

# **What is the State of E-Learning? Reflections on 30 Ways Learning is Changing**

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## **Abstract**

This paper is based on a keynote talk delivered at the annual DEANZ Conference at the University of Waikato in Hamilton, New Zealand in April 2016. As highlighted in that talk, we have entered Education 3.0; an age filled with vast resource abundance and extensive opportunities for learner empowerment. During the past decade, there have emerged at least 30 different ways in which learning is changing; for instance, it is becoming increasingly collaborative, global, mobile, modifiable, open, online, blended, massive, visually-based, hands-on, ubiquitous, instantaneous, and personal. These 30 learning and technology-related changes reflect three distinct “mega-trends;” namely, (1) learner engagement, (2) the pervasive access to learning, and (3) the customisation and personalization of learning.

## **Introduction**

In this think piece, I will muse on the 30 ways learning is changing since my initial visit to the University of Waikato in Hamilton, New Zealand for an e-learning summit in April 2002. Back then, I gave an invited presentation entitled “There’s no learning in e-learning.” That particular talk highlighted the fact that prior to the dot-com crash of 2000-2002, e-learning vendors were loaded with cash but had little to offer in terms of products. E-learning instructors, in turn, were shovelling up content that they had used in face-to-face classrooms directly to their Web-based courses without making any significant changes or adaptations. As a result, there was limited learning taking place in e-learning environments.

After revisiting that the University of Waikato for the annual DEANZ Conference exactly 14 years later (i.e., April 2016), I am intentionally taking a moment here to reflect on the state of learning in this fast evolving digital age. During the ensuing years, dozens of assorted learning and technology related trends have somehow, though not totally unexpectedly, started to coalesce. Learning has increasingly become more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, and so much more.

# From Plato to My Grandfather

Given the changes taking place over the past 14 years, it is not too surprising that the world of education is a profoundly different experience for learners today than back in 2002 when e-learning was still in its' infancy. It is even more markedly changed from the learning world in which my Grandpa George experienced in traditional classroom settings. Keep in mind that my grandfather went to school near the turn of the previous century. It is also worth noting that he didn't go to school much beyond the primary level. In fact, Grandpa George told me once that he walked into his high school and kept walking through it and went out the other side, never to return. What is clear is that, my grandfather, like a lot of others of his generation, went into the work world almost immediately after primary school.

Like my grandfather, who was born in 1907, the fabled Rip Van Winkle would not be able to wake up from his long sleep and recognise the tasks and activities that take place in many schools of the 21<sup>st</sup> century. Nor would Plato recognise the academy that he started and the various forms of blended and online learning that now take up so much energy and attention. Too much has changed or is in the process of changing. The old joke that Plato or Socrates could be reborn today and not recognise much of anything in society except schools no longer holds. As detailed in much of the remainder of this article, the forms of learning that take place in schools and universities has been transformed in dozens of ways. Though books and lectures still exist, human quests to learn and the resources that support them in such learning missions are vastly different.

Those jokes about schools not changing merely concern what is possible within a classroom. Today so much is possible well beyond it. Global forms of collaboration might have been possible back when my grandfather entered school in 1912, but not to the degree, speed, and pervasiveness to which it occurs today. Instead of using postal mail, the telephone, or the telegraph, students in 2016 can send emails, text messages, blog posts, Facebook chats, and Instagrams to friends as a reminder of an assignment that is due or perhaps to ask for advice on recommended resources or learning technologies. They can even use a Webcam to personalise the discussion. Or they might write a paper as a team using an online collaborative tool which allows them to work on the same document at the same time. Their concerns and questions can be inserted as voice or text comments and annotations. And if they are really ambitious, they might later submit that paper as a chapter in a collaboratively written wikibook or resource with others around the world (Bonk, Lee, Kim, & Lin, 2009; Lin, Sajjanroj, & Bonk, (2011).

Today, thanks to Web technologies, education is open, global, and highly collaborative. I am fairly certain, however, that my grandparents did not collaborate with anyone in their classes outside of the greater Milwaukee area where they grew up. The same is true for my parents as well as most of those I grew up with many decades later. Times have changed. There is a

revolution underway in education. Today, learning is more visual, blended, game-based, immersive, digital, comfortable, modifiable, and personal. And that is just the start.

