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Do Students Use eTextbooks Meaningfully? Lessons Learned from Four Online University Courses

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Abstract: The steady increase in online education options has led to a simultaneous increase in the integration and use of eTextbooks. Faculty investigators representing different Colleges at Ashford University, a for-profit online institution, examined the degree to which student engagement with eTextbooks used in four online undergraduate lower-division courses correlated with their performance as indicated by students' weekly quizzes and final course grades. Instructors were trained to increase accessibility of the eTextbook in the observed sections. Next, students' scrolling and note-taking activities, and time spent reading eTextbooks were calculated against their grades. The total user activity within the eTextbook did not significantly correlate with the final grade. However, it significantly correlated with the average weekly quiz grades. Investigators suggest the reason for this being the direct coorelation between weekly quizzes and eTextbook content, as opposed to other course activities, such as discussions and paper assignments, counted towards the final grade. Poor correlation between students' eTextbook engagement and final grades also highlights the need to apply Bloom's critical thinking taxonomy levels more effectively to course tasks. The investigators recommend making lower tier critical thinking skills based activities and students' mastery of content and concepts from the eTextbook and ability to extract information effectively from them to complete course tasks central to course learning outcomes in required General Education and other lower division undergraduate courses.

Key words: student eTextbook engagement, critical thinking, assessment

1. Introduction

Reading disengagement is not limited to undergraduate or even underperforming students. College students at all levels are often reluctant to read textbooks for a variety of reasons, including lengthy chapters, lack of supporting visuals, and text difficulty level (Starcher & Proffit, 2011). A survey of undergraduate psychology students revealed that only 27.4% of the students completed the assigned textbook reading before each class session, whereas 69.98% completed the reading before a test (Clump et al., 2004). A similar study showed that 54.21% of psychology graduate students completed the assigned reading before class while 84.21% read the materials before a test (Clump & Doll, 2007). A survey of medical students discovered that 47% of students

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gathered information from internet sources rather than from their textbooks (Rao, 2011). Such low reading assignment completion traits and preference for online sources could indicate that traditional textbooks do not appeal to modern learners. Institutions are increasingly responding to the problem by using eTextbooks to enhance student engagement.

Ashford University, with its unique accelerated five-week online course model, mirrors this trend in institutions of higher education in increasingly adopting Textbooks in high enrollment courses. The adoption is based on the premise that lower textbook costs for students, instant accessibility, and interactive features (visual, oral, and content) enhance student engagement in asynchronous classes. However, there is a lack of quantitative and qualitative analyses on student eTextbook engagement at the higher education level in general and in online, asynchronous, accelerated classrooms in particular. As eTextbooks are adopted, little attention is paid to simultaneous reflections on their contribution to active student reading, classroom engagement, and high grades. These are the questions that led a team of five faculty investigators at Ashford University from the Colleges of Education, Health, Human Services and Science, and Liberal Arts to conduct a quantitative study in lower division undergraduate courses on the correlation between the use of eTextbooks and student success. Funding for this research was provided by the Ashford University faculty grant for projects aimed at improving the quality of online education.

There are a variety of reading behaviors that range from skimming to meaningful engagement with the content. One successful reading behavior strategy, Read, Encode, Annotate, and Ponder or REAP technique (Eanet & Manzo, 1976) demonstrates that student reading comprehension is enhanced when they actively communicate what they have learned from reading assignments. For example, students who underline key words and concepts, take notes, and summarize key passages have higher levels of reading comprehension and overall success than those who do not engage in active reading strategies (Tasdemir, 2010). Communicating concepts through oral and written explanation is a key factor that employers seek and that new hires are lacking (Sundberg et al., 2011). The opportunities for using these successful reading strategies as well as the benefits of eTextbook features are available in the Constellation eTextbook and in the course assignments used in this study. The question remains: do students actually take advantage of these learning opportunities? If not, how should educators enhance the prospect for student engagement and learning?

