# Pedagogical Disruption then Construction

Sandra Bassendowski, April Mackey, and Pammla Petrucka

University of Saskatchewan

4400- 4th Avenue, Regina, SK Canada S4V 2V2

s.bassendowski@usask.ca

**ABSTRACT**

Traditional approaches to education are evolving in order to improve student engagement in course content and enhance learning outcomes. The image of students passively absorbing information from an educator who is lecturing from behind a podium does not reflect the current scope and dimensions of higher education. In many post-secondary institutions, students are encouraged to participate, engage, and collaborate with educators and peers in the design, development, and delivery of educational content for blended environments. The use and integration of exciting new technology enable educators to disrupt traditional learning experiences by breaking down the status quo that characterizes many teaching and learning spaces and then recreating or (re)constructing teaching approaches that meet the learning needs of today's students. Although this article includes the description of a research project that was conducted in a blended environment as a disruptive strategy, the article is primarily an expository piece around the need for disruptive pedagogies in post-secondary institutions and for construction of new philosophies and practices of teaching from theory, policy, and innovation.

**KEYWORDS**

Disruption, technology, teaching, learning, strategies

## 1. INTRODUCTION

Traditional approaches to education are evolving in order to improve student engagement in course content and enhance learning outcomes. The image of students passively absorbing information from an educator who is lecturing from behind a podium does not reflect the current scope and dimensions of higher education. In many post-secondary institutions, students are encouraged to participate, engage, and collaborate with educators and peers in the design, development, and delivery of educational content for blended environments. The use and integration of exciting new technology enable educators to disrupt traditional learning experiences by breaking down the status quo that characterizes many teaching and learning spaces and then recreating or (re)constructing teaching approaches that meet the learning needs of today's students. Disruptive technologies are not going away any time soon. Kirschner [1] states that "You would have to live under a rock not to know that crushing student debt, declining state support and

disruptive technologies have made it imperative to look at new models for teaching" (¶15).

## 2. DISRUPTIVE PEDAGOGIES

By definition, "pedagogy is leading people to a place where they can learn for themselves. It is about creating environments and situations where people can draw out from within themselves, and hone the abilities they already have, to create their own knowledge, interpret the world in their own unique ways, and ultimately realise their full potential as human beings" [2]. Bass [3] uses the term "disrupting ourselves" to advance an argument that the key source of disruption is generated by our own practices, "…from the growing body of experiential modes of learning moving from margin to centre, and proving to be critical and powerful in the overall quality and meaning of the undergraduate experience" (p. 24).

In the educational context, disruptive pedagogies originate from the introduction of radically new technology into higher learning that deviates significantly from the traditional teaching standard [4]. Terms that have been used interchangeably with 'disruptive pedagogy' in the literature include "disruptive innovation", "disruptive technology," and "pedagogical innovation" [5] [6]. Historically, disruptive pedagogies are evident in the implementation of the computer in the 1950s to, most recently, the creation of online learning tools such as blogs, wikis, and podcasts to mobile devices such as smartphones, iPads, and laptops [4] [7].

The initial concept of disruptive innovation in higher educational learning began with Christensen's theory of disruption [8]. Christensen's theory of disruption provides researchers and policy makers with an alternative perspective with which to view more accessible and newly emerging technologies and innovations in any setting. While originally only applied to business models, this theory is uniquely capable of advancing pedagogical change in all educational contexts. Christensen et al. [8] and Meyer [4] believe that this theory and the disruptive innovation that follows are changing educational settings across both undergraduate and graduate programs. Educational institutions have a diverse student population that will invariably benefit from the implementation of disruptive innovations and that "…for disruptive innovations to flourish, they must be packaged in a way that delights customers whose alternative is nothing at all" [4, p. 31]. For example, online distance learning benefits those who are unable to travel to attend university or pay the cost of leaving home to attend a post-secondary institution.

The term disruptive has both negative and positive reactions [5] [9]. For example, Shovein, Huston, Fox, and Damazo [10] suggest that technology can disrupt the normal development of classroom relationships, leading to less autonomy and loss of identity for both student and educator (p. 341). The initial emergence of such technology as smartphones or iPads alters the already established

flow of student/teacher interaction, thus creating a disruptive environment. According to Oblinger [9], that same disruption can be transformed into intentional design, creating an empowered environment for both student and educator. This process requires critical thinking, an open mind, and continuous mutual communication between students and educators. To transform these potential interruptions into positive pedagogical change, educators must reflect on the most appropriate technological tools to use for improved teaching and learning.

