

Empowering Students to Take On the Political World?
Student Attitudes about E-Texts: Engagement, Reading Compliance, and Political Interest

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Prepared for delivery at the APSA's Teaching & Learning Conference in Albuquerque, New Mexico, February 7-9, 2020

Introduction

In recent years, some students and teachers, a great number of colleges and universities, and most textbook publishers have all expressed great enthusiasm for the benefits of the digital textbook. In March of 2015, for example, a survey of American students' attitudes toward electronic educational resources indicated overwhelming support, with 84% of students reporting that they would prefer to use digital textbooks instead of print (Statista 2015). Similarly, many popular press outlets are on the record extolling the virtues of the e-textbook; TheTechEdvocate.com recently described the benefits as including no-wait delivery, environmental friendliness, cost-effectiveness, reduction in storage space, interactivity, and on-the-go learning (Lynch 2017), while TopTenReviews.com adds that portability, efficient search functions, ability to download audio, more frequent updates, and ease of copying, pasting, and highlighting all enhance the learning experience for students (Piels 2018).

Publishers of digital textbooks – such as Cengage, Wiley, and Pearson – are unsurprisingly enthusiastic cheerleaders for the electronic platform as well. For instance, Pearson advertises its Revel digital platform as everything students need for one integrated learning experience that teaches complex material in a format that is more comfortable for today's students. The platform makes content available both online and offline on any kind of device and includes an app that syncs work automatically, an ability for students to set assignment notifications, access to audio, and an instant glossary, vocabulary study, highlighting, and note-taking tools (Pearson 2018). Pearson claims that the Revel system is based on three key “learning sciences” design principles: reducing extraneous cognitive load, boosting active and constructive engagement, and providing immediate feedback. According to the website, this means that Revel keeps students engaged and that “thanks to this media-rich presentation of

content, students are more likely to complete their assigned reading and retain what they have read...so they'll show up to class better prepared to participate and learn" (Pearson 2018).

Perhaps just as importantly, according to Pearson spokesman Scott Overland, "In many cases, our digital course materials offer savings of up to 60% compared to traditional printed textbooks" (Jaramillo 2016).

The lower cost associated with digital texts has indeed been one of the most influential drivers for both students and faculty in the movement toward e-books (Chulkov and VanAlstine 2013). U.S. PIRG, a public interest advocacy group, recently reported that two thirds of all students decided against buying a traditional print textbook because it was too expensive (Vitez 2018). The increasing popularity of digital texts among some faculty has also been attributed to the cost-savings for students, as well as to the customizability and additional resources provided by the electronic platform (Jaramillo 2016). Indeed, more and more institutions of higher education have begun to encourage their faculty to move away from print textbooks and adopt e-books whenever possible in order to save students money (Harrell 2018; University Wire 2017; Visakan 2018). The movement toward open educational resources (OER), begun by the Massachusetts Institute of Technology in 2001 when it launched its OpenCourseWare project, has intensified the pressure on institutions to have faculty adopt online texts that rely on openly licensed materials that are free (Fitzpatrick 2018; Gose 2017). In its 2018 budget proposal, Congress even set aside \$5 million for open textbook initiatives across the nation (Vitez 2018).

The result is that the digital textbook, with open-source material or not, is capturing more and more of the academic book market (Xu 2018). And while saving students money is certainly a valuable outcome, real questions remain about students' attitudes toward e-texts; many early studies suggested that most students actually preferred paper texts to electronic ones, but the

results of more recent research are mixed. Indeed, saving a few bucks on a digital text might not be worth it if many students have trouble reading from a computer screen, are less likely to read a digital text, or are distracted by interactive content. Furthermore, since students' feelings about the text may also have a significant impact on their engagement with a course's subject matter, it is essential to examine not only what attitudes students hold about the digital text platform, but also the impact of those attitudes on their academic experience. This research therefore explores student attitudes toward the digital textbook, including their use (or not) of all of the benefits it offers, and the impact of these attitudes on students' self-reported engagement with the text, the likelihood that they will complete the assigned reading, and their interest in politics.