2. Research Statement

In order to address the above concerns regarding student engagement with eTextbook and its effect on student learning, the investigators analyzed quantitative data sets from two sections of each of the following four courses that use eTextbooks. Ashford University's Constellation eTextbooks:

(1) PSY 202 Adult Development and Life Assessment

(2) ANT 101 Introduction to Cultural Anthropology

(3) CRJ201 Introduction to Criminal Justice

(4) POL 201American National Government

The four courses represented a mix of General Education (Gen. Ed. hereafter) competency required courses, high-enrollment courses, and courses with a mixture of unrevised and recently revised eTextbooks. The research objective was to determine which student reading behaviors, if any, were correlated with overall student success. Specifically, we calculated student reading behaviors with a focus on the number of pages viewed, time spent

reading, time spent highlighting, time spent scanning for keywords, and time spent scrolling and note-taking. We related these reading behaviors to student grades on weekly quizzes, average quiz grade, and final course grades. We also tested whether these reading behaviors were associated with an improvement in grades over a five-week course. We expected that reading behavior would be positively correlated with assessments examined for each course.

eTextbook sused in undergraduate courses at Ashford University are custom-made for the university and are called Constellation texts. The analysis in this study was limited to student engagement with eTextbooks from one publisher, Constellation. We anticipate that the results from this research will aid in the designing of course learning outcomes and assignments more in line with student success, in textbook revisions, and in faculty efforts to promote effective reading behaviors.

3. Literature Review

eTextbooks may provide a multitude of benefits including interactive learning, audiovisual features, printable downloads, online note-taking, concept summary self-checks, in addition to reducing textbook costs for students. Universities, colleges, and even some high schools are expanding their use of eTextbooks to appeal to the modern learner. It is expected that the flexibility and malleability of eTextbooks provide learning modalities that help students acquire and retain content better. However, there is scant research on the extent to which eTextbooks increase student engagement and performance in class. Woody et al. (2009) note that most publishers offer eTextbook options for introductory courses, but evidence showing that eTextbooks are the preferred education tool for higher education students is still lacking.

Cole et al. (2011) note that reading patterns are directly linked to cognitive processes and reading outcomes. Despite the gap in literature on the effect of eTextbook use on student learning, some recent experiments highlight that the audiovisual and other learning materials embedded in eTextbooks facilitate personalized reading (de Jong & Bus, 2004; Grimshaw et al., 2007; Korat & Shamir, 2007, 2008). Our objective in this study was to take the findings in such recent studies further by examining the extent to which eTextbook preference in undergraduate courses at Ashford University facilitated learning more than the use of print books. At the University of Ulster, researchers at two Colleges conducted a study in 2010-11 to examine the pros and cons of eTextbook reading behavior of undergraduate students and the types of eTextbook features students used (Smyth & Carlin, 2012). Their findings highlight that even though the College courses require the use of eTextbooks thirty times more than print books, factors such as periodic inaccessibility and inability to effectively utilize Textbooks have made students prefer print books. As a result, the researchers warn against equating higher accessibility level of eTextbook with a higher ability of students to extract useful information from eTextbooks. Taking cue from such studies, faculty investigators trained teachers and increased access to Textbooks in one section each of the four courses mentioned above using every tool available in the learning management system, eCollege (see Appendix). In the other sections of the four courses, we maintained the eTextbook accessibility information as before, in the designated folders. Similar to Smyth and Carlin's conclusions, our findings indicate that greater accessibility to eTextbook cannot be equated with a higher ability of students to extract information from eTextbooks. College-entering students may be technologically proficient, but their research skills are not developed. Digital-literacy and information-literacy are not the same competency; a need remains for analyzing student eTextbook reading behaviors and its effect on classroom success.

4. Methodology

4.1 Learner Participants

One hundred thirty eight students (N = 138) from various programs were recruited from two sections each of four courses, ANT101, PSY 202, POL 201 and CRJ 201, for a total of eight classes running between March-April 2014. Students were unaware of their participation in the study.

ANT 101 Introduction to Cultural Anthropology: This was the first subject-specific General Education course. The course was chosen because the August 2013 University data on the course completion rates and course final grades ranks it as one of the top three most challenging course for the students with an above 15% failure rate. At the time of the study, a minimum of ten sections of the course start every week with thirty students in each section. In addition to weekly discussions and final paper, students were required to complete four quizzes and two assignments.