While teaching methods that incorporated aspects of coaching, problem-based learning, and simulations may have resonated with my Grandpa George and his classmates a century ago, such progressive approaches to instruction were not as readily employed or accepted. Part of the reason is that the skills needed in those times included having a storehouse of factual knowledge, as well as being able to follow rules and listen obediently and quite passively. And passively learn they did. In contrast, today's learners need enhanced problem solving, creativity, and decision-making skills. To accomplish such goals, education is in need of a wholesale transformation.

We can no longer suggest to today's educational leaders that they should be happy providing the education that they, in fact, had received (Grant, 2016; Wagner & Dintersmith, 2015). That would not even get someone a job washing dishes. The real world is far too technologically sophisticated. It requires creativity and innovation (Gilbert, 2015; Kaufman & Gregoire, 2015; Wagner, 2012). In contrast to relying on well-structured and traditional forms of education, the open educational world of 2016 allows for learning to be more informal and on demand. Learners can be spontaneous and personally engaged in their learning pursuits. Learning can now be sought out when and where needed. And, fortunately, much of it is free.

### **Learning is Changing**

When I returned to the University of Waikato in April 2016, one thing was obvious—the previous roads and pathways to learning that the human species had travelled down for centuries have been permanently disrupted. Learners are demanding greater opportunities for play, purpose, passion, and freedom to learn when, where, and how one prefers (Duckworth, 2016; Wagner 2012). The role of the instructor has been transformed as well. No longer are instructors simply delivering content to awaiting learners and managing credits completed. The traditional reception models of learning have given way to notions of instructor as concierge, cultivator, consultant, counselor, and curator of knowledge. These new roles take precedence over the more mindless and rule following past.

This is the age of Education 3.0 where learning is about playful and highly engaged design and where learner creation of products is the new norm, often with the use of digital media. We humans tinker, invent, and find unique ways to express ourselves. In Education 3.0, instructors attempt to foster learner autonomy and self-directed learning pursuits by guiding and mentoring their learners (Keats & Schmidt, 2007). And rather than the closed walls of previous centuries of learning, there is an openness surrounding the learning experiences of Education 3.0. Resource availability is emphasized over preserving and dolling out limited educational resources. However, Education 3.0 is not simply an acknowledgement of greater resources; instead it is a bold pronouncement that the learning age we are living in is a much different place from anything ever experienced on this planet.

## **How Learning is Changing: Mega Trends of 2016**

There are dozens of ways that human learning has been changing during the past few years. In the paragraphs that follow, I briefly detail 30 of them in three different, though not entirely distinct, sets of 10 each. I will label these “mega-trends.” The first set of mega-trends relate most directly to learner engagement. The second group involves pervasive access to learning. And the third collection of mega-trends concerns the customisation of learning.

# **How Learning is Changing: Mega Trend #1. Learner Engagement**

Learner engagement is a key concern across all educational sectors today. Fortunately, a wide array of learning technologies have arisen to meet to offer new opportunities for fostering greater learner involvement and concerted effort in the learning process. As an example, nearly everyone reading this article has likely used a mobile device to learn something new that interested them in the past 24 hours, if not the past few minutes.

**Change #1: Learning is more Mobile.** As I mentioned at the DEANZ conference in April 2016, among the changes we see at each moment of the day is that learning is accessible at any moment. Our smartphones, laptops, tablet computers, and now smartwatches equip us with access to a brimming pot of educational resources unlike no other. In effect, the first change that I need to mention is that learning is much more mobile or portable than before. The devices we carry are smaller and yet sturdier than back in 2002. Some people even rely on their watches for their learning pursuits (Baig, 2015). Many believe that as we humans increasingly rely on mobile, we lose our social relationships. Nevertheless, mobile devices let us extend the place, pace, and inherent space of learning.

**Change #2: Learning is more Visual.** As can be seen in most formal and informal educational settings today, learners increasing are learning in a visual manner as opposed to text-based learning. Gigantic video walls are found in many teaching and learning centres, classroom buildings, learning demonstration centres, and conference entrances today.

**Change #3: Learning is more Touch-Sensored.** Along with this change, the learner can often touch or swipe at a screen to access various content. Learning is more haptic and, in the process, reliant on gestures and being touch sensory. Living in an age of pervasive video that you can select or deselect with a simple touch of a screen bringing immense power to one’s fingertips and hopefully some agility with our minds.