The ubiquity of wireless mobile devices and other technological educational tools have the potential to act as catalysts for pedagogical changes. Students learn while they work on Web 2.0 tools and mobile devices and "collaboratively create, manipulate and share information with the larger community. The teachers' role is to facilitate in the learning process and to consider ways in which they can turn the knowledge the students are gaining into wisdom" [11, Conclusion, ¶2 ]. In this context, technological disruption takes a positive meaning, suggesting advancement in post-secondary education teaching strategies. Similarly, in an article titled "Seeking disruptive leaders in nursing education", the President of the *Nursing Education Perspectives* journal speaks to the need for a radical transformation in nursing practice and education [12]. She states that all nurses must re-examine how leadership and nursing curricula are approached and strive to become a "positive disruptor" (p.4). This speaks to the need for educators and students alike to reflect on current teaching strategies in teaching and learning spaces and implement disruptive technologies to the highest degree.

## 3. TEACHING AND LEARNING SPACES

> "Over the past 30 years educational practitioners have witnessed huge shifts and cycles in the way technology affects teaching and learning. In parallel, teaching and learning strategies have been developed to align with the technology, and both rhetoric and research on the value of these technologies to teaching and learning have been prominent…while the technology has changed significantly, in many ways the pedagogy supporting these innovations has remained remarkably stable" [13, Cycles of eLearning, ¶1].

Changing only the structure of a syllabus or elements of a reading schedule, however, are not sufficient to address the impetus for anytime, anywhere, and any place learning. "Although many constraints about seat time have been removed, students are still held back by the immaturity of available content and assessments. What is needed next is a disruption of pedagogy – the lecture-and-test (direct instruction) pedagogy is an artifact of the days when one teacher imparted facts and knowledge to tens or hundreds of students at once…" [14, ¶4]. Student learning needs to be authentic, have meaning, be experiential, and

connected to what students already know in order for them to engage with new information and content. Tapscott and Williams [15] argue that universities have to move to interactive and collaborative learning environments and toss out the old industrial model of pedagogy. Educators who are committed to disrupting the status quo of traditional education find the ways and means to shift towards constructivist (or other authentic) practices and disrupt pedagogical practices and strategies within their own teaching and learning spaces [14].

"Advances in simulations for training pilots and astronauts, ubiquitous robots and nanotechnology, satellite imagery, and emerging, sophisticated visualized data have provided new opportunities for engaging the public in modern science" [16, p. 72]. As a result of this interest from the public in new technologies, educators are confronted with students who have grown up with technology and have higher expectations about online interactivity, social media, access to education, and participatory cultures [3].

> "Students live in this world of immediate sharing, with cell phones, instant messages, online social networking sites, and games, in a continuing evolution of technology that dominates their lives. The education system used to be the access point for new information and knowledge, now the Internet and social networking technologies offer resources of unparalleled magnitude making information and knowledge gained in classrooms appear outdated" [16, p. 77].

Educators should consider the impact of factors such as the economy, culture of work, societal expectations, creation of innovative jobs, and the physical environment on the future of education. Technology-rich configurable learning spaces, designed for students, empower students to manage their own approaches to study, share, and learn [17]. With encouragement, students can be involved with educators in the design, development, and delivery of course work. For example, students can deliver course assignments through a variety of technology-based options that support networking and sharing of their research through podcasting, videoclips, simulations, digital storytelling, cloud sharing, 3D printing, wikis, blogs, photos, and networking sites. Students can work in small clusters or online groups to access and analyze data and be involved in activities that lead to connections, collaboration, and co-creation of content from their perspective.

## 4. IMPLICATIONS FOR EDUCATORS

So, in 2014, what approaches can educators take to begin the process of disrupting and then constructing new content and creative teaching strategies? What technology and online tools can educators select and use to support their teaching practices? What percentage of time should be committed to innovative strategies in comparison to traditional teaching strategies? Rheingold [18] suggests that "The technologies that we have in our

pockets today are powerful engines for participation…if we want to discover how we can engage students as well as ourselves in the 21st century, we must move beyond skills and technologies. We must explore also the interconnected social media literacies of attention, participation, cooperation, network awareness, and critical consumption" (Interconnection, ¶2).

The new modalities challenge educator-centred assumptions and support the development of student-centred learning experiences. Rather than adopting the view that face-to-face interactions are the best setting for student learning, educators should think about why (and how often) students need to meet in order to achieve the desired learning outcomes, where education can be delivered, and how the tools of technology can support these decisions. Instructional strategies that support student engagement lead to better student attitudes, improvement in students' thinking, improved retention of knowledge, and greater motivation for future learning [19].

> "While the technology continues to develop, change and expand its uses so unpredictably fast, teachers at all levels employing technology to mediate teaching and their learners' learning, need to work on developing a flexible and adaptive pedagogy that suits their teaching philosophies and fits with the teaching and learning environments within which they work. As part of this flexibility and adaptability, we need to examine and reflect on the new personal and learning strategies…" [20, p. 9].

