

# What Keeps Instructors Away From e-Text: Challenges in Adopting E-Textbooks in Higher Education

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## Abstract

This study identified and discussed the factors that challenging instructors' adopting of digital content in higher education. It focused on instructors' perspectives of adopting e-Textbooks in their classrooms. A quantitative research design and descriptive analysis were applied to collect and analysis data from the instructors who were teaching in public universities. Findings of this study were the four factors of the challenges that delayed or even terminate instructors' adoption of e-Textbooks in their teaching, which included institutions' influence on adoption of e-Textbooks, instructors' attitudes towards using e-Textbooks, students' learning needs with e-Textbooks, and the availability of e-Textbooks via publishers. This study also suggested a collaboration of the institutions, instructors, and e-Textbooks publishers to promote e-Textbooks in education in the future.

## Introduction

Among the 50 states of the United States, 32 were in the process of considering adopting digital content in education (State Education Policy Center, 2012). With its various formats, digital content promotes the customization of teaching and learning, improves the flexibility of learning which enables learning to happen at any time and any place, and enhances the accessibility to learning materials (Pearson Publishing, 2013). E-Textbooks as a kind of digital content refer to both the textbook content and the hardware that run the content, and have a variety in terms of definition (Cavanaugh, 2005; Kissinger, 2011; Larson, 2009; Rao, 2003) and format (Cavanaugh, 2005; Hawkins, 2000; Kissinger, 2011; Wikipedia, 2013). They can easily be a simple electronic form of a textbook, either in PDF, text, or other Web-compatible formats (Lamothe, 2011; Tripathi, & Jeevan, 2007); they can also be ones with complex digital features, such as word pronunciations, text highlighting, text-to-speech options, and hypermedia (e.g., video, animations, sound) (Chen, Crooks, & Ford, 2013; Dalton & Palincsar, 2013; Daniel & Woody, 2013). They provides different solutions for users to personalize their learning content, digitalize educational activities, and accommodate diverse learning backgrounds (Wang, 2015).

Researchers, educators, and e-Textbooks publishers have conducted quite a few pilot studies, projects, and researches on e-Textbooks in from preK-12 education to higher education and library in the recent decades. The results provided observable evidences of the benefits of using e-Textbooks in education, which included but not limited to increasing students' achievements, creating more interactions, and customizing teaching and learning experience (Cavanaugh, 2005; Duffey & Fox, 2012; eTextbook, 2012; Larson, 2010; Lynch, 2013; Nelson & Hains, 2010; Rosen & Beck-Hill, 2012; Schachter, 2009; Stone, 2008; Wood, Littleton, & Chera, 2005; Zoellner & Cavanaugh, 2013).

However, the current adoption of e-Textbooks in higher education were not smooth. The type of innovation decision, the nature of communication channels, the nature of the social system, and the extent of change agents' promotion efforts in diffusing of the innovation (Rogers, 2003) singly or combined affect the adoption result. Some researches indicated there were forces that compelled educators' adoption of educational innovation (Korres, 2011; Rogers, 2003; Weidert, 2012; Zoellner & Cavanaugh, 2013), which made the adopting difficult, and brought pressures to instructors who were considering the adoption of educational innovation. The upward force from individuals (students) and downward force generated by the institutions set the instructors in dilemma and caused their innovation adoption to be full of pressure and intensiveness (Korres, 2011), which made instructors faced with "ambiguous tension and uncertainty" (Weidert, 2012, p. 51).

The purpose of this study was to identify the specific challenges that instructors encountered when adopting e-Textbooks in teaching, and enumerate the factors that delay or even terminate the adoption process of e-Textbooks in higher education. This study examined the research question, what are the factors that challenging instructors' adopting e-Textbooks in higher education. By surveying the current adoption progress among instructors who were teaching in higher education and their perceptions of using e-Textbooks in instructional activities, this study presented the main challenges that annoyed instructors when using e-Textbooks, explicated how Rogers' four factors (Rogers, 2003) affect instructors' adoption of e-Textbooks in teaching, and support instructors to make proper decisions of how to adopt e-Textbooks in classrooms.

## Research Method

This study employed a quantitative research method and applied descriptive analysis to examine the specific factors that challenging instructors adopting e-Textbooks in higher education.

