



Applying Transformative Learning Theory to Open Education Essays

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Abstract

Open Educational Resources (OER) adoption is often explained through the lens of diffusion of innovations theory. In this paper, the author argues that the frame of diffusion of innovations theory is insufficient, as adopting and sustaining OER requires transformation of faculty values and beliefs. Transformative learning theory provides a framework for change for faculty adoption of OER. This essay describes diffusion of innovations theory and transformative learning theory and discusses how transformative learning theory provides a useful framework for understanding the shifts in faculty beliefs necessary for OER adoption.

Keywords: open education resources, textbooks

Introduction

The process by which faculty decide to adopt Open Educational Resources (OER) is under theorized. As OER is considered by many as an educational and technological innovation (Ehlers, 2011; Jhangiani et al., 2016; Masterman & Wild, 2011; Perkins, 2011), many have applied Rogers' diffusion of innovation theory or an adaptation of diffusion of innovations theory for educational technology called the "pencil metaphor" to explain this phenomenon (Lane & van Dorp, 2011; Perkins, 2011; Hu, et. al., 2015). Diffusion of innovations theory aims to explain how ideas or products gain adoption over time. However, OER differs from most educational technology innovations, as it has a commitment to social justice principles and equity. A critical approach provides a framework to understanding the shift in beliefs necessary for faculty to adopt OER. Transformative learning theory provides a framework for how individuals shift frames of meaning. The purpose of this essay is to explore the diffusion of innovations theory and transformative learning theory. The author argues that adopting OER requires transformation of faculty beliefs and values, and therefore that the transformative learning perspective should be included in theorizing the adoption of OER.

What is OER?

OER are "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others" (Hewlett Foundation, n.d.). OER has developed as a result of the broken textbook market (Blumenstyk, 2017) and the opportunities of the internet. Textbook costs have increased dramatically, 88% between 2006 and 2016 (Bureau of Labor Statistics, 2016). The cost of textbooks has been posited as one of the costs of higher education preventing students from achieving their degree (Colvard, Watson, & Park, 2018). In the Florida Virtual Campus Student Textbook and Course Materials Survey, 66.6% of students surveyed did not purchase the required textbook, even though most knew it would lead to a poor course grade. These costs are detrimental to student success and particularly problematic for students in traditionally underserved groups (Colvard, Watson, & Park, 2018, p.262). Adoption of OER provides a

way to reduce textbook costs and make college more affordable for students. Decisions regarding course materials are made by the academic units, such as curriculum committees, section leaders, or individual faculty members.

The confluence of publishers drastically increasing the cost of textbooks and the development of the Creative Commons license has led to the creation of freely available, openly licensed textbooks and materials that can be accessed anywhere and at anytime, which represents a paradigmatic shift in education. OER provide a multitude of benefits to students. By their zero-cost nature, students have access to assigned resources. They do not need to worry about purchasing a textbook instead of buying food or putting gas in their car. Students can access these resources wherever they are and whenever they need to do schoolwork. Research shows that students learn as well or better from OER than commercial textbooks (Hilton, 2018). Faculty also reap benefits from assigning OER, as they can be edited, revised, and remixed. This affords greater faculty control of the curriculum, as they can remix materials rather than tied to a textbook and publisher's determination of content.

Diffusion of Innovations Theory

Published in 1962, Rogers' *Diffusion of Innovations* explores how groups communicate and how innovations disperse in a population. Rogers describes subgroups within a population based on how individuals adopt technologies over time. Diffusion is "the process by which (1) an innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system" (2003, p.11). The diffusion of innovation theory also posits that relative advantages, or "the degree to which an innovation is perceived as being better than the idea that it supersedes" (Rogers, 2003, p.212), as it is perceived by adopters. With this knowledge, potential adopters can decide on an innovation. The adoption is a process in which the innovation is accepted or rejected. The categories of adopters within a social system include "innovators," "early adopters," "early majority," "late majority," and "laggards," based on the individual's innovativeness. The theory outlines how the adoption of technology is communicated through a group. Incomplete adoption and non-adoption are not part of the classification. The compatibility of an innovation with the values and beliefs of individuals in the social system influence the adoption rates. Rogers outlines what consists of a relative advantage in an innovation. These dimensions include: (a) social prestige, (b) economic profit, (c) the immediacy of reward, (d) savings of time and effort, and (d) low initial cost (2003). Rogers theorized that within the rate of adoption, there is a point at which it reaches a critical mass. The concept was later expanded into a theoretical framework updated in more recent editions of his text (Rogers, 2003).

