NEW YORK COLLEGE LEARNING SKILLS ASSOCIATION

# Journal of Research and Teaching in Developmental Education

## Fall 2021 Edition

Jesse M. Redlo, Ed.D

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**Note from the Editor: Behavioral Effects of COVID-19 in the Classroom**

Fellow Educators,

In the Fall 2020 edition, I wrote to all of you about developmental education needs during COVID-19, which have no doubt become even more demanding, as we are still in the midst of the pandemic. The authors from the last edition offered tremendous insights into the unique challenges of classrooms during the pandemic. However, in this edition, the articles are focused more on general teaching and learning principles, as we work diligently to overcome the pandemic. I think it is timely though for me to share some observations on how COVID-19 has affected classroom behavior across the disciplines.

Consider students who are starting college in the Fall 2021 semester - many of them have not seen the inside of a formal classroom for 1.5 years; which means in addition to transitioning to a collegiate environment, they are simultaneously adjusting to being back in a general classroom setting. Most educators were instructed by well-meaning administrators, across educational levels, to give students grace during the pandemic, by being more accepting of late work and behavioral problems, due to the challenging nature of the times. While this approach is understandable and some may say logical, it is having negative externalities. As educators are transitioning back to regular classroom policies and academic rigor, some students may be resistant, as they have become comfortable with the more relaxed requirements. When you couple this with the continuing and growing trend of educators working off the tenure-track, you have a recipe for disaster.

Think about the following scenario, which I have personally observed a couple of times between Summer 2021 and Fall 2021: a student becomes uncomfortable when a professor discusses a controversial topic, so they run to an administrator to complain that the professor is behaving inappropriately. All a student has to say is they felt threatened or unsafe by the comment or action and the professor is in hot water, particularly if they are a contingent faculty member. Educational literature is riddled with the term "safe space", discussing how classrooms need to be safe spaces for learning and while I agree with the sentiment; at what point does a "safe space" backfire and turn into a weapon to censor course content? In many disciplines, especially the humanities, discussing difficult topics is necessary for learning, which may make students uncomfortable and in their minds, violate the notion of a safe space, but does it really do that? If educational administrators answer that question with a yes, then academia is being censored and becoming the next victim of cancel culture.

I view all levels of education being about boldly addressing tough topics to create insights, as education has historically been a tool for positive change; but if hypersensitivity among students runs rampant, will this function of education survive? All is not lost though, as even among these behavioral challenges and other challenges from the pandemic, our community of educators continue to innovate, which you will see in this issue. The dedication of my fellow educators inspires me to keep moving forward.

Sincerely,

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# *Deepening Metalinguistic Awareness in Developmental Writing Using The New York Times*

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## Introduction

As writing instructors, we strive to incorporate meaningful opportunities for our students to practice writing across styles, genres, audience and purpose. We also work to construct lessons that allow students to develop a heightened awareness of how language works; that is, we try to foster greater metalinguistic skills in our classrooms. As experienced educators with linguistic training, we are aware that more overt awareness of language can transfer to one's own writing and reading tasks. As a result, emerging writers gain increased flexibility, allowing them to make more informed writing choices. Students in developmental writing can feel empowered with an enhanced knowledge and vocabulary of how language is structured and works as communication.

One effective tool that we employ in this mission with our students is *The New York Times*, which we find to be a rich educational and linguistic resource. *The New York Times* might seem a heavy lift for a developmental writing class; however, the newspaper offers pedagogical resources and strategies not just through many of its features, but also through its sophisticated graphics, hyperlinks, and videos. Overall, the advantages to using this first-rate publication are numerous. Students can easily access this educational resource outside of the classroom for free or for discounted rates. They can find newspapers on newsstands and in libraries, offered on their phones and tablets, and via complimentary paper copies often available on campus. Students who read the *Times* also engage with the paper's written reflections of what is happening daily, across a range of topics and styles. They encounter well-edited argumentation, grounded in research and textual evidence in articles and via reader responses, letters to editor, and op-ed essays. In fact, the objective/subjective dichotomy between reporting and opinions can be the focus of many writing assignments. The digital *Times* is also multimedia and interactive, features that aid in digital literacy. Finally, for those in New York State, the *Times* is our home paper, albeit one with a global reach.

We will first discuss two digital resources offered by *The New York Times* on its website that are aimed specifically at teachers and students. Then we will illustrate more general ways to incorporate the *Times* into the writing classroom.

