum of instructional styles from instruction to construction" (Dexter, 1999). How then can educational technologists move beyond the tools and technology and enhance their discipline to include a robust learning theory in their practice? There is an emerging theory called connectivism that seeks to do just that.

While it is exciting to think of something new happening in regards to learning theories, it is possible that connectivism is merely a natural outgrowth of the existing theory of multiple intelligences as explained by Howard Gardner and his research. This "new" theory can be easily integrated into current teaching practices including the use of technology. Connectivism can be explained by multiple intelligences theory by expanding the definitions of interpersonal and intrapersonal intelligences, augmenting each to include the use of a network for learning and knowledge, ultimately adding the *eighth intelligence*. In order to illustrate this, it is important to take a look at each of the theories individually, see where they connect; and take a look at how they connect to educational technology.

Multiple Intelligences Theory

"MI Theory grows out of a conviction that standardized tests, with their almost exclusive stress on linguistic and logical skills, are limited" (Gardner,1989). As the theory developed, it became apparent that human intelligence could be divided into seven different categories: Logical, being patterns and numbers; Linguistic, sensitive to language use; Musical, music expression; Spacial, the physical world in front of a person; Kinesthetic, control of one's body; Interpersonal, interacting with others; and Intrapersonal, understanding one's own feelings. These categories stem from three distinctions the theory promotes stating that intelligence is the property of all human beings; it is where all humans differ and the way one carries out a task (Gardner, 2011). This theory suggests that humans need different avenues of learning and by adding activities that will cater to as many of these intelligence

skills as possible, learners will have better outcomes for retention. So the question then becomes, 'What if there are more intelligences beyond the "seven?"'

As the world continues to develop new and different ways to interact, it makes sense that there would emerge new intelligences for learning, or at the very least some of the existing ones would be modified or adapted to help explain these new interactions. Some theorists have done that in the connectivism theory.

Connectivism

Connectivism is a network theory that seeks to define how we learn through by using our online networks, who we are connected to. Learning in connectivism terms is a network phenomenon. This means that learning is influenced, aided, and enhanced by socialization, technology, diversity, strength of ties, and context of these occurrences (Tschofen, 2012). Connectivism is built on the idea that we are all networked. The major contributor to connectivism, George Siemens, asserts that "education's perceived failings fall largely on its structure" (p. 8). Connectivism theory is that the "formation of connections between nodes of information (i.e., networks)" constitute knowledge (Siemens, 2008).

According to much of the research, connectivism is mainly used to define how learning takes places in regards to online or e-learning. However, Siemens (2008) lays out the principles he feels are assets to connectivism, which can be applied to many different uses beyond online learning. They are:

0. Learning and knowledge rests in diversity of opinions.
0. Learning is a process of connecting specialized nodes or information sources.
0. Learning may reside in non-human appliances.
0. Capacity to know more is more critical than what is currently known.
0. Nurturing and maintaining connections is needed to facilitate continual learning.
0. Ability to see connections between fields, ideas, and concepts is a core skill.
0. Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
0. Decision-making is itself a learning process (Siemens, 2004)

One of the tenets of connectivism is that learning is a persistent change and as a result of the interaction a learner has with the world, learning takes place (Siemens, 2004). There are many ways that we interact with the world and we certainly use more than one sense to do so. So can connectivism emerge as the eighth intelligence? Network-type theories have risen in many other scholarly disciplines, such as computer science since the 1990's (Borgatti, 2003). It would be very easy to augment ideas in multiple intelligences to incorporate a network theory, particularly to absorb the aspects of connectivism that mirror what is already known in network theory.

The Eighth Intelligence

There is a tendency to seek out a direction when there is a perception of chaos. So in many cases multiple intelligences is used to make sense of different styles of learning. It helped make a map to give direction to the many ways in which people learn. Armstrong noted this, stating that, "The theory of multiple intelligences makes things a little simpler for us by chunking the broad range of human abilities into seven basic intelligences" (1994).

A natural outcome of interpersonal intelligence (the intelligence that deals with interaction with people) would be networking, the central issue in regards to connectivism. Multiple intelligences is used to cover many various aspects of learning and learning styles, as does connectivism, with its networks and use of diverse technologies. "Education is a social process and, in the language of chaos theory, it is one of the arrows in time, an arrow guided and directed by human choices" (Hunter, 1997). Thus while there seems to be a need to find something new that would help explain these theories, it may very well be that we have a learning theory already in place that could easily incorporate the concept.

Narges Sariolghalam (2010) studied the effectiveness of multiple intelligences on organizational culture. Organizational culture is about how groups interact. Sariolghalam identified the essentials for healthy organizational culture.

0. People need to cope with massive, rapid change.
0. People need to be more creative in order to drive innovation.
0. People need to manage huge amounts of information.
0. The organization needs to increase customer loyalty.
0. People need to be more motivated and committed.
0. People need to work together better.
0. The organization needs to make better use of the special talents available in a diverse workforce.
0. The organization needs to identify potential leaders in its ranks and prepare them to move up.
0. The organization needs to identify and recruit top talent.