**Change #4: Learning is more Game-based.** Along with the rise of video-enabled learning, people are begging for learning activities to represent what they tend to do outside of class. Often such activities involve games. It is not surprising then that researchers and educators are exploring how games can impact the learning process in a positive manner. The gamification of learning involves such techniques as points, badges, and other rewards as well as leaderboards, learner control, enhanced sense of interactivity, levels of progress, challenges and goals, competition, and discovery (An & Bonk, 2009; Legault, 2015).

**Change #5: Learning is more Immersive.** What is also clear from the gamification movement is that learners want to be immersed in their learning pursuits. Both augmented and virtual forms of learning support learners in such immersion (Cohen, 2016; della Cava, 2015a, 2015b). Augmented reality equips learners with a “super power” to see data and information superimposed over an object. Virtual reality allows the learner to feel or experience an event or situation as if one were actually there (della Cava, 2016); such as what it is like to be homeless or a minority or an individual with special needs. Such technology is intended to help with empathy and perspective taking.

**Change #6: Learning is more Collaborative.** Another learning engagement trend relates to working with others on online projects. As shown in a national research project by my colleagues in I over a quarter century ago, online collaboration and teaming had its’ roots in the early 1990s (Bonk, Medury, & Reynolds, 1994). With the continued emergence of technology tools for collaboration today, including Google Docs, Pirate Pad, MeetingWords, Google Hangouts, Skype, Zoom, wikis, and other forms of document and social exchange, there are immense opportunities for learners to socially interact and share ideas and knowledge. Learner progress can be shared instantly with a work team as a means to gather feedback and alternatives. In effect, collaboration is no longer of a local variety, but extends to potential team members located in any corner of the planet.

In *Shared Minds: The New Technologies of Collaboration*, Michael Schrage (1990) chronicled his journeys across the U.S. in the late 1980s to find and document collaboration and communication tools. During the journey, Schrage discovered that like the napkin or piece of scrap paper, the most promising technologies were the ones that created a mental “shared space.” Online communication and collaboration tools promoted new forms of social interaction and productivity. As learners find common ground or exchange shared thoughts, they can more readily negotiate their ideas, as well as build new knowledge or products. When successful, electronic conferencing and collaboration tools open up avenues for such learners to take the perspectives of other people and appreciate their expectations and reactions. Given the various global tensions today, it is hard to argue against that.

Back when I was an auditor and later a corporate controller in the 1980s, we accountants worked fairly solo all day. Today, people in business collaborate so often it has become the norm. And their collaborative partners are not down the hallway or at a branch location in the same city,

state, or country. Instead, one's partners are in Pretoria, Singapore, Rome, Reykjavik, and Shanghai and available for feedback and support within seconds.

It is rare for a document to be externally shared without it first being crowdsourced and then evaluated and modified by a team of experts. And if one works in a small company, that document will be reviewed by nearly everyone who works there. An advertisement in a training magazine a decade ago had a man holding up a picket sign that read "Collaborate or Die." Collaboration is the new standard of excellence for information management professionals and chief information officers. The same holds for all educators and training professionals. Collaboration tools will continue to emerge and morph in innovative ways during the coming decade. Learning teams will form and function in parallel with work-related needs. Records of learning will be shared, added to, augmented, and critiqued.

**Change #7: Learning is more Social.** Parallel to the emergence of collaboration technology is the notion that learning is more social. The Russian psychologist Lev Vygotsky (1978, 1986) long ago argued that learning was first a socially interactive process. From this perspective, what is learned on an interpsychological plane is later appropriated and internalized on an intrapsychological plane. Social media such as Facebook, Twitter, Instagram, and Pinterest in North America, Kakao Talk in Korea, and QQ and WeChat in China are prime examples of how such sociocultural principles are now commonly instantiated in our social media activities. Suffice to say, learning is more social for all of us since 2002.

**Change #8: Learning is more Digital and Resource Rich.** Quests for more engaging online education are now possible, in large part, since we have entered a time wherein learners have immense digital resources to learn from and share. They can learn from video, text, audio, and other forms of learning contents. Instructors and learners can select from various media and learning formats for content delivery including animations, simulations, video lectures, canned tutorials, PowerPoint slides, audio recordings, maps, timelines, guide sheets, and so on. The problem today is not the lack of resources, but the inability to find the resources appropriate for one's needs. Of course, timely curation and sage advice of resources from instructors becomes increasingly important in such an age.