An open-ended survey questionnaire was designed to collect data from the instructors in the colleges of education in 39 public universities in the east south central region (Mississippi, Alabama, Kentucky, and Tennessee) in the U.S, and included all the lecturers, assistant professors, associate professors, full professors, and others who were teaching face-to-face classes, hybrid classes, or online classes in colleges of education where they could access to both e-Textbooks and printed textbooks. Descriptive analysis including percentage and frequency calculation was deployed to obtain the frequency of using e-Textbooks in teaching. Open-ended responses were recorded by instructors' self-reported experiences and results were organized by factors based upon Rogers' innovation theory (2003).

## Findings and Results

Within the 347 out of 366 valid responses, 51.4% instructors reported that they "never" used digitalized textbooks in their teaching; only 1.9% instructors used e-Textbooks as "always". Among those who had the experience of using e-Textbooks, 7.4% instructors used e-Textbooks "very often", while 29.8% instructors "occasionally" used e-Textbooks for teaching, and 4.4% instructors "fairly" used e-Textbooks.

Four factors emerged as the challenges that delayed or discontinued instructors' adopting of e-Textbooks in higher education: (1) institutional influence on the adoption of e-Textbooks, among which, institutions did not provide devices to distribute e-Textbooks in class, institutions did not offer instructors adequate knowledge of using e-Textbooks in teaching, and institution did not allow e-text were the most mentioned challenges by the instructors; (2) instructors' attitudes towards e-Textbooks, among which, instructors' little concerns on e-Textbooks, their preference to printed textbooks, their indifference to the formats of textbooks, and they did not use textbooks at all were the most mentioned issues among instructors; 3) students' learning needs with e-Textbooks, among which students' preference to the printed textbooks and students' inadequate knowledge of e-Textbooks were the most two challenges that complained by instructors; 4) the availability of e-Textbooks, among which the unavailability of e-Textbooks via e-Textbooks' publishers, the unsatisfied quality of e-Textbooks, and the limited lifetime of e-Textbooks were the most challenges mentioned by the instructors.

### Institutional Influence on the Adoption of E-Textbooks

An innovation decision could be made by optional, collective, or authority in a social system; usually, a decision that made through authority could be acceleration to the entire adoption process (Rogers, 2003). 17.2% of the instructors mentioned that "there was limited technological support in [my] department regarding to integrating e-Textbooks". The institutions (public universities), as the authority in this social system, did not provide adequate support for instructors to accelerate the adoption process of e-Textbooks; instead, those public universities offered fewer or even no resources relating to e-Textbooks, neither technically nor economically.

*No devices to distribute e-Textbooks in class.* 28.4 % of all the instructors described their situations of not being able to use e-Textbooks due to the lack of the e-Readers. 39% instructors from Alabama mentioned that when trying e-Textbooks for teaching, "e-readers are sometime limited during day classes". Their institutions did not prepare an adequate supply of the devices to support the adoption of e-Textbooks in teaching, especially when instructors had their intentions to use the technology. Instructors from Tennessee also mentioned that, not only the instructors lacked the devices to distribute the content of e-Textbooks but also the students did not "have a tablet access" e-Textbooks. If "not all students have access to e-readers" in class, it was hard for instructors to distribute teaching content through e-Textbooks.

*Inadequate knowledge of using e-Textbooks.* Unfamiliarity with educational innovations declined the instructors' intention of adopting it in their teaching. Instructors realized that "any new technology requires institutional support for effective implementation", so that they were hoping to receive maximum support from their institutions. However, the "minimal support from the institution for existing technology" keeps instructors away from adopting e-Textbook. "I have limited experience with e-books and it is not anything that our college has discussed collectively," and they ascribed it to "because [users of e-Textbooks] numbers are too small and thus not profitable". Even for those who were using e-Textbooks in class, "sometimes the technology fails in class when I need the book", which disappointed instructors. Institutions did not offer such as workshop or training to disseminate the basic knowledge of e-Textbooks or guide instructors of using e-Textbooks in teaching, not even provide any effective technical support for implementing e-Textbooks in classes, which frustrated instructors' enthusiasm in adopting e-Textbooks in teaching.