CRJ201 Introduction to Criminal Justice: This was a key course in the BA program of Social and Criminal Justice (CRJ) and was offered every week with two sections of twenty students each. CRJ was the largest College of Liberal Arts program with more than 3,600 majors in 2013. The weekly tasks pattern was one discussion and three assignments.

PSY 202 Adult Development and Life Assessment: This was one of the first four General Education courses taken by all university students. Approximately fifteen sections ran every week with thirty students in each section. In addition to weekly discussions and quizzes, student performance was measured through three assignments and a final exam.

POL 201 American National Government: This was another General Education course offered in the College of Liberal Arts that students took at a later stage. Many students were mid-way in their majors, many of which are located in other Colleges. Approximately twelve sections ran every week with thirty students in each section. In addition to weekly discussions and a final paper, student performance was measured through four quizzes and one assignment.

4.2 Teacher Participants

After courses were selected between March-April 2014, the investigators sought experienced instructors holding PhDs and in good standing at the University. Two instructors were selected for two sections of each of the four courses for a total of eight instructors based on their willingness to participate, their peer-review scores, feedback from instructional specialists (class monitoring staff) on their performance, and their student evaluation scores.

The instructors were provided training by the investigators on using instructor Guidance (lecture), discussions, and Announcements forums to direct students to sources inside Constellation texts. The Appendix to this article contains the weekly announcement that every instructor posted. In addition, in each response to student posts inside the discussion forums, instructors included links to particular sections and pages of the eTextbook that elaborated on that week's topics. The training standardized the approaches instructors would apply to address Constellation texts in their classes. The training also ensured that instructors' teaching pedagogy, focus on Constellation textbook, time commitment, engagement in discussions, and grading standards were comparable to one another in order to neutralize the instructors' influence on the data received from each course section under examination.

4.3 Procedure

Following the trainings, investigators and instructors worked together closely through the duration of the course to ensure that student user data would not reveal one error; lack of accessibility to the eTextbook. In the regular sections of the course, instructors posted weekly lectures and announcements, responded in the discussion forum and provided assignment feedback. In the monitored course sections, instructors were asked to summarize the eTextbook chapter readings for the week and to direct students to the sections and pages in the eTextbook that could help them complete their weekly tasks. This way, accessibility and student ability to know what to read in the eTextbook was ensured. In addition, instructors posted a standard announcement (see Appendix 1) each week on the class home page to direct students to their eTextbook. Also, on the first day of each following week, instructors sent out a standard email (see Appendix) to all students in order to remind them about the eTextbook readings. Instructors integrated eTextbook readings in their responses to student discussion posts whenever appropriate for at least 3 days a week.

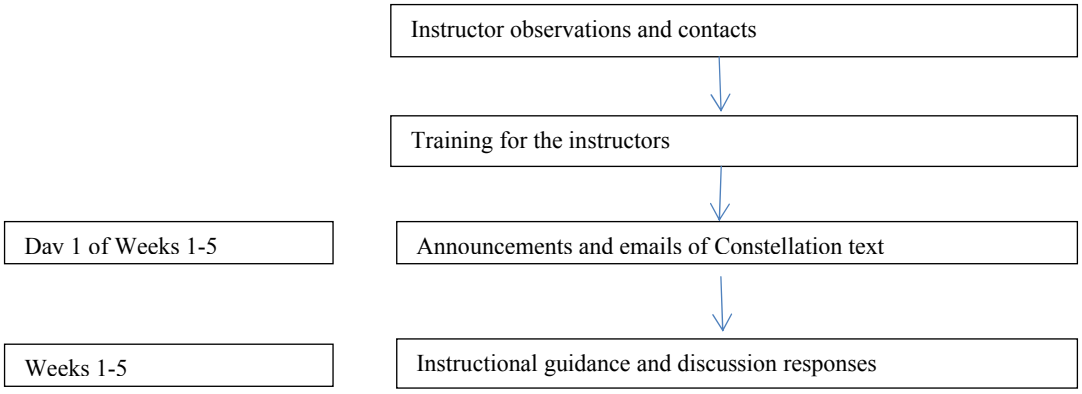

Figure 1 Procedure and Approximate Times

Reading behavior data and student grades were collected during the 5-week course. The data collection procedure is summarized in Figure 1.