In these times of resource abundance, new ways to blend often appear in the blink of an eye. When scientific findings are reported by major news networks like the BBC and CNN (e.g., Smith-Spark, 2015), there are often more detailed announcements from the lead scientists themselves or simultaneously published research articles in prominent journals like Nature (Haile-Selassie, 2015). What is clear is that learning is increasingly available in a digital format and it is research rich.

**Change #9: Learning is more Adventurous.** Another aspect of learner engagement is inquiry-based learning and learning adventure. Professor Aaron Doering at the University of Minnesota exemplifies this change in learning more than anyone that I know. He can just as easily be found

in the Arctic tundra as in one of his graduate seminars in Minneapolis or St. Paul. Doering's professional website, Chasing Seals (<http://chasingseals.com/>), documents his journeys around the planet generating highly engaging K-12 resources like the Polar Huskies project, Geothentic learning, Earthducation, and North of 60 (Doering & Veletsianos, 2008; Miller, Veletsianos, & Doering, 2008). Every one of these projects and activities is unique. And each actively engages learners in schools throughout the world as they track and interact with explorers, researchers, educators, and others. Suffice to say, wherever humankind has traversed, learning is soon to follow.

**Change 10. Learning is more Hands-on.** The proliferation of maker spaces and labs in schools and universities is a sign that learning is more hands-on today than ever before (Meyer, 2016). Learners want to tinker, design, and make something tangible. While I was completing this article, in fact, the Obama administration unveiled several new initiatives as part of a "National Week of Making" (Chang, 2016). As part of such efforts, school districts around the United States were embracing this movement with maker labs and projects.

## How Learning is Changing: Mega Trend #2.

### Pervasive Access

The next set of 10 learning and technology trends relates to the fact that humans can increasingly access learning anyway and anytime. It is perhaps this notion of pervasive access to learning and education, more than anything else, that has educators, politicians, and learners themselves adopting a more optimistic outlook when it comes to the human race.

**Change #11: Learning is more Online.** Underpinning many of the first ten ways in which learning is changing is the fact that learning is increasingly occurring in online settings. Whether you are interested in school-based learning, higher education, or corporate training, the enrollment numbers are often staggering (e.g., Allen & Seaman, 2013, 2015). Whereas online continues to grow by 5 or 10 or 20 percent per year, on ground (i.e., face-to-face) instruction remains flat or merely edges up 1 or 2 percent. Clearly, learners of the 21<sup>st</sup> century enjoy the flexibility and convenience of online instruction. Not only is the growth of online learning connected to the first 10 changes mentioned above, it is also linked to everything below.

**Change #12: Learning is more Video-based.** A key part of the pervasive access to education is the fact that learning has become more video-based. With the increase in storage capacity and bandwidth as well as decreasing storage costs, we can accumulate more video content on the Internet. With YouTube, TED Talks, the Khan Academy, and so on, we have quickly moved from an age of Wikipedia to Videopedia.

**Change #13: Learning is more Global.** Pervasive access to learning is highly apparent when engaged in global forms of education. Recently, someone coined the notion of the “Skype classroom” (Shea, 2015) where teachers find unique projects and people to connect their students to; often on a weekly basis. Today, it is increasingly common to bring in experts from around the planet for live cultural demonstrations, discussions, and reflections (Lee & Bonk, 2013). This change in learning is actually a key part of why I quit my job as an accountant and CPA and went to graduate school—to enhance learner perspective taking. Impacting the social cognition of learners around the planet is perhaps the one learning change that will have the most impact.

**Change #14: Learning is more Immediate.** What is apparent is that learners no longer have to wait three or four years for a scientific finding to enter into course content. Instead, young learners in schools often are learning about new discoveries, scientific techniques, and inventions at the same time that most experts are hearing about them. Technologies like Google Glass exemplify the instantaneous nature of learning and discovery. In effect, science is now immediate. Such immediacy not only engages learners in the lesson or unit, but can spark future interest in STEM fields as a career option (Bonk & Khoo, 2014).