*E-text were not allowed.* There were even some institutions that completely rejected e-Textbooks in their setting. As reported by instructors from Kentucky, "I would love to use an e-textbook but Educational

Leadership has not caught up to this.” It is impossible for instructors to adopt e-Textbooks in teaching if their social system blocked the innovation. Those institutions as the social authority actually already made their decision on adopting e-Textbooks, that is, rejection.

#### Instructors’ Attitude Towards E-Textbooks

The nature of communication channels also influences the instructors’ adopting of e-Textbooks in their teaching, which can be mass media or interpersonal (Rogers, 2003), which means that if e-Textbooks could be introduced through colleagues, it would be an easier adoption. However, the findings showed that most instructors still rely on printed textbooks in teaching, which made the communication channel of colleagues difficult.

*No concerns on e-Textbooks.* 14.2% of all the instructors were not interested in e-Textbooks at all. “I am not interested in e-Textbooks”, 19% instructors from Mississippi, 17% instructors from Alabama, 12% instructors from Kentucky, and 17% instructors from Tennessee offered their attribute towards e-Textbooks. Some instructors “never thought about it (e-Textbooks)” or “investigated using them in (their) classes”, while some other instructors “haven’t considered it before but (were) very open to it”. As the communication channel of adopting e-Textbooks in teaching, instructors did not perform as an optimistic role; they, themselves, even become a big challenge of using e-Textbooks in teaching. This analyzed result even conflicted with the demonstrated benefits of using e-Textbooks in education. E-Textbooks were beneficial in K-12 education, but instructors in higher education were not interested in them.

*Preference to printed e-Textbooks.* Even there is a choice on the formats of textbook, 33.9% instructors still preferred to the printed textbooks, and took printed textbooks as a premier option for teaching. Although there are so many features of e-Textbooks in teaching as demonstrated in the literature review such as customize teaching and learning, more interactive activities, and flexible learning experience, instructors “still like to write on the pages of books”. As an instructor from Kentucky stated that “I have no problem with this (using e-Textbooks), (just) thought I prefer a print copy for my use”. E-Textbooks still has a long way to go to replace printed textbooks.

*Disregard the formats of textbooks.* Most of the instructors did not “specify printed or e-textbook”, their primary concern is whether the innovation is suitable and acceptable for students’ learning, not the textbooks’ format. Instructors were open to e-Textbooks as an option, but they “would want (their) students to have the choice of using whichever version they prefer” and “not exclude those who may not want to read on their computer”. Instructors’ selections of textbooks will vary “based on learning outcomes”, they allow students to use texts in any form available at the least expense to them”.

*No textbooks at all.* There were a number of instructors who were not fans of textbooks at all; they did not assign any textbooks for students. A few instructors in Alabama and Kentucky reported that, “I do not use textbooks and prefer research articles”, “I don’t use textbooks; I do not use publisher created textbooks”, “I use few textbooks of any kind”. Instructors turned to open education resources in recent years, which made them “no longer in good conscience ask students to buy textbooks”.

#### Students’ Learning Needs with E-Textbooks

The nature of the social system where the innovation adoption happens can influence the adoption rate of an innovation, which includes the social norms, the degree of network interconnectedness, etc. (Rogers, 2003). In this study, it referred to the classroom where instructors delivered their instructional activities, either the traditional classrooms or the online learning environment. Instructors always take students’ learning needs into consideration before adopting any innovative educational tool for teaching. Instructors “just require the appropriate book for the class. It doesn’t matter if a student uses an e-textbook or hard copy,” and “provide them (e-Textbooks) as an option for my students, but not requiring them... students should use the format they are most comfortable,” as commented by instructors from Alabama and Tennessee.

*Students’ preference to printed textbooks.* Findings of this study showed that “students appear to prefer printed books”, they choose “to use printed textbooks”, which made it difficult for instructors to insist using e-Textbooks in teaching. This finding was opposed to Kissinger’s study on e-Textbooks library (2011) which found a higher interest of using e-Textbooks among students than instructors and blamed the lower rate of adoption e-Textbooks on instructors. However, in this study, “The use of e-textbooks is up to the students and so far they haven’t chosen to use them”, as reported by instructors from the four states, “students are not as receptive to ebooks and request hard copy books”.