4.4 Coding of Reading Behaviors

The Constellation Data Analytics platform was used to capture student reading activities. This data capture allowed investigators to get access to student reading behavior on Constellation.

The following event types were examined:

Event Type	Description
Note Created	This event is captured when the user creates a Note in the system.
Highlight Created	This event is captured when the user creates a Highlight in the system.
Search Performed	The Search event is captured when the user performs a search using the built-in search window.
Print	The Print event is captured when the user uses the Print menu in the application to print one or more sections in the book.
Scroll	The Scroll event is captured each time the user scrolls within the application while in the reading window.
Download Alternate Content	Each time a user downloads a file from the alternate content menu the application an event is recorded that stores the file that was downloaded.

Following was the key measure in the data warehouse:

Measure	Description
Reading Time	The amount of time that the user spends reading is calculated by taking the difference between the Activity Session Begin and End events. All sections within the book are included such as Assessments, Title Pages, Summaries, Glossaries, etc.

4.5 Student Activities in Class and Achievement

Student activities were coded with the total minutes spent in class participating in the discussion forums, on the assignments page, on the instructor Guidance/lecture page, on individual announcements, and on the review instructor feedback on grades page. Achievement was measured through the overall grade on weekly tasks, weekly quiz grades, and the overall course grade. All grades were converted to percentages to balance the differences in point allocation across weeks and quizzes.

4.6 Data Analysis

Univariate General Linear Model (GLM) analysis using SPSS software was conducted to examine difference in student engagement data across courses. The data from all courses was analyzed as one sample to examine the multi-co-linearity between student grades and student reading behavior on Constellation. Descriptive analyses with student distributions in reading events were conducted. To address the research hypothesis, correlation and multiple regression analyses were conducted to determine the relationship between active reading behavior and grades.

5. Results and Analysis

Tables 1 and 2 below highlight the correlation between student time spent reading and using various features of eTextbooks and their scores on the objective, multiple choice based weekly quizzes and their final course grades.

Table 1 presents the correlations between quizzes and weekly reading time in seconds. While total user activity in the textbook was not significantly correlated with the final grade, it was significantly related to the average quiz grade (r = .356, p < .01). With regard to the research question of the extent to which eTextbook reading engagement is related to student success, this evidence suggests that time spent reading eTextbook was significantly related to student success on the weekly quizzes. As can be seen in Table 2, total user minutes correlated significantly with each weekly quiz. A multiple regression analysis was performed to analyze the contribution of total user activity in predicting average quiz scores. To further assess the research hypothesis, a multiple regression analysis was performed with each weekly quiz score entered in a stepwise fashion with total user activity accounted for 13% of the variance in average quiz scores.

Table 1 Correlations: Total User Activity and Quiz Scores

	Avgquiz	TotalUserActivity	Wk1 Quiz	Wk2 Quiz	Wk3 Quiz	Wk4 Quiz
Avgquiz		.356**	.680**	.698**	.646**	.736**
TotalUserActivity			.192*	.355**	.087	.331**
Wk1 Quiz				.319**	.235*	.213
Wk2 Quiz					.270*	.383**
Wk3 Quiz						.410**
Wk4 Quiz						

*Significant at p < 0.05; **Significant at p < 0.01

Table 2 Time Spent Using eTextbook and Average Weekly Quiz and Final Course Grades

	Wk1 Quiz	Wk2 Quiz	Wk3 Quiz	Wk4 Quiz	Total User Activity	Avg Quiz	Final Grade	Reading Time Wk1	Reading Time Wk2	Reading Time Wk3	Reading Time Wk 4
Wk1 Quiz		.416**	.311**	.304**	.192	.670**	.025	.163	.196	.252*	.113
Wk2 Quiz			.515**	.497**	.355**	.803**	.079	.135	.230*	.225*	.098
Wk3 Quiz				.496**	.087	.774**	.155	.159	.049	.112	-.036
Wk4 Quiz					.331*	.765**	.072	.164	.176	.160	.053
Total User Activity						.356**	-.163	.531**	.502**	.576**	.665**
Avg Quiz							.110	.206*	.215*	.247*	.082
Final Grade								.026	-.015	.132	.148
Reading Time Sec Wk1									.273**	.414**	.543**
Reading Time Sec Wk2										.552**	.624**
Reading Time Sec Wk3											.772**
Reading Time Sec Wk4											