## Educational Resources

The website nytimesineducation.com is geared to undergraduate and graduate students. The site offers lessons devised by college professors. Every Monday, teachers receive a Weekly Digest email with lessons in 16 subjects. Writing and English Composition lessons are once to twice a

week (the first author is the contributor of these lessons). The other categories offer three discussion, analysis, and writing exercises a week. They are American Government, Arts and Visual Culture, Biology, Business, Campaigns and Elections, Criminal Justice, Environmental Science, International Relations, Leadership, Macroeconomics, Microeconomics, Nursing and Health, Psychology, Religious Studies, and Sociology. Additional educational resources and strategies are available. Each lesson features a recent *Times* articles and can include links to older articles in the paper, as well as other multimedia sources. The objectives of each lesson include an array of the following:

- Critical Thinking
- Cultural Awareness
- Decision Making
- Ethical Reasoning
- Information Literacy
- Oral Communication
- Quantitative Literacy
- Written Communication

The Learning Network is aimed at middle school through 12th grade with such regular features as vocabulary quizzes, webinars, analyses of photographs in the paper, writing contests, and venues for shared writing and more. We find many of the Network's features useful in development writing for first-year college students. The former director of The Learning Network has compiled a collection of winning argumentative essays and runners-up in a volume titled *Student Voice: 100 Argument Essays by Teens on Issues That Matter to Them* (2020). These writing samples are short, supported by evidence from the *Times* and other sources, on topics relevant to teens, and constitute good examples of how to infuse scholarly writing into opinion essays and argue your points effectively.

Paper copies of *The New York Times* are also distributed to campuses across the country. For more details about all features, readers can use this link to nytimes.com/campusaccess. Besides these two pedagogical sites, *The New York Times* comprises the foundation for more work in writing and metalinguistic awareness. Some additional lesson plan suggestions follow.

**Lesson Plans**

*Lessons in Style and Genre*

With all the different types of reporting and the variety of articles across the paper's sections available, students can learn the concepts of language shifting by style and genre, and how written English differs in tone and form as its purpose and target audience shift. Lessons can point out the differences in spoken vs. written language by having students summarize a *Times* article and also give a three-minute lecture on it to their classmates. Presenters and audience alike can compare and contrast the two modalities.

Students can be asked to list situations in which they would most likely communicate in writing, and situations better suited for speech. An interesting discussion can arise about what constitutes writing. School homework, essays, and notes are examples of writing, but what about email, social media posts , and texting? Speaking includes face-to-face interactions, but so do phone

calls and interact over Zoom. Students can write about how they think their language differs between the modes. The *Times* supplies news stories covered both in written reporting and via multimedia platforms (short documentaries, interactive charts). Students can compare and contrast the effectiveness of the various media.

Students can also consider the ways both style and grammatical structures differ in various modes of communication. Some variables we cover are vocabulary words that would show up in writing but would be rare in speech, and vice versa; variation in length and syntactic complexity across styles; use of sentence fragments; and occurrence of slang terms, acronyms, and abbreviations.

Ask a student to read aloud the opening paragraph of a *Times* article; does the written sound natural? Does it sound like someone reading, or speaking spontaneously? What were the differences? Students can then take a relatively short article in the *Times* and try to write a monologue to convey the same information. What were the challenges they faced? Where did they make different vocabulary choices? What grammatical differences resulted? What did they leave out altogether?

To teach writing in different genres, we ask students to choose an article from the news section and one from the special section of the day ("Sports," "Science," "Food" etc.). Compare the opening paragraphs of each. Look at a news article and compare it to an op-ed piece. Compare a news article to a letter to the editor; then list three differences. Are students finding differences in vocabulary choice or grammar (or both)? Look at verbatim quotes reported in articles: Do people speak the same way as the reporter writes?

*Lessons in Jargon and Other Specialized Vocabulary*

The "Business" section of the *Times* carries articles on branding, discussing mottos, slogans, and names for new products and services. "Style" has covered the phenomenon of naming: baby names, maiden vs. married names, and those taking on unusual monikers. "Sports" has reported on names of teams and the controversies of some of those names. "Science" has covered various linguistics topics, e.g., research suggesting that bilingual speakers are cognitively more flexible than monolinguals in processing new stimuli; young women using what is called vocal fry, an abnormal way to vibrate one's vocal folds; and recently the phenomenon of podcast voices. "Personal Tech" covers technology that can be incorporated into one's studies, such as grammar checkers and voice-activated software.

