Reconceptualizing e-learning

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Introduction

In 2011, Andrews wrote that the field of e-learning had not yet attained enough maturity to build a 'grand theory' for e-learning sufficiently distinct from other well-established, non-technological theories. Six years on, Rüth & Kaspar concurred that the state of learning research still calls for a comprehensive and explicit theory of e-learning addressing the significance of adding technology to learning. More than 20 years have passed since e-learning came into existence. Yet, no theory captures how we have significantly departed from behaviorist, cognitivist, constructivist, and connectivist learning theories (Mashroofa (2019).

The absence of an overarching e-learning theory does not mean that there was no research on earlier technology-mediated teaching modes such as Instructional Television (Wittington, 1987), radio-based instruction, or Computer CD ROM instruction (Tsai, 2000). Some of us witnessed Computer-Assisted Language Learning (CALL) courses. Then came the first wave of internet-based courses subsumed under Web 1.0, the so-called "Read-Only Web", where the curriculum was pushed onto learners in the form of static pages, with virtually no interaction between users and the internet other than through clicking and hypertext hopping.

With Web 2.0, netizens started partaking in an "architecture of participation" based on access to applications, computers, users, multimedia, and social media to bring communication, interaction, and collaboration to unprecedented levels. These processes are mediated by such tools as "Wikis, Facebook, blogs, tagging, LinkedIn, virtual reality, social bookmarking, mashing, rss, podcasts, folksonomies, ePortfolios, chatrooms, and similar technologies" (Foroughi, 2011, p. 2). They constituted a significant departure from well-established theories, were a cut above Web 1.0, and gave rise to what came to be known as connectivism. With the fluidity characteristic of how learning has evolved, it is high time we came up with e-learning specific theory.
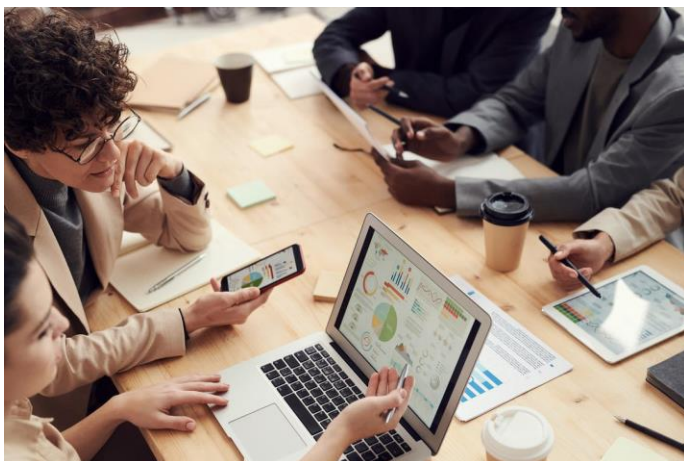

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The opportunity

Distance education, including e-learning, is not just a matter of migrating class from a brick and mortar building to cyberspace but should be theorized as a "pedagogic concept". Online learning is mobile, ubiquitous, diversified, personalized, collaborative, and participatory. We need to unpack its pedagogic promises and theorize it as a paradigmatic shift. Given the above, we join Haythornthwaite and Andrews in wondering "whether e-learning requires a new theory of learning" or "merely an extension and 'application' of contemporary learning theories" (Andrews, 2011, p. 104).

In what follows, I will briefly review the dominant learning schools of thought and argue that the current learning landscape, with its state-of-the-art technology, indicates that the prevailing theories do not adequately account for the disruption that has overtaken the field of learning. In other words, we need to show that there is more to present-day e-learning than can be explained by established theories and the technologism surrounding them.

A brief review of established learning theories

As a learning theory, behaviorism is empirical through and through. Learning is coterminous with observable changes in behavior brought about by mimicry, memorization, and reinforcement.

Under cognitivism, learning is a mental process whereby the learner receives input from different sources, which they then process internally and reproduce as output.

Constructivism conceives of learning as the outcome of interaction within a community of learners and knowers. Members are continually coached to register new learning gains in socially-scaffolded environments.

Connectivism is defined as the process of "connecting specialized nodes or information sources" made possible by technology. Knowledge resides in human and non-human networks to which learners are connected. Under this view, learning is the "ability to see connections between fields, ideas, and concepts" (Goldie, 2016, p. 1065-1066)
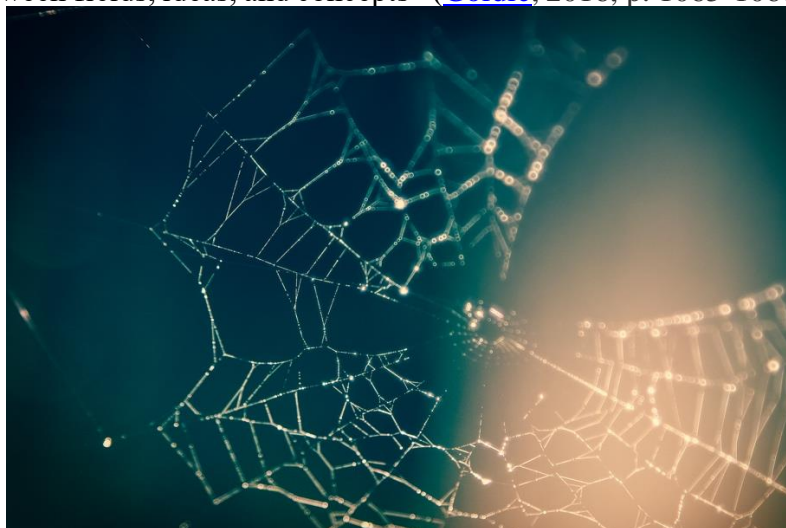

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Why the need for an e-learning theory?