*Significant at $p < 0.05$; **Significant at $p < 0.01$

The results in Tables 1 and 2 highlight the nature of weekly quizzes versus critical thinking based weekly discussion questions and weekly and final paper prompts. Since the weekly quizzes are objective and drawn from content in the eTextbooks, there was correlation found between time spent reading eTextbook and weekly quiz grades. The final paper, however, is meant to assess students' writing skills in the discipline and is based on original research and synthesis. Students' final grades in the observed course sections, therefore, do not correlate with time spent using eTextbook.

Figures 1 and 2 below show the readings behaviors of students based on type of interaction in the Constellation textbook and total behaviors for each week. Data generated for reading behaviors before and after the end of two sections of three different courses revealed that 87% of students read the eTextbooks in Week 1, the percentage dropped gradually throughout the course, and ended at 76% in the final week of class. The data does not show high scores for printing, note-taking, highlighting, and downloading. Students' searching and scrolling activities were high, but these do not reflect higher use of eTextbook content.

The high use of eTextbooks at the beginning and towards the end of the course showed a normal college student reading curve. Students browsed through the textbook the most at the beginning of the course and when writing their final papers. Time spent in eTextbooks was not strongly correlated to weekly or final course grades. Students used the eTextbooks primarily for weekly quizzes, as shown by the positive correlation of eTextbook reading time to quiz grades.

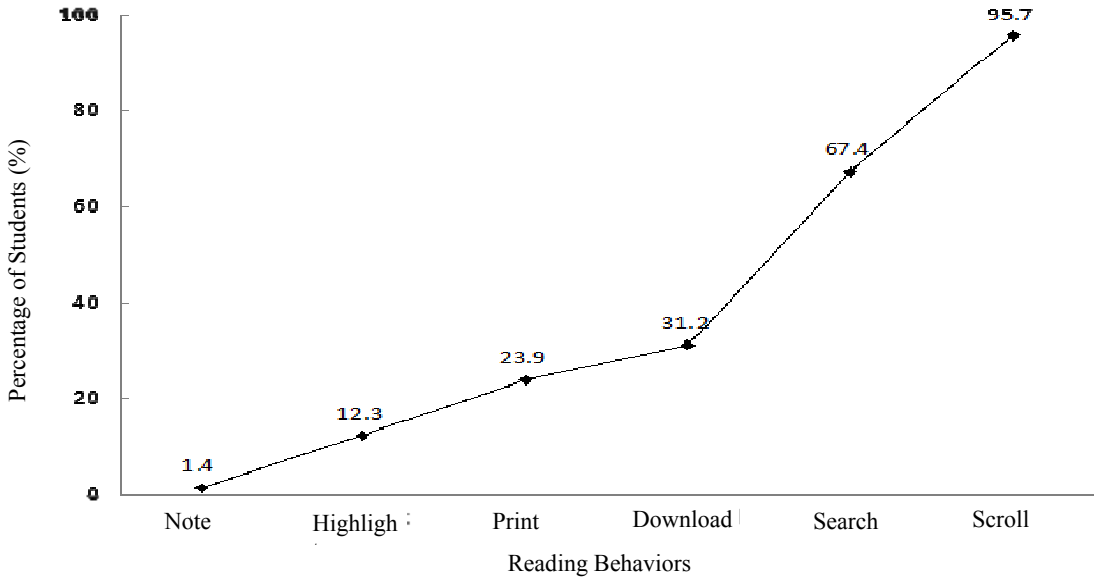

Figure 1 The Percentage of Students Showing Reading Behaviors in the Constellation eTextbook