*Students’ inadequate knowledge of e-Textbooks.* Findings from this study indicated that applying e-Textbooks to the classes whose students had no or little knowledge of computers was a poor idea. An instructor from Mississippi stated, “students are non-traditional (older) students that are not as technologically savvy as I would like (different from the younger, traditional college-aged students) and do not always have reliable access to a computer, and therefore I do not incorporate digitalized textbooks very often in my courses.” So, even if e-Textbooks had hundreds of relative advantages over the printed textbooks, the less compatibility of them with students’ previous knowledge and experience made the adoption process more difficult to move forward.

#### Availability of E-Textbooks via E-Textbooks’ Publishers

Change agents' efforts in promoting adoption of an innovation can influence the innovation adoption process; the more efforts the change agents make, the quicker the adoption would be (Rogers, 2003). Instructors from the four states reflected that there was a lack of the available e-Textbooks in educational related programs, which prevented them from adopting e-Textbooks in teaching.

*Unavailability of e-Textbooks.* Findings from this study showed that one of the reasons of not using e-Textbooks is the lack of available e-Textbooks in their subjects. Although there were quite a number of e-Textbooks available, "not all texts (they) need are available as ebooks". As instructors from Alabama and Kentucky stated that "I don't know of any (e-textbooks available) for science education", and "most of the books we use do not have e-Textbook options". In this case, it is impossible for instructors to choose an e-Textbook that is not in the market, no matter whether instructors have the intentions to adopt e-Textbooks or not.

*Quality of e-Textbooks was unsatisfied.* The quality of e-Textbooks is another challenge of applying e-Textbooks to teaching. E-Textbooks publishers did not integrate a universal standard for e-Textbooks in all subjects, as they did to the printed textbooks, which made instructors difficult in locating high quality e-Textbooks in their fields. Instructor from Tennessee commented that "The ones available for my courses are weak (or there aren't any available) in content. Plus ebooks are poor for science--tables, graphs are often difficult to read and one cannot easily compare two pages, often necessary for dense material". Another factor that influenced the quality of e-Textbooks is "print is too small on the screen". In addition, the quality of illustration is not pleasant for the graphic based materials. Therefore, some instructors felt that "it is difficult to find a methods book in social science education that provides quality examples". Finally, not all textbooks have both printed and electronic versions, so it is impossible for those instructor to offer e-Textbooks as an option. The e-Textbooks publishers did not have a complete promotion of the e-Textbooks in all subjects.

*Limited lifetime of e-Textbooks.* Currently, e-Textbooks usually would be available for 6 months after purchase. As instructors from Kentucky mentioned that "several of the titles I have used are only available for 6 months, thus the learner cannot have access after the time is up and are not available after the end of the semester." The limited life of e-Textbooks prevented the students who want to keep it with a longer time as they can do with the hard copied from using one. If e-Textbooks publishers could open up a new or more practical methods for users to keep e-Textbooks longer, this might increase the use of e-Textbooks in education.

## Conclusion

Based upon instructors' responses regarding to using e-Textbooks in teaching, the adoption of e-Textbooks in higher education is related closely with the institutions, instructors, students, and e-Textbooks publishers. The four factors, institutions' influence on adoption of e-Textbooks, instructors' attitudes towards using e-Textbooks, students' learning needs with e-Textbooks, and availability of e-Textbooks via publishers, can interact each other and influence instructors' adoption of e-Textbooks in their teaching. Institutions have responsibilities to assist instructors to adopt and spread any innovation in education, technically and economically. Those explored factors that prevented instructors from using e-Textbooks in teaching indicated that to increase using e-Textbooks in teaching in higher education is not only dependent on instructors' interest and their teaching responsibility, but also dependent on students learning style, e-Textbooks publishers, teaching and learning goals, support from social systems, etc. Keeping those factors in mind will help and improve the adoption of e-Textbooks in teaching in higher education. Without support from the entire social system, which can be the whole society, a school, an organization, or community, the adoption of any innovation is truly an individual action and impossible to move forward. Instructors need to examine how these can help balance the technology and course content when using e-Textbooks, and provide sufficient support for students' using e-Textbooks in learning. E-Textbooks publishers should not only contribute to exploit features of e-Textbooks, but also consider a proper method to extend the life of e-Textbooks for users.

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