*Lessons in Language Change*

As a living record of our species, the *Times* can reveal language in the process of changing. Students can search for the increasing use of vocabulary associated with the COVID-19 pandemic. They can trace the rise (and fall) of the expressions "flatten the curve" and "social distancing" since COVID-19 was identified. Older expressions can be traced using the *Times'* archives and search function, such as early appearances in print of hashtags; the use of "e" as a prefix, starting with e-mail (now email); and the word "internet" losing its capitalization.

**Conclusion**

*The New York Times* works well as a document of a living language, embedded in our daily lives from both a local and global perspective. With the resources available to teachers and students, developmental writing courses can take advantage of the paper for expanded writing practice, with more overt metalinguistic awareness. They can simultaneously benefits from the updates on current events, and a richness of choice as readers as they select articles that are meaningful to their studies, interests, and lives.

**Cited**

Schulten, Katherine. *Student Voice: 100 Argument Essays by Teens on Issues That Matter to* Them. 2020. New York: Norton.

# *Navigating Developmental Education: Content Area Literacy Instruction in an Undergraduate Corequisite Government Course*

By Lubna Javeed, PhD


## Abstract

This qualitative study explores how students navigate discourses in an undergraduate government class. To understand how content area literacy instruction may support a corequisite government course, qualitative data was collected over two semesters. Analysis revealed three prevalent themes: (1) Students struggle with developing a habit of mind as college learners, (2) content area literacy strategies support students to develop academic discourses, and (3) service-learning provides students with an opportunity to engage in authentic disciplinary discourses. This study highlights how the corequisite model limits students' the time and resources to develop literacy skills to meet college expectations. Future research may consider exploring how students in developmental programs engage in literacy tasks after the corequisite course.


*Keywords:* content area literacy, developmental education, community college, disciplinary discourse

## Purpose

In 2017 Texas House Bill 2223 mandated public higher education institutions reform developmental programs by offering a corequisite model. The model requires undergraduate students who performed below passing on the Texas State Initiative exam to enroll in a non-credit developmental course double blocked with a credit class. The purpose of this reform is to help students placed in the developmental program to progress through college and earn a degree at a faster pace (House Bill 2223). One challenge of the corequisite model is the teaching of foundational skills concurrently with disciplinary discourses. As a result, this study seeks to ascertain how a developmental and Texas government corequisite model incorporated content area literacy instruction to support students' literacy skills. In this study the developmental course connected with the credit government course by supporting and guiding students with the college-level reading, writing, and critical thinking expectations.

As such, the following research questions guided this inquiry:

(1) In what ways do developmental students navigate discourses in an undergraduate government course?

(2) In what ways may content area literacy instruction be applied to support a corequisite government course?

## Literature Review

Implementing effective literacy instruction in developmental programs is key to supporting students with entry-level academic skills for success at the college level. Two instructional approaches are content area literacy and disciplinary literacy (Wilson-Lopez & Bean, 2017). Content area literacy is defined as using reading and writing to acquire new information in a discipline (McKenna & Robinson, 1990; Fisher & Frey, 2016, 2017), while disciplinary literacy views language practices as specialized to the community of practice (Shanahan & Shanahan, 2008). Disciplinary instruction focuses on authentic community practices, while content area literacy instruction addresses general language strategies (Siebert, et al., 2016). Understanding both forms of literacy instruction may offer learners new methods to

comprehend content and develop knowledge. For instance, the pentagonal pyramid model (Jang, et al., 2018) presents six components for how language may be integrated into curricula to support the development of a discourse community. Language may be fostered through student motivation, use of multiple texts, incorporation of technology, inclusion of diverse literacy, and cultural and linguistic diversity. Student motivation may assist to build critical discourses through self-efficacy and personal connections. When students are taught in contextualized conditions connected with personal opportunities, it may increase their ability to interact with a multitude of texts and writing tasks. Using technology through digital texts and media tools may additionally support students to develop as engaged readers and writers.

Understanding the six components of differentiation may aid students in making challenging analyses and evaluations of discipline specific content (Wilson-Lopez & Minichiello, 2017). For example, disciplinary literacy was incorporated in a seventh grade class to engineer a safer school parking lot. Students engaged with the six components to gather and evaluate sources similar to a community of engineers. The process allowed students to immerse themselves in a community of discourse using multiple texts to guide their critical thinking to construct their local parking lot.