**Change #15: Learning is more Direct from Experts.** Another momentous change in learning is that experts can appear directly where and when needed. Learning is now direct from experts without the need for an accredited middleman. No longer must one sign up for a live class or training program to find expert advice or mentorship. Now a person can turn to Web resources like Noodle, Udemy, and the Expert Café to locate an instructor or mentor in an area of interest. One can also use video resources at the Khan Academy. Want to learn how to play a guitar? There are many instructors and courses available at any of these sites. Instructors can even be found on your mobile devices as you sit in a subway or take a rest while climbing a mountain.

**Change #16: Learning is more Synchronous.** Such experts can also appear in real-time or synchronously. During the past decade, the cost of synchronous or real time technology has decreased significantly while storage capacity has shot up. For more than a decade, we have become accustomed to taking webinars via synchronous conferencing systems such as Blackboard Collaborate, Adobe Connect, GoToMeeting, WebEx, etc. Today, there are dozens more such tools including Zoom, Skype, Google Hangouts, and others. Reaching out to an expert through real-time technologies is quite commonplace. And now instructors often supplement their courses with optional synchronous experiences where learners might meet students previously enrolled in the course, book authors, researchers, and leading experts.

**Change #17: Learning is more Open.** There remain at least four more ways in which learning has changed during the past few years in terms of pervasive access. First of all, learners as well as instructors have greater access to open educational resources (OER) and open courseware (OCW) from other institutions (Carson, 2009; Caswell, Henson, Jensen, & Wiley, 2008). Whether one is a yak herder in Tibet, a researcher studying the water flow in the Arctic, a young child living in an orphanage in Mongolia, or an 80-year-old retiree in Texas attempting to obtain



a college degree, open access to educational contents can change your life (Mangan, 2012). Those are just a few examples of life impact from open education. As these cases indicate, the learning world has become increasingly open during the past decade (Bonk, 2009). Still, there are concerns about faculty member awareness and use of such open educational resources for learning (Allen & Seaman, 2014).

**Change 18: Learning is more Free.** Openness is a key part of the equation to greater access to educational contents. But openness is not enough. Extensive amounts of learning content must also be free for education to truly be transformed. As an example, OpenStax brings free textbooks to secondary and college students (Nagel, 2014). From a personal standpoint, I have added to the free and open learning catalog by offering a digitally available book on online motivation and retention (see <http://tec-variety.com/>) as well as 27 free video primers for teaching online and a free and open MOOC on this same topic.

**Change #19: Learning is more Informal.** Given the wealth of resources available today and the constant need for upskilling and reskilling, it is not too surprising that most of our learning has shifted from formal educational settings to informal ones. A decade ago, Jay Cross (2007) posited that informal learning had already risen to a point wherein more than 80 percent of learning was accomplished outside of formal educational settings. Today, we gather our health, finance, travel, legal, cultural, and political information from online sources rather than traditional textbooks and instructor-led classes. As my recent research illustrates, people often find pleasure when they can search for and uncover needed information on their own, rather than rely on an expert (Bonk, Lee, Kou, Xu, & Sheu, 2015). Wikipedia, CNN.com, YouTube, TED Talk, and the Khan Academy are just the start. Here in the age of Education 3.0 informal learning continues the shift in the balance of power from instructors and textbooks to the individual learner.

**Change #20: Learning is Ubiquitous.** As online and blended learning as well as informal and mobile learning have become commonplace, learning is simply more pervasive. Recently, there has been a push for the development of new technologies (e.g., drones flying above and high pressure balloons) that will enable those in rural parts of the world to enjoy greater Internet access. There are also technologies that help send contextualized information and signals to one's mobile devices (e.g., the iBeacon). In the coming decade, we will likely enter an age wherein the Internet is available wherever human presence exists on this planet. This is the age of ubiquitous computing. As members of the learning century, such pervasive access is essential for our very existence as well as our continued evolution as a species.

That wraps up the second set of ten learning-related trends from my talk in April 2016 in Hamilton. While many of these trends and changes are quite exciting for learners and instructors alike, it is perhaps the final set of 10 that is currently receiving the most media attention.

# How Learning is Changing: Mega Trend #3.

## Customisation

Finally, we are in the midst of an age of learning customisation and personalization. This is described below with ideas about how to blend our learning pursuits as well as ideas about self-directed learning.