Literature Review

Student attitudes about and willingness to use e-textbooks have been the most-investigated aspects of the academic digital platform. The assumption has been that students who grew up using computers and other electronic devices will want to use them for everything, including their academic work. However, multiple early studies suggested that most students actually preferred paper texts to electronic ones, regardless of age or educational level (Gregory 2008; Levine-Clark 2006; McGowan, Stephens, & West 2009; Shepperd, Grace, & Koch 2008; Vernon 2006). Gregory (2008) conducted a survey of 105 undergraduate students' attitudes toward electronic books, for example, and found that while students were willing to use e-books, 66% expressed a preference for traditional print texts (269).

These initial studies likely reflect the fact that early versions of the electronic textbook were just paper texts that were digitized (often with clunky interfaces), whereas later iterations of e-texts provide many more features and greater interactivity and usability (McFall 2005).

Indeed, later studies have produced mixed results: while some generally suggest a strong preference for digital texts (Hao & Jackson 2014; Prensky 2013; Rideout, Foehr, & Roberts 2010; Singer & Alexander 2017b), these results are far from universal (see Millar & Schrier 2015; Parsons 2014). Students who want to be able to keep the text for future use still prefer a paper book (Chulkov & VanAlstine 2013), for example, and a recent cross-national study of over 10,000 college and university students indicated a continued preference for print texts across 21 countries (Mizrachi et al. 2018). A study by Jacoby & Flinchbaugh in 2013 found that student attitudes toward using e-books for academic purposes are varied and nuanced (see also Baglione & Sullivan in 2016), although a plurality of students (43.3%) indicated that they preferred e-books (66). Most interestingly, political science majors in the study were the most likely students to indicate a preference for electronic texts (Jacoby & Flinchbaugh 2013, 66).

The main reasons that students generally give for preferring e-texts include portability (no heavy book to carry around or lose) and convenience (easy and constant access), as well as lower cost (Baglione & Sullivan 2016; Chu 2003; Dillon 2001; Hao & Jackson 2014; Jacoby & Flinchbaugh 2013; Levine-Clark 2006; McGowan, Stephens, & West 2009). The fact that e-texts can be updated much more easily and more quickly to reflect changes in the field and in the world is another rationale put forward for the superiority of digital texts (Baker-Eveleth, Miller, and Tucker 2011; McGowan, Stephens, & West 2009), and one of particular importance for students in a discipline like political science. Other features that students appreciate are the ability to search the entire text instantaneously (Chu 2003; Jacoby & Flinchbaugh 2013; Levine-Clark 2006), to highlight sections of the text and enhance note-taking with hyperlinks, and to modify both notes and highlighting after the fact (McGowan, Stephens, & West 2009; Mizrachi

et al. 2018). Students also think they learn better with digital texts because they move more quickly through that medium (Singer & Alexander 2017b).

The Study

Evidence for this research was gathered from a larger study of introductory political science courses at Shepherd University during the fall 2017 semester. Shepherd University is a small, public, liberal arts institution located in the panhandle of West Virginia, with about 4,000 (primarily undergraduate) students and 90 different programs of study. The student to faculty ratio is approximately 15:1, and the average class size is 20 students. The courses involved in the larger study were two sections of “Introduction to American Federal Government,” a 100-level political science course that counts as a general education course in the University’s core curriculum. Both sections of the course were assigned the same text – O’Connor and Sabato’s *American Government: Roots and Reform*, published by Pearson – but one section was assigned the traditional paper version of the text while the other was assigned the text through Pearson’s digital platform, Revel. Data were gathered through two different survey protocols, from analytics provided by the Revel platform, and from student performance on different course assessments and in the course as a whole.¹ The pre-test, demographic survey (Appendix A) was administered in class during the second week of classes, in August 2017, while the follow-up survey (Appendix B) was given in class two weeks before the end of the semester in November 2017. Both surveys were proctored by a faculty member who was not the courses’ instructor and not a member of the Political Science Department’s faculty. The response rate for the initial demographic survey for the larger sample was 81%, and the response rate for the follow-up

¹ This work has been carried out in accordance with The National Institutes of Health’s Office of Extramural Research training course in protecting human research participants and The American Political Science Association Guide to Professional Ethics in Political Science. The Institutional Review Board of Shepherd University has approved this research, permit number 2017090602.

questionnaire was 84%. Only information gathered from the section of the course assigned the digital text was used for this analysis.