Sims [13] encourages educators to adopt a philosophy that underpins disruptive pedagogies and *transcends* the usual or expected by going beyond conventional instructional tools, strategies, communication, and delivery to construct new paradigms or patterns. Boyer [21] suggests that the scholarship of teaching is "not only about transmitting knowledge, but transforming and extending it as well" (p. 24, italics original) and he challenges educators to focus on the processes of teaching to meet the learning needs of students. Enabling students to think about this disruption such that they consider future implications and possibilities from both an undergraduate and graduate perspective would be part of developing their own value positions regarding technology [22].

## 5. TEACHING EXAMPLE: DISRUPTIVE PEDAGOGY

In 2006, the author of this article took an idea and developed it into an approach that represented a *multi-dimensional, open, digital environments for learning* (MODEL) and promoted the scholarship of inter-connectedness of teaching, learning, and research. The approach is still used in 2014 and is referred to as Concept Capture. Concept Capture is multi-dimensional as it relates to users, tools,

components, places, and spaces. Openness is defined as a way of organizing activities that favors access, innovation, active participation of undergraduate and graduate students, and collaboration. The idea for Concept Capture was built on a disruption of "what was" in the delivery of the course content and moved to an approach of "what could be" by exploring all the software and multi-media tools available to change how content was delivered to students in blended teaching and learning spaces. The Concept Capture approach, similar to what is now known as the flipped classroom, was designed through the collaborative, free-thinking, off-the-wall discussion of a team composed of information technology (IT) personnel, graphic design personnel, students, graduates, and educators. The approach continues to evolve in response to student feedback, team decisions, and the evolving nature of technological tools. Each year, the team reviews new tools, sites, strategies, and apps and asks each other, "What can we do differently this year?"

The revised approach is congruent with intended outcomes for students and is designed to improve the blended teaching and learning experience for students and provide innovative, quality courses that support learning, critical thinking, research, and discovery. The discourse surrounding the use of technology in post-secondary education indicates that it is imperative that sound pedagogical reasons are considered before implementing an approach such as Concept Capture. It is important to consider the impact on students and their need to be aware of why this change in educational delivery is being considered for them. For example, for one strategy, students are introduced to each week's theme for one course through "hover over" photos that depict a series of icons that open to relevant music, text, research, graphics, and links. Students can interact with the various links on the photo as well as add their own research to a choice of photo for other students to explore as part of a co-creation strategy

Students have a choice of tools to access for the information/concepts and the options provide the basis for a working lab environment during scheduled class time. The class time becomes a environment redesigned and reconstructed for case studies, dyad discussions, question quests, and other interactive strategies that require students to share their learning and take responsibility for informing other students about new knowledge. The students are encouraged to add new content as part of a living syllabus for the course, seek new solutions during class time with other students in their group, and add new resources to the theme photos.

Any time an innovative approach is used for the first time with students, it needs to be evaluated as to its efficacy and effectiveness. The research results reflect the students' reactions to the approach and how the approach needs to be continually revised and enhanced for future use. The use of effective pedagogical practices to support development and delivery has been critical to the success of this disruptive and innovative

approach. The approach focuses on the learning context for post-secondary students and educators and recognizes the importance of "learning spaces not places." Educators must work with administrators to ensure that policies keep pace with the changes that are occurring in teaching spaces. Educational research provides evidence about the usefulness of applications, tools, and systems that are used to enhance learning for students in their required learning activities. Re-inventing pedagogy requires the evidence before educators invest in changes in their personal teaching philosophy and practices.

## 6. CONCLUSION

The use and integration of new technology enable educators to disrupt traditional learning experiences by breaking down the status quo that characterizes many teaching and learning spaces and then recreating or constructing teaching approaches that meet the learning needs of today's students. Theories on innovation and educational pedagogy can be used to support the move to new and uncharted models of delivery for post-secondary courses. Very traditional approaches to learning may have been appropriate for a previous economy and generation, but increasingly it is failing to meet the needs for a new generation of students who enroll in universities with very different skills and knowledge and who will enter the global online knowledge economy. A wide array of media and technology is available to create new hybrid or blended forms of teaching and the integration of technology enables educators to create learning experiences that actively and meaningfully pull students into course content. By sharing personal experiences about taking risks in teaching and learning spaces, educators can inspire and influence the philosophy and teaching practices of others. Changing one's beliefs and values about teaching takes time and a commitment to improving the scholarship of teaching. Innovative teaching strategies must also include a research component in order to determine pedagogical significance and value added to disruptive technologies in teaching and learning spaces.