**Change #21: Learning is more Blended.** As the learning resources continue to expand in virtual spaces and the forms of delivering content do as well, instructors and instructional designers are increasingly embracing blended forms of learning. We can combine face-to-face and online experiences in unique ways to take advantage of these enhanced resources as well as expert availability and accessibility to guide one through them. Today, nearly all instructors, from those in elementary and secondary schools to college to corporate training, are relying on some type of blended learning experience to enhance, extend, and perhaps even transform their classes. As Barbara Means and her colleagues at Stanford Research Institute found out in their meta-analysis of the literature on online and blended learning, blended is often the best option (see Means, Toyama, Murphy, Bakia, & Jones 2010).

**Change #22: Learning is more Self-Directed.** As learning resources shift from formal to informal contexts, learners are becoming accustomed to initiating their own learning. Self-directed learning is becoming the norm, rather than the exception. The problem is that most learners have been taught in an educational age which was teacher-dependent. Consequently, millions of people are accessing online learning environments without the skills necessary to learn on their own. There is a dire need for greater research and frameworks or models of self-directed online learning (Song & Hill, 2007) In response, some of my own recent research has shown that learners aspire for environments rich in resources, learner freedom, choice, control, fun, and personally driven goals (Bonk et al., 2015; Song & Bonk, 2016). As we enter the age of Education 3.0, there will be increasing opportunities for learners to assume more control over their personal learning pursuits.

**Change #23: Learning is more Competency-based.** Another sign of these transitional times in adult education is the intensifying call for competency-based education (Berrett, 2014). In such an approach, learners can obtain credit for what they know (if they can successfully pass the requisite exams), instead of sitting through lectures on material that they already have mastered. In our present climate of increasing educational costs and mounting needs for lifelong education, such a change in learning opportunities is potentially transformative for higher education. The result of such changes is that a college education is no longer something that strictly takes place between the ages of 18 and 22 years old.

**Change #24: Learning is more on Demand.** In such an age, learners want access to learning resources, tools, and experts where and when needed. In effect, to function effectively in this

world, learning must be on demand. Given that universities often cannot react fast enough to new learning goals and expectations, companies like Coursmos have sprung up to fill in the gaps. Coursmos uses its more than 50,000 video lessons to create thousands of micro-courses, typically of extremely short durations of under 3 minutes (Wikipedia, 2016). As such, it is part of the micro learning movement (Lomas, 2013).

**Change #25: Learning is more Massive.** Much of this recent emphasis related to learning being more on demand and modular is highly linked to the emergence of massive open online courses or MOOCs (Bonk, Lee, Reeves, & Reynolds, 2015). Without a doubt, the growth of MOOCs over the past several years from just a few of them back in 2011 to over 4,000 MOOCs in spring of 2016 has been incredible (Online Course Report, 2016). Recent data from Class Central indicates that more than 35,000 million people signed up for at least one MOOC in 2015 and more than 570 universities were engaged in offering them (Shah, 2015; Wexler, 2015). In terms of class size, one study found a median enrollment for MOOCs of nearly 43,000 learners (Ferenstein, 2014). Given such data, it is clear that learning is much more massive than what transpired a mere decade ago.

**Change #26: Learning is more Modular.** Paralleling this rise in MOOCs and on demand learning is the recent push for micro credentials or nanodegrees (Waters, 2015). Young people as well as more experienced adults see the value in obtaining a credential that translates into well-paying jobs such as a Web developer, creative writer, digital marketing expert, big data analyst, Python programmer, graphic designer, mobile applications developer, and so on (see specializations from Coursera, Coursera Blog, 2016). The time to payoff in these specializations is typically much shorter than found in most higher education paths. Not too surprisingly, unique partnerships are being formed between corporations (e.g., AT&T, Google, etc.) and universities (e.g., Arizona State University, Georgia Tech; e.g., DeMillo, 2015) and other educational entities (e.g., the Khan Academy, Udemy, Udacity, and Coursera). In the process, a badge or certificate might be offered to someone as a sign of competence. At the time of this writing, the U.S. State Department formed a unique partnership with Coursera to offer MOOCs to refugees for free for one year including certification options (Camera, 2016). It is likely that in a couple of decades the vast majority of people on the planet will learn in this fashion on a regular basis.

