

The Fourth Industrial Revolution Meets the Fourth E-Learning Revolution

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Over the past few centuries, humankind has entered and exited a series of industrial ages from the age of steam and water power to the immense benefits of electricity and efficient assembly line workers to the tremendous life enhancements from computers and pervasive automation. Now we are on the cusp of the fourth industrial age related to cyber physical systems with extensive physical, biological, digital, and educational implications. It is in this age that we now are witnessing hyper-accelerating advancements in robotics, mobile supercomputing, artificial intelligence, drone technology, autonomous vehicles, and much more. Similarly, in education, after just two decades of Web-based learning, we have entered the fourth phase or wave of e-learning. Interesting, each of the four waves of e-learning have come exactly seven years apart.

First was the establishment of Web browsers and learning portals, brought about by Web search companies like Netscape which was founded on April 4, 1994. Seven years to the day later, MIT announced the OpenCourseWare (OCW) movement on April 4, 2001 and the age of open education was spawned. Another seven year span resulted in the first massive open online courses (MOOCs) in 2008. Now we enter the fourth phase of e-learning involving the personalization of e-learning. This is the age where experts and peers from around the globe are available for consulting and advice as well as collaboration and project-based forms of learning.

As with the fourth wave of the industrial revolution, there is immense change around the world today related to new forms of learning typically involving technology in the fourth phase of e-learning. In fact, there are three megatrends related to learning technology today: (1) technologies for engagement; (2) technologies for pervasive access; and (3) technologies for the personalization and customization of learning. To better understand these new forms of learning delivery, Professor Bonk will discuss these three megatrends as well as his recent research on the personalization of e-learning. Along the way, insights will be offered into where the fourth industrial revolution bumps into and fuels the fourth e-learning revolution.

Without a doubt, human learning is changing in dozens of ways. There has been no moment in the evolution of the human species wherein learning delivery mechanisms, learning contents, and learning requirements to survive were changing so rapidly. What is clear is that as we head toward the Year 2020, we humans are in the midst of a learning revolution. During the past few years, learning has become increasingly collaborative, global, mobile, modifiable, open, online, blended, massive, visually-based, hands-on, ubiquitous, instantaneous, and personal. And this is just a start!

This is the age of Education (and E-Learning) 4.0 where learning is more informal, resource rich, and self-directed and where learner creation of products is the new norm, often with the use of digital media. Fortunately, we are living in an age of educational resource abundance where passion, play, purpose, and freedom to learn take precedence over the more mind-numbing traditional information reception models of

learning. The instructors and experts whom we meet and interact with along the way are most effective as curators, counselors, consultants, concierges, and cultivators of our learning. And now such mentors, tutors, experts, colleagues, and instructors can appear instantaneously on a mobile device.

Naturally, such new roles require a unique and evolving set of guiding principles. David Merrill had his famous “First Principles” of instruction (e.g., the Principle of Activation, the Principle of Demonstration, the Principle of Application, the Principle of Integration, and the Principle of task/Problem-Centered). Dr. Bonk has his “Learning Activation System Template” or “LAST” principles. Accordingly, in this talk, Professor Bonk will detail a set of 20 “last” principles of instruction including the Principle of Flexibility, the Principle of Meaningful Learning, the Principle of Choice and Options, the Principle of Cheerfulness and Optimism, the Principle of Spontaneity, the Principle of High Expectations, the Principle of Nontraditional Learning, etc. Suffice to say, there is immense change around the world today related to new forms of learning typically involving technology.

Learning is more problem-based, inquiry-driven, self-directed, and immersive. It is also increasingly digitally rich, touch-sensored, flipped, synchronous, immediate, on-demand, competency-based, game-like, communal, and so much more. In such transformational times, the role of the instructor or teacher is no longer as firmly cemented in the direct instructional and authoritarian past. Today, savvy instructors are at times a coach and cultivator of talents, and, at other times, a concierge, orchestra conductor, or curator finding the golden nuggets from the open educational world and offering learners a diverse and exciting array of learning paths and opportunities. Still other times, the instructor offers timely scaffolds and sage guidance as an on-demand consultant or counselor. There is also the increasingly vital role of course ambassador who excites the world into an emerging idea, event, or concept, or perhaps an entire course, program, or discipline through a massive open online course or “MOOC.”

This talk will attempt to sort through many of these trends and transformations in learning as a means to push our thinking about what the near and far future holds for us humans in terms of where we learn, what we learn, and who we will be learning with. Such exciting times call for exciting talks.