Circa 2006, Lindy McKeown (now Lindy Orwin) adapted the diffusion of innovations theory for educational technology and represented it as a pencil. The metaphor has frequently been utilized to describe teachers' adoption of educational technology (Bliss, 2015). The metaphor categorizes teachers as the "leaders," the "sharp ones," the "wood," the "ferrules," the "hangers-on," and the "erasers." The "leaders" are early adopters; the "sharp ones" are observing and learning from the leaders and adopting soon after them. The majority of the pencil is the "wood" —those who would adopt if someone set them up and trained them and kept everything running. The "hangers-on" attend the workshops but don't do anything, the "ferrules" cling tightly to past practice, and the "erasers" seek to undo the work of the leaders. The pencil metaphor adds the ferrules, hangers-on, and erasers to the diffusion of innovation theory. As a strategy, the message of diffusion is that change agents should focus initially on innovators and early adopters. Advocates also encourage each other to not spend energy on ferrules and erasers, but on the "wood" or the majority who would adopt the innovation if it were made easy for them.

The addition of the "hangers-on," "ferrules," and "erasers" creates value judgements that present those who are resistant or erasing that change as wrong. The change leaders reinforce their own feelings of value through the descriptions as "leaders" and "sharp ones." In this taxonomy, individuals are not discussed as conceivably evolving or moving between categories. The use of this metaphor may be even further off-putting to those who have reservations around the use of OER if they believe their peers see them as "hangers-on," "ferrules," or "erasers."

Rogers (2003) contends that new ideas, even with advantages, are hard to get adopted. The diffusion of innovations theory focuses on the rate of adoption and categories of adopters. Rogers' innovation-decision process model describes how an individual moves from learning about an innovation to implementing it and confirming a decision to continue utilizing the innovation. The innovation-decision process model consists of five steps: knowledge, persuasion, decision, implementation, and confirmation. Knowledge is the time at which an individual becomes aware of an innovation. Persuasion is when a positive or negative impression is formed regarding the innovation. The decision point is when an individual accepts or rejects the innovation. The innovation is used during the implementation period and the confirmation is when the individual affirms, modifies, or reverses their decision regarding the innovation.

The innovation-decision process implicitly assumes that educational innovations are products that faculty will adopt if a positive impression about the innovation is formed. Faculty adoption of OER does not typically consist of a relative advantage in an innovation. The dimensions of (a) social prestige, (b) economic profit, (c) the immediacy of reward, (d) saving of time and effort, and (d) low initial cost do not typically apply to adoption of OER (2003). In fact, Jhangiani, Green and Belshaw pose the question of why faculty adopt OER despite the "absence of royalty cheques, prestige, or institutional recognition" (2016).

The focus is on social process of communication as a linear process whereby the individual accepts or rejects the innovation. This assumes a behaviorist perspective in which individuals engage in a social process by modeling and imitating rather than engaging in a reflection. The model does not consider the meaning making associated with adopting an innovation and changing a teaching practice, nor does it allow individuals to evolve within the model. Jhangiani argues the application of the "pencil metaphor," yet applies the caveat, "no matter what theoretical lens one applies to describing OER users, it is important to understand that in practice these individuals may evolve over time and move into a different category" (2017). Applying a theory that allows and even theorizes the transformation of the individual may prove more useful.

Transformative Learning Theory

Transformative learning theory is a critical, constructivist theory of adult learning. This theory explores how individuals understand existing frames of reference and change their beliefs. It outlines a process by which adult learners engage in critical reflection of their beliefs, values, expectations and assumptions. Transformative learning involves perspective transformation, or "becoming critically aware of how and why our assumptions have come to constrain the way we perceive, understand, and feel about our world; changing these structures of habitual expectation to make possible a more inclusive, discriminating, and integrative perspective; and, finally, making choices or otherwise acting upon these new understandings" (Mezirow, 1991, p.167). This can occur suddenly or over time, or termed by Mezirow as epochal or cumulative. Through critical reflection "on the assumptions upon which our interpretations, beliefs, and habits of mind or points of view are based" frames of reference are transformed (Mezirow, 1997).

The stages of transformative learning, as described by Mezirow are:

1. A disorienting dilemma.
2. Self-examination with feelings of fear, anger, guilt, or shame.
3. A critical assessment of assumptions.
4. Recognition that one's discontent and the process of transformation are shared.
5. Exploration of options for new roles, relationships, and actions.
6. Planning a course of action.
7. Acquiring knowledge and skills for implementing one's plans.
8. Provisional trying of new roles.
9. Building competence and self-confidence in new roles and relationships.