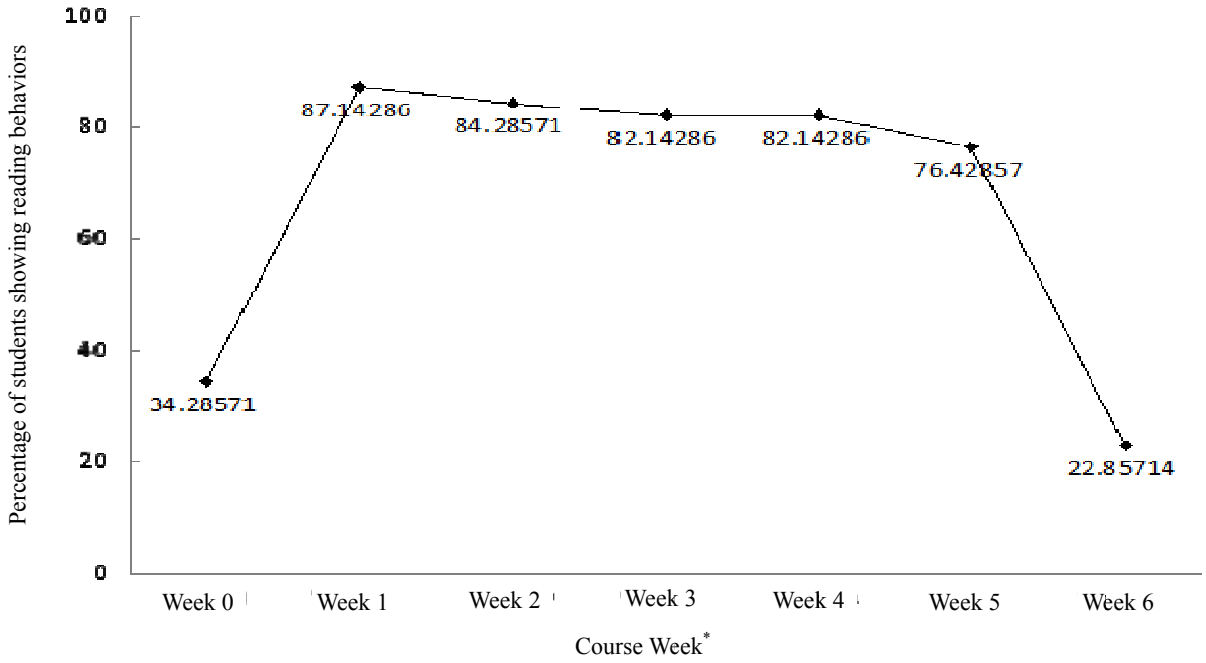

Figure 2 The Percentage of Students Showing Reading Behaviors (Including Print, Note, Highlight, Download, Search and Scroll) in Each Course Week. Week 0 Indicates One Week before the Course Starts and Week 6 Indicates One Week after the Course Ends.

6. Discussion

The results of student eTextbook reading behavior showing correlation with weekly quiz grades and no correlation with course final grades makes a case for the reassessment of the level and degree of critical thinking

tasks incorporated in discussion prompts and weekly, formative assignments in General Education and lower-division undergraduate courses. While the need to align student course tasks with critical thinking activities is key to developing their lifelong learning and problem solving skills, the results of this study indicate that while weekly tasks may become more subject-embedded every passing week, individual courses need not show progression towards student achievement of the higher critical thinking levels in Bloom's Taxonomy. There is a tendency to think that online courses, be they offered inside online only institutions or as online and hybrid courses to complement on ground degree program courses, are stand alone courses in which open-ended discussion and assignment prompts can transition students from the lower critical thinking stages of Bloom's taxonomy, comprehension and summarization, to the highest tier, synthesis and creation. Instead, efforts should be made for lower division undergraduate courses across disciplines to build students' ability to extract information from eTextbooks efficiently to perform basic critical thinking tasks, such as answering weekly quiz questions based on textbook content. If verbs such as *comprehend, report,* and *describe* define critical thinking assignments in online General Education courses, rather than *analyze, apply* and *reflect*, it may allow students, particularly in accelerated asynchronous classes, to use E-textbook to collect and report on foundational field concepts and theoretical approaches better. Such a focus will also allow for assessment of the degree to which eTextbook use correlates with student grades based on particular critical thinking levels. An avenue to investigate could be correlating student user activity in class to student time spent reading, where reading is calculated as the number of seconds the textbook is open.