**Change #27: Learning is more Communal.** As mentioned earlier, much of learning today is social in nature. In response to the sheer size of MOOCs, there has been a recent trend to create spaces wherein people can meet to discuss their learning within the MOOC. Coursera, for instance, has created “learning hubs” (Coursera Blog, 2014) which enable those enrolled in a MOOC to meet with one or more instructors or content experts as well as fellow peers. In this way, learning becomes more connected and blended. As an example, based on extensive travelling to meet his MOOC participants around the globe, Charles Severance (2015) from the University of Michigan argues that only in this way can the MOOC instructor ever really get to know the participants in the course. The communal aspects of learning today can be found in the

sharing taking place in MOOCs (Kim & Chung, 2015) as well as in collaborative documents (mentioned earlier) and MOOC-related meet-ups and events.

**Change #28: Learning is more Modifiable.** We members of the “learning century” or learning age are beginning to make new demands on the spaces in which we learn (Kim & Chung, 2015). Today, learners demand to rearrange their learning spaces to approximate their informal spaces such as that in a café or lounge. Simply put, they want their learning spaces to be more modifiable and, in effect, more comfortable than ever before.

**Change #29: Learning is more Flipped.** As video storage has increased, learning has become more flipped. Instructors can employ video content in unique ways that allow their learners to watch the lecture before class and then come to class for problem solving, case-based learning, and other interactive exercises.

**Change #30: Learning is more Personal.** Finally, there are currently many advocates of personalise learning. With the wealth of learning resources now available, there is a growing need to personalise the learning process. Such personalization will not come easy. As someone who is currently leading a research project on the personalization of MOOCs, I realize that it is a difficult concept to define and assess. To help in these efforts, my team and I currently have defined the personalization of a MOOC as, “How you adapt your course and teaching to meet students’ individual learning needs.”

That is a quick walk through 30 trends in human learning with technology today. In part, these learning trends relate to greater engagement of learners; i.e., learning is more mobile, game-like, collaborative, adventurous, and hands-on and much more. At the same time, various technology innovations have provided us with pervasive access to education; i.e., learning is more free, global, open, and online. Finally, many recent trends highlight the need toward greater customisation of learning. In this third set, we saw that learning is much more blended, competency-based, self-directed, massive, flipped, and personalised. It is these three mega-trends of enhanced learner engagement, pervasive access, and customisation of the learning process that offer much hope for a better learning tomorrow. And, given the novelty of these learning technologies, this is just a starter list.

## Recap and Reflection

Such is the state of e-learning in 2016. There is no longer “no learning in e-learning” as was the case 14 years ago. The human condition has dramatically changed, hopefully for the better, since my first sojourn to New Zealand in 2002. Remember my difficulties defining the state of e-learning back then? Now we can just call it “learning” again without the silly “e.”

Importantly, it's unlikely that these 30 changes and trends will fade any time soon. In fact, any of these 30 trends could have been the focus of this entire article. What remains clear is that learning for all of us has changed. It is dramatically different not just at the University of Waikato, but at nearly every learning station, hub, or centre. Needless to say, it is markedly different from the types of learning available to those of us attending school back in the 1970s, 1980s, and 1990s and even more jarringly different from what my grandfather encountered more than a century ago. There will undoubtedly be many more such learning trends and technologies emerging in the coming decade to enhance, extend, and transform your learning.

What is clear is that learning is now in a state of significant flux. During this flux, we have entered the age of Education 3.0. It is a time for instructors to give voice to their learners and to grant them multiple opportunities and pathways to learn. As this occurs, learning in the remaining decades of the 21<sup>st</sup> century will be full of exciting ways to personalise learning and the learning process. In the process, more intelligent forms of technology will enable greater use of adaptive forms of instruction and associated learner feedback on performance.

As part of this effort to create personalised and adaptive learning, the learners themselves will be able to instantaneously share their learning pursuits and setbacks with experts around the planet for their keen observations, candid encouragement, and sage advice. The state of learning at that time will be more emotionally rich, cognitively impactful, physically unending, and volitionally transformative. I definitely look forward to such an age. I also anticipate with great pleasure my revisit to the University of Waikato in the Year 2030. I will be most delighted if I get an opportunity to offer my views on the state of human learning at that time whether it be on a radio or television program, or during a conference or summit.

Note: The video recording of Curt's keynote speech given during the DEANZ2016 conference on 18<sup>th</sup> April 2016 is accessible at: <http://goo.gl/F2DMU3>

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