**References**


1. Kirschner, A. A pioneer in online education tries a MOOC.The Chronicle of HigherEducation. Available: http://chronicle.com/article/A-pioneer-in-online-education/134662/ (2008)

2. Wheeler, S.. The meaning of pedagogy. http://steve-wheeler.blogspot.ca/ (2013, ¶3)

3. Bass, R.. Disrupting ourselves: The problem of learning in higher education. *EDUCAUSE Review*, March/April, 23–33. Available: http://www.educause.edu/ero/article/role-disruptive-technology-future-higher-education (2012)

4. Meyer, K. The role of disruptive technology in higher education. *EDUCAUSE Review Online.* Available: http://www.educause.edu/ero/article/role-disruptive-technology-future-higher-education. (2010).

5. Conole, G., de Laat, M., Dillon, T., Darby, J. 'Disruptive technologies', 'pedagogical innovation': What's new? Findings from an in-depth study of students' use and perception of technology. *Journal of Computers and Education, 50*(2), 511-524. Available: http://dl.acm.org/citation.cfm?id=1332307. (2008).

6. Stanley, M.J.C., Dougherty, J. A paradigm shift in nursing education: A new model. *Nursing Education Perspectives, 31*(6), 378-380. Available: http://www.ncbi.nlm.nih.gov/pubmed/21280445. (2010).

7. Rushby, N., Seabrook, J. Understanding the past-illuminating the future. *British Journal of Educational Technology, 39*(2), 198-233. Available: http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8535.2008.00829.x/abstract. (2008).

8. Christensen, C.M., Aaron, S., Clark, W. Disruption in Education. In Devlin, M., Larson, R., Meyerson, J. (Eds.), *The Internet and University* (pp. 19-44). Boulder, Colorado: EDUCAUSE Review. Retrieved from https://net.educause.edu/ir/library/pdf/erm0313.pdf. (2003).

9. Oblinger, D. Disrupted or designed? *EDUCUASE Review, 48*(4). Retrieved from http://www.educause.edu/ero/article/disrupted-or-designed. (2013).

10. Shovein, J., Huston, C., Fox, S., Damazo, B. Challenging traditional teaching and learning paradigms: Online learning and emancipatory teaching. *Nursing Education Perspectives, 26*(6), 340-343. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/16429999. (2005).

11. Crompton, H. How Web 2.0 is Changing the Way Students Learn: The Darwikinism and Folksonomy Revolution. *eleed*, 8. Available: Directory of Open Access Journals. (2012).

12. Halstead, J.A. Seeking disruptive leaders in nursing education. *Nursing Education Perspectives, 34*(1), 4. Available: http://www.ncbi.nlm.nih.gov/pubmed/23586196. (2013).

13. Sims, R. Rethinking (e)learning: A manifesto for connected generations. *Distance Education, 29(*2), 153-164. (2008).

14. Bjerede, M. Disrupting pedagogy- Part 1. *Learning, Learning Innovations, Online & Blended.* Available: http://gettingsmart.com/2013/11/disrupting-pedagogy-pa (2013).

15. Tapscott, D., Williams, A. Innovating the 21st century university: It's time. EDUCAUSE Review,45(1). Available: http://net.educause.edu/ir/library/pdf/ERM1010.pdf (2010).

16. Psotka, J. Educational games and virtual reality as disruptive technologies. *Educational Technology, 16*(2), 69-80. (2013).

17. Joy, M., Foss, J., King, E., Sinclair, J., Sitthiworachart, J. Davis, R. Incorporating technologies into a flexible teaching space. *British Journal of Educational Technology, 45*: 272–284. doi: 10.1111/bjet.12040 (2014),

18. Rheingold, H. Attention and other 21st century social media literacies. EDUCAUSE Review, 45(5), 14-24. Available from http://www.educause.edu/ (2010).

19. Leese, M. Out of class- out of mind? The use of a virtual learning environment to encourage student engagement in out of class activities. *British Journal of Educational Technology, 40*(1), 70-77. (2008).

20. Hoven, D. Designing for disruption: Remodelling a blended course in technology in (language) teacher education. *AU Space.* Available: http://auspace.athabascau.ca/handle/2149/1679 (2006).

21. Boyer, E.L. *Scholarship reconsidered: Priorities of the professoriate*. Princeton: Princeton University Press. (1990).

22. Barlex, D., Givens, N., Steeg, T. Disruptive Technologies: Engaging Teachers and Secondary School Students in Emerging Affordances. *Technology Education for the Future: A Play on Sustainability.* Technology Environmental Science and Mathematics Education Research Centre, University of Waikato, NZ. (2013).