These results also open investigators to incorporating student perspective and input after completion of an eTextbook-based course. Results showed that students' scrolling and searching activities were high, but this did not correlate with their inability to extract information effectively from the textbook. This highlights students' desire to use eTextbooks for guidance in class assessment activities, but their failure to use the eTextbook page layout and content effectively for the purpose. The lack of statistically significant evidence available for improvement in student grades and increased use of eTextbooks over the duration of the course also points to the need for teachers to maximize eTextbook feature utilization for assignments, quizzes, and to encourage students to incorporate and cite the textbook as an academic resource in writing. The investigators' findings here may echo Smyth and Carlin's argument (2012) that students may need background knowledge in eTextbook accessibility and effective use before beginning the course. It may also point to the lack of a learning plan on the part of the students before entering General Education courses, which in turn raises the question whether critical thinking assignments based on scenarios and materials outside the textbook are the best way to give college-level content foundation to entering students.

7. Limitations of the Study and Avenues for Further Research

One of the limitations of conducting quantitative investigation of student behavior inside online, asynchronous classrooms is reliance on available learning management system and software tools. A challenge in this study was that the eCollege LMS used at Ashford University, only allows for the recording of the time a user spent with the textbook open. It does not include tools for eye tracking to further understand reading behavior. One of the ways in which this can be addressed is by conducting mixed-method college-entering student surveys about reading behaviors. This would allow for tracking reading progress over the course of several early General Education courses.

The negative correlation of student weekly and final grades with eTextbook use highlights several questions for teachers and administrators on how to assess student engagement. First is the extent to which course assessments are tied to the E-textbook content and features. eTextbook use shows a correlation with high weekly quiz grades because quizzes are directly based on textbook content. However, in objective quizzes online, particularly in accelerated courses, quizzes are developed by the textbook publishers. The results from this study point to the need to align course learning outcomes, assessments and course objectives as envisioned by course faculty leads and instructors with E-textbook content and publisher quizzes. Typically, online, accelerated, and General Education courses are developed first and instructors are placed in sections close to the course start date. The investigators of this study recommend that course developers work closely with course instructors to build quizzes and discussion and paper assignment prompts, which require thorough use of eTextbook content and features. Furthermore, to build students' effective academic reading and research writing skills, all assessments must require students to provide examples from and make direct references to the textbook. This will not only increase freshman level undergraduate students' dependence on the eTextbooks, but also develop their ability to extract information from the textbook to perform foundational critical thinking skills based course tasks.

The negative correlation of eTextbook use and students' weekly and overall grades and the students' high searching and scrolling activity with low printing, note-taking, and download activity also points to the need to train students on how to use eTextbook content and features effectively. The results direct instructors to critically reflect on the efficacy of integrating low versus high-level critical thinking skills in early courses. The results may speak in favor of closer adherence to assessments that test students' mastery of concepts and terms in the textbooks. If course activities and assessments focus on analysis, synthesis and evaluation of course materials in upper division courses only, students could use freshman courses to build a strong theoretical and conceptual foundation in their fields using eTextbook multi-modality content delivery style and build on that foundation to engage in high-level critical thinking tasks in later courses.

As mentioned earlier, there is much need for research on student eTextbook reading behavior. While this study looked at student reading behavior in four early and General Education required undergraduate courses, it would be valuable to see how the reading behaviors change when students move from eTextbook use in freshman courses to senior courses. The investigators expect that student reading behavior will show a stronger correlation with higher final course grades due to increased experience with college life, online course tasks, and literacy of the eTextbook modality.