Far from dismissing repetition and memorization as irrelevant, we will say that computer and internet softwares, apps, and programs know no such thing as fatigue; learners have unlimited opportunities to practice the materials. Therefore, part of what they learn comes through training and skilling, using computers or otherwise. This feature ticks the box for behaviorism. However, we also know much learning happens inside the learner's head. Mental processes are said to occur when firing neurons create connections inside the brain. There is a time when the learner independently focuses on the materials they have acquired and attempts to create their own approximative rules of what they have studied. Thus, internal processes occur and move the learner along the mastery path. Finally, learning is contingent upon belonging to and drawing into the knowledge and practices of multiple communities whose resources are available to the network.

Several features characterize connectivism, including the following: a plethora of materials, sources, and practice opportunities, learning anywhere, anytime, student and content-centered approaches, the teacher as facilitator, learner agency, learning as a mental process, activation of prior learning, scaffolding, learning as a socially mediated activity, the world as network, architecture of participation, and collaborative work, etc.

Connectivism, as defined by George Siemens (2005) and Steve Downes, came about in 2004/2005; a significant portion of the gadgetry of present-day e-learning practices had not surfaced yet. Educators, curriculum designers, and e-learning scholars were busy integrating new technologies into education and helping instructors catch up with the learners' ease with emerging technologies. You could almost say that web conferencing technologists, cloud engineers, and software developers were in the driving seat while instructors were trying to catch up with a torrent of technology. Still, Andrews (2011) describes the e-learning research as being dominated by ethnographic, pragmatic and descriptive studies that did not go far enough to introduce a significant theoretical contribution. Again, I am not saying that e-learning research were "theory-free" (Rüth and Kaspar, 2017, p. 95). What they lacked was "a theory of what the inclusion of technology adds to learning" (Ibid).

In the remainder of this post, I want to offer a couple of comments to reconsider our understanding of e-learning. The first comment is that much of the e-learning being designed now targets "Generation Z" members born after 1995. This first generation of digital natives is born into global connectivity. They "live and breathe" technology (Cilliers, 2017, p. 190). In a few short years, 80% or more of the schooled generations will think of e-learning as the standard, default learning environment. They may not even compare it to face-to-face learning, which would be a relic of an earlier period. This generation will take instruction to be, first and foremost, electronic. This generation masters technology and takes it for granted. We may even have to drop the "e" in e-learning because learning is, by definition, electronic. I contend that we need to elaborate a theory of e-learning where technology as such is not put front and center. In short, we need to develop an e-learning theory that allows us to do whatever is done in the walled classroom, and more, electronically, without making a big deal of technology.

The second comment I wish to add to the mix is that a theory of e-learning should assign a role to education that is supremely different from and superior to grasping materials, learning

them, and reproducing them. The traditional curriculum, designed primarily to help learners acquire a body of materials is now obsolete. Knowledge is freely available everywhere in different forms and through various channels. Ideally, no one should overburden their memory with a load available at their fingertips. Consequently, we must contemplate new goals for learning and instruction other than or in addition to knowledge acquisition and reproduction. Henceforth, when we design the curriculum, we should allocate a tiny proportion of its materials to learning in the sense of transmission and reproduction. Critical thinking, higher-order thinking skills, problem-based learning, and project-based learning should figure more prominently. Primarily, the curriculum should help learners imagine, permutate, reshuffle, create, produce, and author based on what technology has made possible: interaction, participation, collaboration, and access.

There may be room to add another feature to this outline. In the past, instructors were almost always the only readers, evaluators, and consumers of work completed by students. Students did the work, teachers graded it, and that was the end of the story. In today's learning environment, students' work usually involves teams who draw freely into their own and each other's networks, use the teacher as a coach, read, view, integrate a plethora of learning assets, and experiment in novel ways. What they produce is not just for the instructor to view, evaluate, and shelf. Quite the contrary, it is fit for posting, sharing, commenting, critiquing, enriching, remixing, resharing, etc. Eventually, the work learners now produce constitutes their attempts to contribute to content production.

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Conclusion

The gist of Kuhn's "Structure of Scientific Revolutions" predicts that theories fall under the weight of new data, observations, and problems they can no longer account for. Subsequently, new theories or inklings thereof emerge with higher explanatory power.

Our main contention in this blog is that, for the most part, learning theories still conceive of learning as the transfer of bodies of knowledge from the head of the instructor to that of the learners using instructional methods with varying levels of sophistication. As we now know them, information and communication technologies have created a new ecosystem that disrupts our conception of learning and instruction. This reconceptualization rests on three observations that characterize how e-learning is unfolding:

1. learning technologies are becoming seamless because their users have gotten so familiar with them and do not compare them to traditional face-to-face learning environments.
2. Under this framework, participatory, collaborative, and interactive processes foster conditions for learners to construct, create, and author new products instead of mimicking the instructor's image.
3. Learners no longer produce work only for the instructor to view, grade, and shelf. Instead, there is room for them to share their products on the world wide web and thus actively contribute to our growing repository of human endeavors.

Given the above, e-learning theory should distance itself from the technologizing discourse. We will shortly reach a state where technology becomes invisible. Participation, collaboration, and interaction will have become standard teaching and learning tools and not simply processes to which we pay lip service. Under these circumstances, the object of learning should evolve to empower learners to invent, create, and author materials instead of simply acquiring content.

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