0.   The organization needs to make good decisions about new markets, products, and strategic alliances.
0.   The organization needs to prepare people for overseas assignments (p,164).

The current learning concepts of behaviorism, cognitivism, and constructivism and other learning theories do not attempt to address the challenges of organizational knowledge and transference (Siemens, 2004). However, Multiple Intelligences Theory does. Connectivism can be added to the MI theory, not by natural cognition, but because network theory is becoming integrated into many other disciplines.

Network Theories

Connectivism is quite simply a network theory. "A network is a set of actors connected by a set of ties. The actors (often called "nodes") can be persons, teams, organizations, concepts, etc." (Borgatti, 2003). Network theories emerge in virtually every traditional area of organizational scholarship such as leadership, job satisfaction, job performance, entrepreneurship, stakeholder relations, knowledge utilization, innovation, profit maximization (Borgatti, 2003). Because of the chaotic nature of technology innovation and the educational community's embracing of that technology chaos, it is important to use an existing theory to help define how we learn with technology. Choosing to define it using the flexibility of Multiple Intelligences can help reduce the chaos since we are using an understood learning theory.

Connecting The Dots With Technology

It has not been easy to define learning theories that would be integrated easily with technology. "In looking back over the past four decades, (the) field of educational technology has struggled in defining itself" (Luppicini, 2005). So how can we be effective with the use of technology in the classroom? "Effectiveness is an elusive concept that can be approached through several models, none of which inappropriate in all circumstances" (Sariolghalam, 2010). Because the circumstances change, we try and 'connect the dots' or 'figure out how the pieces of the puzzle fit together' or 'draw a map'. These metaphors are laymen's terms that can be used to describe learning. These simple cliches can also be used when implementing technology. They can encourage the teacher to do what is necessary to help the learner learn based on their own method of understanding. It is important to find the right tool, connection, interaction, or network to build upon these differences. As educators, we need to seek to implement learning goals using technology.

The theory of connectivism seeks to "reflect the many shifts in contemporary cultural narrative including increased recognition of systems, complexity, and interrelatedness" (Tschofen, 2012). The theory of multiple intelligences is based on the different learning preference in every human. Together they can help us understand the chaos.

Conclusion

One final thought on merging these theories into an eighth sense among many others, is that no one process is best for each learner. We can use connectivism to "describe" what we think is happening when in reality there is already a theory that encompasses what is going on — multiple intelligences. The theory of networks is not new; it has been used to explain how organizations work. It can easily be added to the theory of multiple intelligences. According to Gardner (1989), there were times when the theory could be modified and that there would be times that multiple intelligences theory will have to be revamped (p, 10). "Even so, the goal of detecting distinctive human strengths, and using them as a basis for engagement and learning, may prove to be worthwhile, irrespective of the scientific fate of the theory" (Gardner, 1989). As educators, we need to find what works for our individual learners and merge the existing knowledge of network theory and multiple intelligences and begin to see successful learning objectives realized.

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References

Armstrong, T. (1994). Multiple Intelligences: Seven Ways to Approach Curriculum. *Educational Leadership*, *52*(3), 26–28.

Borgatti, S. P., & Foster, P. C. (2003). The network paradigm in organizational research: A review and typology. *Journal of management*, *29*(6), 991–1013.

Dexter, S. L., Anderson, R. E., & Becker, H. J. (1999). Teachers' views of computers as catalysts for changes in their teaching practice. *Journal of research on computing in education*, *31*, 221–239. Retrieved from http://web.ebscohost.com.libproxy.boisestate.edu/ehost/detail?sid=ca5d44ca-86d2-4e60-8415-4598e4883b40%40sessionmgr10&vid=1&hid=25&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=cph&AN=2780728

Gardner, H. (2011). Frames of mind the theory of multiple intelligences. *site.ebrary.com*. New York: Basic Books. Retrieved February 27, 2013, from http://site.ebrary.com/id/10449816

Gardner, H., & Hatch, T. (1989). Multiple Intelligences Go to School: Educational Implications of the Theory of Multiple Intelligences. *Educational Researcher*, *18*(8), 4–10. Retrieved from http://www.jstor.org/stable/1176460

Hunter, W. J., & Benson, G. D. (1997). Arrows in time: The misapplication of chaos theory education. *Journal of curriculum studies*, *29*(1), 87–100.

Kop, R., & Hill, A. (2008). Connectivism: Learning theory of the future or vestige of the past? *The International Review of Research in Open and Distance Learning*, *9*(3).

Luppicini, R. (2005). A systems definition of educational technology in society. *JOURNAL OF EDUCATIONAL TECHNOLOGY AND SOCIETY*, *8*(3), 103.

Sariolghalam, N., Noruzi, M. R., & Rahimi, G. R. (2010). The Enigma of Howard Gardner's Multiple Intelligences Theory in the Area of Organizational Effectiveness. *International Journal of Business and Management*, *5*(5), P161.

Siemens, G. (2008). Learning and knowing in networks: Changing roles for educators and designers. *ITFORUM for Discussion*.

Tschofen, C., & Mackness, J. (2012). Connectivism and dimensions of individual experience. *The International Review of Research in Open and Distance Learning*, *13*(1), 124–143.