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Connectivism: A Navigation in the Network of Knowledge

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Abstract

In the web-based pedagogical technology, learning does not simply happen within an individual, but within and across the networks. Knowledge is distributed and resides in the brain and also in connections with electronic equipments. Learning consists of the ability to construct and traverse the networks that help learners acquire viewpoints and diversity of opinions. It is a process of plugging into the world of constant information flow and drawing meaning from it. As the world continues to grow and evolve, the knowledge needed for tomorrow is more essential than the knowledge needed for today.

Keywords: Digitalization, Connection, Plugging, Actionable, Networks, Nodes.

Introduction

Education in the recent past witnessed a remarkable change through the incorporation of digital tools and equipment into classrooms. The rapid technological change is well aligned with the learning process. The impact of digitalization on learning fetched innumerable opportunities for learners to locate and retrieve information, avail learning resources, as well as to associate with other learners. Teachers and students, thus, interact in virtual classrooms to share information, ideas, personal messages, and study materials. The term digitalization of education denotes the combined use of computer hardware and software, to facilitate engagement of educational theory and practice. Digitization of pedagogy resulted in tremendous changes in the "design, development, utilization, management, and evaluation of processes and resources for learning" (Garrison, & Anderson, 2003). Consequently, creating learning aids and materials with digital tools became an important part of learning (Trentin & Repetto, 2013).

The advent of digitalization generated excitement for learners as well as for teachers. Education managed by technology facilitates interactive situations where common media tools are managed by both teachers and students. Interactive quizzes replaced traditional means for testing knowledge; instead of probing in the book catalogues, search tools facilitate retrieving information online. Interactive learning was effectuated by discussion boards, email, whatsup, and live chat. Thus, technology has proved its potential to enhance the learning process by offering highly flexible access to the syllabus and affording support outside the classroom. Researches show that digitalization has enhanced exam scores with a difference from the fiftieth to seventieth percentile and curtailed the dropout rate, especially in technical fields by 22 per cent (Saylor & Michael, 2012).

Statement of the Topic

The present paper is a discussion on the mode and manner of learning in the digital network. Unlike in the past when learning was a process of memorization of facts in the brain, learning in the web-based

pedagogy means retrieving informations from the digital repository. Information processing has become a shared activity by the brain and machines. Hence, an attempt has been made here to delineate the link between man and machine, nerves and nodes, in the learning process. In the network of knowledge learning viewed as the formation of appropriate connections. The present study is titled as Connectivism: a navigation in the network of knowledge.

Methodology

This study is a descriptive analysis based on qualitative data collected from empirical evidences.

Research questions

The major objective of this study is to discuss and explicate the phenomenon of man machine linkage in learning. Following questions are formulated towards this end:

1. What is the process involved in web linked learning?
2. What is connectivism ?
3. What are the learning skills in web based learning?
4. How do web-connections help students?

Online resources were tapped for gathering data and they were interpreted and discussed.

Linked to Learn

Learning is a process of connecting, because, connections open up new skills, thoughts, and ideas. The essence of new-age learning is the formation of connecting links across digital networks. Teachers present their classes at any time anywhere and students retrieve them from anywhere and anytime. Students attend live classes, or download and attend later, leave their feedback, respond to tasks, and attend examinations at a convenient time. Internet tools design enormous chances for learners to acquire and distribute information among themselves and across the web. Thus, mobile devices used in online settings enhance learning experiences (Robinson & Reinhart, 2014).

An open-source learning platform called Learning Management Systems (LMS) facilitates linkages in learning. LMS settings keep the framework of the traditional classroom and help to manage a learning programme organized and specific to participants, content, duration, and outcomes. Each learner is endowed with a network of individuals, assets, and the internet itself that represents information and experience. A learner who looks for a topic, does not have to go through a prescribed learning course; instead, he/she can reach out and avail the required information. The process involved in web-based learning is building connections. The procurement of knowledge occurs through building connections not only with the sources, but among the past, present, parallel, and differing knowledge. Thus, the term ‘connection’ in digital pedagogy is very comprehensive encompassing the connections among the individuals as well as the links among different sources and levels of knowledge.

Connectivism

Technology as a systematic application of scientific knowledge (Saettler, 1990) has empowered people to learn and share information throughout the World Wide Web and among themselves in ways that were unimaginable prior to the digital era. In web-based pedagogy learner’s knowledge is spread out and dwells not only in his/her brain but also in the network of electronic equipment. Hence, learning consists of the skill to build and navigate these networks. This concept was popularized by George Siemens and Stephen

Downes in 2005 and they proposed a theory of learning called Connectivism.

Connectivism has emerged as a learning theory that acknowledges the ever-changing flex of learning networks, their intricacy, and their technological role in learning networks. Knowledge is distributed and exists in the learner's brain and also in connections with electronic and human elements which the learner has advanced in the course of his learning. Knowledge is actionable and resides external to the learner but inside an association or a database.

Connectivism is defined as actionable knowledge, where the skill to locate knowledge may be more essential than identifying what that knowledge encompasses. Unlike Constructivism, knowledge is connected rather than constructed. "There is no concept of transferring knowledge, making knowledge, or building knowledge" (Downes, 2007). Knowledge is neither acquired and nor constructed as though it were a thing. There is no acquisition or construction of meaning, instead, meaning evolves rally through a sequence of associations and is not composed through some deliberate act. The actionable knowledge that learning is, resides outside of the learners but within an organization or a database.