Of the 53 students included in the larger study, 27 were assigned the digital textbook. Uncharacteristically, neither section of the class had any students drop or withdraw. Most were freshman (51.2%) or sophomores (39%); gender was slightly skewed in favor of females (54.8%), reflecting the typical population of the University; a large majority carried a normal full-time load of classes for the semester of 12-16 credits (69.8%) and were majoring in a discipline other than political science (86.1%); and almost two thirds self-reported their overall GPA as a B average (64.1%). In addition, over half of the students reported working ten hours a week or less (55.8%), and even more said they would spend ten hours a week or less in providing care to a dependent or other family member (95.4%).

Measurement and Hypotheses

Although the sample size was very small, the data collected allows for a preliminary evaluation of student attitudes toward the digital text in an introductory political science course and the impact of those student attitudes on several important outcomes. The first step in this exploratory research was therefore to discover what students' attitudes were about the e-textbook. Because previous research has demonstrated that student attitudes toward the digital text are complex and nuanced, the measurement of student attitudes employed in this research involves multiple indicators rather than a single question asking students if they liked their digital textbook or not. Instead, data was collected on students' responses to questions specifically about the convenience of the online text ("Is the online version of the text more convenient than a traditional text? Why or why not?"), the imbedded reading quizzes that are

available only on the digital platform (“Were the section and end-of-chapter reading quizzes in the online text helpful to you? Why or why not?”), and open-ended questions about what they liked and disliked about the online text. In addition, I wanted to assess the degree to which students employed the special features of the online textbook, which previous research has shown to have a large impact on student engagement and course performance (Fouh et al. 2014; Junco and Clem 2015; Tasch and Tasch 2016). I therefore asked students whether or not they had signed-up for push notifications for reading due dates (and why or why not) and whether they had taken advantage of the free, two-week trial provided by the Revel platform.

I hypothesize that these attitudes are likely to influence students’ view of the text as engaging and their likelihood of actually completing the assigned reading. Specifically, I expected that a positive attitude toward the digital text would result in more engagement with the material. I created an additive index to capture students’ attitudes toward the digital text: one point was awarded if a student reported that they felt that the online text was convenient, another if they found the imbedded reading quizzes helpful, and a third if they volunteered that they disliked nothing about the e-textbook (ranging from 0=“negative attitude” to 4=“very positive attitude”). Students’ view of the text as engaging was measured by their self-reported degree of agreement (1=“strongly disagree” to 4=“strongly agree”) with the statement, “The assigned readings in the main text were interactive and engaging.” Similarly, it seems likely that a student’s attitude toward their text might influence his or her likelihood of completing the assigned reading. As past research has suggested that reading compliance levels are generally low, especially in introductory courses such as the ones under study (Burchfield and Sappington 2000; Junco and Clem 2015), and given that reading compliance is associated with higher levels of academic success (Daniel and Woody 2013; Junco and Clem 2015; Ryan 2006), this is clearly

an important area for investigation. I therefore tested the hypothesis that a positive attitude toward the digital text was likely to produce higher levels of reading compliance, measured by the percentage of reading completed by the due date (collapsed to a 4-point scale for easier data analysis).

Finally, I hypothesized that a student's positive feeling about the digital text might impact their overall experience of the course and the material in a way that would be revealed by a growth in interest in politics over the course of the semester. Growth in the level of political interest was measured by students' degree of agreement with the statement, "My interest in politics has increased this semester" (response categories ranged from 1="strongly disagree" to 4="strongly agree").

Results

In general, students reported quite positive attitudes about the digital textbook. Indeed, 84.2% of the respondents found the online text more convenient than a traditional textbook, and large proportions of the students volunteered that that was because of ease of access and usability (44%) and because it was nice not to have to carry a big book around (28%). Interestingly, eight percent of the respondents said that the text was more convenient because it was more up-to-date. In addition, students overwhelmingly found the imbedded reading quizzes on the digital platform to be helpful (95%), most often because the quizzes reinforced important information (56.5%) or because it helped the student to figure out what material they needed to revisit (13%). When asked what they liked about the online text, students volunteered the main reasons as convenience (47.6%), not having to carry around a big book (19%), the fact that the text was up-to-date (14.3%), and ease of searching (9.5%). While these results tend to line up with previous

research from other disciplines, it is interesting to note (with some surprise) that not a single student volunteered that what they liked about the digital platform was its lower cost.