8. Conclusion

The growth of online courses in higher education has led to the proliferation and increased use of eTextbooks. The format allows students to learn the subject through a variety of modalities; videos, online resource links, print media, audio resources, visuals, and embedded activities. In this study, faculty investigated undergraduate student use of eTextbooks, reading behavior and effect on overall grades in four early undergraduate required courses at Ashford University. SPSS-generated data on student reading behavior showed a negative correlation between student eTextbook use and their weekly assignment and final course grades and a positive correlation between eTextbook use and student weekly quiz grades. The results point to two things; students need coaching in the use of eTextbook features and content for improved performance; course learning outcomes and assessment activities need to be aligned with eTextbooks before adopting eTexts. Similar quantitative investigations on the extent to which

increased use of eTextbook and its various audiovisual learning features facilitates freshman student learning and shows a positive correlation with student performance and grades are needed.

References

Clump M. A., Bauer H. and Bradley C. (2004). "The extent to which psychology students read textbooks: A multiple class analysis of reading across the psychology curriculum", *Journal of Instructional Psychology*, Vol. 31, No. 3, pp. 227–232.

Clump M. A. and Doll J. (2007). "Do the low levels of reading course material continue? An examination in a forensic psychology graduate program", *Journal of Instructional Psychology*, Vol. 34, pp. 242–246.

de Jong M. T. and Bus A. G. (2004). "The efficacy of electronic books in fostering kindergarten children's emergent story understanding", *Reading Research Quarterly*, Vol. 39, No. 4, pp. 378–393.

Eanet M. G. and Manzo A. V. (1976). "REAP-a strategy for improving reading/writing/study skills", *Journal of Reading*, Vol. 19, pp. 647–652.

Grimshaw S., Dungworth N., McKnight C. and Morris A. (2007). "Electronic books: Children's reading and comprehension", *British Journal of Educational Technology*, Vol. 38, No. 4, pp. 583–599.

Rao C. P. (2011). "Do medical students prefer e-learning to reading printed text books?", *Current Science*, Vol. 101, No. 7, p. 10.

Smyth S. and Carlin A. P. (2012). "Use and perception of ebooks in the University of Ulster: A case study", *New Review of Academic Librarianship*, Vol. 18, No. 2, pp. 176–205.

Starcher K. and Proffitt D. (2011). "Encouraging students to read: What professors are (and aren't) doing about it", *International Journal of Teaching and Learning in Higher Education*, Vol. 23, No. 3, pp. 396–407.

Sundberg M., DeAngelis P., Havens K., Holsinger K., Kennedy K., Kramer A., Muir R., Olwell M., Schirenbeck K., Stritch L. and Zorn-Arnold B. (2011). "Perceptions of strengths and deficiencies: Disconnects between graduate students and prospective employers", *BioScience*, Vol. 61, No. 2, pp. 133–138.

Tasdemir M. (2010). "The effects of the REAP reading comprehension technique on students' success", *Social Behavior and Personality*, Vol. 38, No. 4, pp. 553–560.

Woody W. D., David B. Daniel and Crystal A. Baker (2010). "E-books or textbooks: Students prefer textbooks", *Computers & Education*, Vol. 55, pp. 945–948.

Appendix

The weekly announcement and email template instructor participants of the study included was as following:

Dear Students,
Welcome to Week [insert week]! I enjoyed our engaging discussion last week and I am looking forward to another successful week. As a reminder, your Constellation textbook is a critical source to help aid your learning and to provide you with the information and content you need to be successful on your weekly assignments and discussions. It is very important that you complete your assigned readings early in the week and that you take advantage of the great features your textbook has to offer such as: [insert features that are particularly helpful in digesting the assigned readings this week such as notes or highlighting, tables, charts, etc.].
This week, we will be covering the following chapters:
[Hyperlink required readings here]
Specifically, the readings/sections that pertain to our work this week include:
Discussion 1: [list/hyperlink chapters or sections of chapters that relate to this assignment]
Discussion 2: [list/hyperlink chapters or sections of chapters that relate to this assignment]
Journal: [list/hyperlink chapters or sections of chapters that relate to this assignment]
Written Assignment: [list/hyperlink chapters or sections of chapters that relate to this assignment]
If you have any questions about accessing your text, the features of the text, or any of the content or assignments covered this week, please do not hesitate to contact me for assistance. The best place is in the Ask the Instructor section of the course so that all your classmates can benefit from the answers as well.
Have a great week!
Dr. [name]