Man- Machine Network

Siemens (2005) emphasizes that, "Connectivism presents a model of learning that acknowledges the tectonic shifts in society where learning is no longer an internal, individualistic activity." This is because learning and knowledge reside in both human and mechanical devices, having distributed across a network of connections. Learning may reside in non-human appliances. Learners may store information in a digital way, like in an app, social media post, or video. Similarly, a community of learners may store information in a database or forum.

Knowledge is produced beyond the level of individual human participants, and it is neither controlled nor created by any formal institutions. However, any institutions and organizations can and should 'plug in' to this world of perpetual information flow, and make sense out of it. Knowledge in connectivism, as Siemen says, is a "chaotic shifting phenomenon as nodes come and go and as information flows across networks that themselves are inter-connected with myriad other networks".

"The central aspect of connectivism is the metaphor of a network with nodes and connections. In this metaphor, a node is anything that can be connected to another node such as an organization, information, data, feelings, and images. Connectivism recognizes three node types: neural, conceptual (internal) and external" (Siemens, & Tittenberger,2009). Connections may have varying directions and strengths. In this sense, "a connection joining nodes A and B which goes from A to B is not the same as one that goes from B to A." Besides, there are some particular kinds of connections such as self-join and pattern. "A self-join connection joins a node to itself and a pattern can be defined as a set of connections appearing together as a single whole" (AlDahdouh, Osório, & Caires, 2015).

The fundamental postulate is that knowledge is fluid, and it does not exist in isolation, nor it exists within any individuals; but knowledge exists with groups. Knowledge can only exist in common agreement by the partakers in a group. It consists of connections formed among people and mechanical devices or things having real world applications. "Knowledge is a set of connections formed by actions and experience," emphasizes Downes (2007). Therefore, the process of learning means the practice of making connections and developing or enhancing network complexity. Learning does not merely take place within an individual, but within and across the networks. It is a process of connecting, nurturing, and maintaining information sources; it is a continual and embedded process in a network system that is open to interfaces at varying levels of intensity.

Connecting Skills

Forming connections is the core learning skill in pedagogical technology (Siemens, 2005). Ability to see connections between ideas, concepts and fields is significant. By applying the skill to identify connections between areas, concepts, and perceptions students can remain current on any topic. Making connection involves executive function skills including drawing on stored informations, figuring out the differences, and categorizations. The quality of learning consists of learner's skill to construct, curate, and extract value from the networks (Dutton, & Jeffreys, 2010).

The competence to know more, and to accept diverse information is more decisive than what is presently known. Learners derive their competence from forming new connections. Learning and knowledge rest in a diversity of views and opinions, from which connectivism aims to cull out accurate, up-to-date knowledge. Therefore, new information is frequently being attended. Identifying apt connections is an essential skill in learning.

Learning through connections is determined by the understanding that decisions are based on quickly fluctuating foundations. Knowledge is continuously fluctuating and altering: the knowledge of today may not be the knowledge of tomorrow (Siemens, 2005). The right decision today may be the wrong decision tomorrow. Hence decision-making is a vital part of learning process, and the keenness to draw distinctions between significant and insignificant information is vital. Students sift through what is relevant and what is not, in a world of increasing access to information.

Learning occurs when the knowledge that resides in a database is connected with the right people in the right context. This means that learning is the process of identifying and actuating the knowledge at the point of application. When knowledge is required, but not identified, the knack to 'plug into sources' to meet the requirements becomes a dynamic learning skill.

Continuous learning means constant building and nurturing the connections. The aim of the learners is to preserve the existing information accurately. The connections once formed need to be maintained and nurtured, which is possible through collaborative social interaction. Thus, social skills are essential for linked learning. Learning is not alienated from social life; instead, it is connected to real-life experiences and it is subjected to prior knowledge, personal experiences, and cultural bias. Activities are undertaken when students engage in the practices of learning, thereby growing or developing themselves and their society in connected ways. Connectivism emphasizes informal learning wherein learners fluidly move between social networks participating within and across physical and virtual networks.

Benefits of being Connected

Connective learning is facilitated by internet technologies such as wikis, web browsers, search engines, and online discussion platforms. This provides mobility and autonomy to learners who stay connected in a shared growth experience.

In connective learning, learners share and learn through collaboration within the defined social network. Students with a common learning goal can promote and sustain a well-organized flow of knowledge. Connections enable learners to tap into huge databases of knowledge. this empowers them for making critical decisions instantly, and to take knowledge further. Students equipped in such a way can undertake research and interpret patterns.

Besides social network, students can maintain personal networks as well. Through personal networks, learners grow in perspectives and multiplicity of opinion. The information accessed and perception developed from personal network augment their learning efficiency (Siemens, 2005).

Knowledge shared with social networks saves the learner from cognitive overload. In Connectivism a learner is not expected to hold all the information in memory but can identify and locate the relevant information from the networks. This also saves the learner from communication overload because the learner needs only to process the required information communicated across networks.

A real challenge for any learning method is to foresee emerging needs and activate the known knowledge on time. As the world changes very fast with knowledge continuously growing and evolving, connections keep students updated and advanced.

Conclusion

Building connection with knowledge is the process of learning. The more learners are connected, the more they are enlarged in knowledge, rather than entangled in knowledge.The pedagogical skills involves identifying the relevant and significant source of information and plug into it on time. Connectivism provides personal as well as social space for the learners, and keep them updated and equipped for future. The mere existence of technological tools is not sufficient for learning. As B. F. Skinner observed, the real problem is not whether the machines think, but whether the men do it. Thinking man engages with actionable knowledge, that is what connectivism is all about.

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