In terms of what they did not like about the e-textbook, 16% of the respondents indicated that there was nothing at all that they disliked. However, 28% reported that technical problems were a drawback, while another 28% volunteered that it took them longer to complete the reading in the digital environment, and 12% said that they found it difficult to read from a computer screen. Four percent mentioned that they disliked the fact that access to the text was not permanent for the e-textbook.

While almost half of the students said that they had taken advantage of the free, two-week trial (47.6%), only two students (9.5% of the participants using the digital text) reported that they signed-up for push notifications. When asked why they had not used this resource, 47.6% of the students said that they did not know it was available, and 9.5% said that they did not know how to sign up for them. Unfortunately, this disappointing result only confirms what previous researchers have discovered; Van Horne, Russell, and Schuh's (2016) study of more than 200 students across eight different disciplines showed that few of them used the interactive tools provided by the digital platform (426), confirming a similar finding by Junco and Clem (2015).

Examining the impact of these attitudes on students' self-reported engagement produces support for the first hypothesis; a cross-tabulation analysis (see Table 1) reveals a strong relationship with the expected shape between a positive attitude about the textbook and students' engagement with the text (Cramer's $V=0.681$). This result indicates that the more positively that a student felt about the e-textbook, the more likely the student was to view it as interactive and engaging, and the chi-square value of 8.357 for this very small sample size ($n=18$) is significant

($p=0.039$). In terms of reading compliance, the results also demonstrate support for the hypothesis. A cross-tabulation of students' attitudes with reading compliance (see Table 2) indicates a highly significant ($p=0.001$, $n=18$) but weak relationship with the expected shape (Kendall's $\tau\text{-}c=0.241$). On the other hand, evaluating the impact of attitudes on the growth of students' interest in politics produces findings that suggest, at best, that attitude about the digital text does not really matter. As Table 3 reveals, the cross-tabulation does not produce a substantial or statistically significant relationship between the two variables (Kendall's $\tau\text{-}c=-0.037$, $p=0.726$, $n=18$).

Thus, these preliminary findings suggest that student attitudes about the digital textbook are indeed nuanced, although on balance they appear to be mostly positive. While the results confirm previous findings that students are unlikely to engage with the tools and resources provided by the electronic platform without support and encouragement from their professor, it was very surprising that no student cited lower cost as a reason for liking the digital textbook. Finally, the evidence points to a significant impact for positive student attitudes about the digital textbook on both a student's self-reported engagement with the text and with the likelihood that they will complete the readings; those attitudes do not have an impact on students' interest in politics however.

Table 1: Impact of Text Attitude on Engagement Crosstab

	Negative Attitude	Slightly Positive Attitude	Moderately Positive Attitude	Very Positive Attitude
Text Engaging?				
Disagree	100% (1)	100% (1)	8.3% (1)	25.0% (1)
Agree	0.0% (7)	0.0% (10)	91.7% (11)	75.0% (3)
Total	100% (1)	100% (1)	100% (12)	100% (4)

Table 2: Impact of Text Attitude on Reading Compliance Crosstab

	Negative Attitude	Slightly Positive Attitude	Moderately Positive Attitude	Very Positive Attitude
Reading Completion				
0-50% Completed	100% (1)	0.0% (0)	0.0% (0)	0.0% (0)
51-75% Completed	0.0% (0)	100.0% (1)	16.7% (2)	25.0% (1)
76-100% Completed	0.0% (0)	0.0% (0)	83.3% (10)	75.0% (3)
Total	100% (1)	100% (1)	100% (12)	100% (4)

Table 3: Impact of Text Attitude on Interest in Politics Crosstab

	Negative Attitude	Slightly Positive Attitude	Moderately Positive Attitude	Very Positive Attitude
Political Interest Increased?				
Disagree	0.0% (0)	0.0% (0)	16.7% (2)	25.0% (1)
Agree	0.0% (0)	100.0% (1)	50.0% (6)	25.0% (1)
Strongly Agree	100.0% (1)	0.0% (0)	33.3% (4)	50.0% (2)
Total	100% (1)	100% (1)	100% (12)	100% (4)

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