10. A reintegration into one's life on the basis of conditions dictated by one's new perspective.(2000, p.22)

Transformative learning theory has been absent from the scholarly conversation of the process of faculty adoption of OER. Yet, it provides a framework that considers the shift in beliefs and values. The existing meaning structures that faculty hold is informed by the traditional arrangement by which faculty have assigned commercial textbooks for decades; their colleagues require commercial textbooks. Fiddler explains “textbooks are “a not-so-hidden cost that often gets a pass because it’s been rooted in college tradition” (2017). By and large, faculty were assigned commercial textbooks when in they were in college and their colleagues assign commercial textbooks as well. Faculty expectation has been that the commercial textbook is superior to anything that is available freely online. To consider moving away from a textbook from a commercial publisher, faculty would need to either fit OER into their existing frame of reference or experience a change in their meaning perspective.

To change a meaning perspective, a “disorienting dilemma” is triggered to begin this process. A disorienting dilemma is “an activating event that typically exposes a discrepancy between what a person has always assumed to be true and what has just been experienced, heard, or read” (Cranton, 2002). Much like this article, many presentations and articles on OER begin with the statistic on the high cost of textbooks. However, the motivation, or trigger, for faculty can vary. Some are dismayed with the textbook offerings, others are looking to incorporate more dynamic pedagogy in their teaching, and numerous faculty are concerned about the rising textbook costs and students’ ability to afford these textbooks. Jhangiani describes his experience in learning about OER as a “red pill moment,” a concept popularized by the movie *TheMatrix*, as a choice between the truth of reality or the bliss of ignorance (Jhangiani, 2016). DeRosa recounts her “professional epiphany” after hearing about OER (Sheridan, 2017). These realizations describe the experience of a disorienting dilemma.

Faculty who adopt OER relate feeling a sense of guilt or shame around the textbooks they previously assigned. As Steven Bell, Associate University Librarian at Temple University, relates, “[Faculty] express guilt about requiring students to purchase a costly textbook, knowing they may cover only a third of the content” (2014). This is the second step of the transformative learning process. Faculty may experience shame regarding past assignation of expensive course materials, or they may fear investing their time in adopting OER when they are tenure-track and worry that it will not be recognized in the tenure and promotion process. These feelings of guilt, anger, fear, and shame are part of a self-examination that prompts a critical assessment of assumptions. There are many assumptions regarding commercial textbooks and OER, enough for the Scholarly Publishing and Academic Resources Coalition (SPARC) to create a mythbusting document to “debunk the top myths about OER in North American higher education” (2017). This addresses the top seven common myths regarding OER, though the document is self-described as not being comprehensive. The topics addressed include that “open” does not just mean free, that all OER are not digital, that OER can be of the same quality as commercial textbooks, that open licensing need not be complex, that OER can be sustainable and have the ancillaries that faculty desire, and that small steps toward OER adoption are valuable at any institution.

The next step of the transformative learning process is to recognize that one’s discontent and the process of transformation are shared. Faculty can feel isolated if they are not aware of others considering OER on their campus. However, there are a number of organizations that provide community support for this process, including SPARC, as well as the Community College Consortium for OER, the Open Textbook Network, OpenStax and others. These organizations offer online spaces, such as listservs and monthly conference calls to provide support for those considering and actively working on OER.

Through steps five, six, seven, and eight, faculty explore their new role, plan a course of action, acquire the skills for implementing the plan, and try out their new role. The faculty receive support during this phase from librarians, instructional designers, and other faculty who have adopted OER. The trainings offered on how to find OER or integrate OER in a curriculum are best aimed at faculty who have already undergone a shift in their perspective. During step nine, faculty build self-confidence in their new role and in step ten, reintegration in their life on the basis of the new conditions from that perspective. As a critical and reflective practice, the application of transformative learning theory has

potential to shift beliefs. Mezirow argues that “transformative learners move toward a frame of reference that is more inclusive, discriminating, self-reflective, and integrative of experience” (1997, p. 5). Synergistically, transformative learning theory provides a process inclusive of the social justice aims of open education.

Conclusion and Future Research

To date, the diffusion of innovations theory has been primary in discussions of the dissemination of OER as an innovation. Despite growing awareness, the adoption of Open Educational Resources (OER) been described as a “slow burn” (Lieberman, 2019). A shift in educational practice is needed for the widespread adoption of OER, which requires a collective transformation and perspective shift. Transformative learning theory provides a useful framework to consider faculty professional development, as the design of professional development activities for faculty does not often utilize transformative learning theory (Bali & Caines, 2018). Additionally, “viewing professional development as adult education assists in not only focusing on the educator as learner, but also enabling us to consciously appropriate relevant theory, research, and practice from the adult education field” (King, 2002).

Increasing the adoption of OER has tremendous potential for higher education. The process of how faculty choose to adopt OER requires greater study. Qualitative, inductive research may provide insight into faculty motivation and behaviors in OER adoption. Removing or reducing the assumption of Rogers’ diffusion of innovations theory can help to unearth a greater understanding of this process.

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