Another method to develop a discourse community is the Literacy Design Collaborative (LDC) framework (Reisman, 2017) used by middle school teachers to incorporate fill-in-the-blank writing prompts as a learning ladder across disciplines. However, the LDC framework was short in guiding students to meaningfully incorporate literacy and content with credible evidence-based arguments. Further, the activity disconnected student learning from the larger focus of disciplinary inquiry. The present study seeks to address this gap in research by exploring how students navigated disciplinary literacy instruction in a government course.

**College Readiness**

Despite current trends to eliminate college remediation, McCormick and Hafner (2017) argued students are unprepared for college leveled literacy. Students are labeled college-ready if they score a 480 on the SAT reading and writing sections with 800 being the highest score. The 2020 Texas comprehensive biennial report shows only 36.1% of seniors scored below the twenty-five percentile on the SAT or ACT. This low percentage reflects the dire need to support incoming freshmen with skills to be successful in college.

The ability to comprehend complex texts, evaluate information, and write an argument are skills that determine students' college readiness. First-generation college students often struggle with college readiness because of a disconnect between high school and college literacy expectations. Reading and writing in college required analytical and epistemological demands while in high school students were taught generic literacy skills that lacked rigor (Wahleithner, 2020). For this reason, Williams and Armstrong (2017) expressed academic literacies are hidden literacies since college students are not aware of the unique languages across disciplines. In particular, writing in composition is not the same as writing in history since each discipline values different academic writing styles (Lampi & Reynolds, 2018). Therefore, directly teaching the multifaceted form of disciplinary literacy may support novice college students to develop academic identities (Williams & Armstrong, 2017). Additional challenges with college readiness are building a learning stamina and independence stamina to manage course expectations (Holschuh, 2019). To illustrate, Greci (2019) explored that developmental students at a public university lacked the determination and self-confidence to develop as engaged college readers. When students were posed with a difficult text, they were reluctant to complete the assigned reading for class unless explicitly discussed and taught.

Moreover, students' literacy expectations in high school plays a crucial role with their success in college readiness. Murillo and Janine (2016) found a contrast between literacy expectations in high school and college, thus students felt a lack of preparation for college literacy. Since high school literacy lacked extensive opportunities for deeper, critical thinking, the lack of experience hindered students' abilities to participate in rigorous college literacy expectations. Further, educational factors that influenced college readiness were students' experiences with expository texts in their high school English class (McCormick & Hafner, 2017). Matsumura, Wang, and Correnti (2016) described cognitively demanding writing tasks connected with meaningful and engaging texts may encourage students to develop new ideas when writing, therefore extending the path for college readiness (Imbrenda, 2018).

**College Developmental Programs**

Developmental courses are mandatory in most states for undergraduate students whose placement test scores suggest they may be under-prepared for introductory college courses in reading, writing, and/or math (Armstrong, Stahl, & Kanter, 2016). Reforms in Florida restructured developmental education to exempt certain students from required course placement. Consequently, exempted students who were considered severely under-prepared chose to opt out of enrolling in a remedial English course versus slightly underprepared students who decided to enroll (Woods et al., 2017). However, despite being optional, students were encouraged to enroll in developmental courses to prepare for college-leveled academics. Often students did not complete the developmental programs due to the accumulated cost of taking non-credit courses in addition to feeling discouraged with the delay in their education (Baily, 2008). Nevertheless, research shows enrolling in writing developmental courses may offer students critical skills needed to be successful in credit college courses (Long & Boatman, 2013; Bettinger & Long, 2009). The state mandate HB 2223 stated the corequisite program permits undergraduate students to save time and money to complete a college degree or workforce certification, yet the gap in research fails to acknowledge the academic success rate with the revised program. This article hopes to clarify for educators and policy makers the need for developmental courses to support students with critical college skills to navigate disciplinary discourses.

States navigating reforms should focus on methods to design meaningful initiatives to support the new implementation with professional development, collaboration with college and high school faculty, and access to resources (Mokher et al., 2019). For instance, to improve college developmental programs, Florida initiated a reform in college readiness programs for high school seniors' transition to post-secondary. Similarly, California introduced the Early Assessment Program to improve their college remediation programs (Friedman, Kurlaender, & van Ommeren, 2016). The Early Assessment Program had positive results in reducing freshman enrollment in developmental courses by offering assessments to check for readiness, additional high school coursework to prepare students for postsecondary expectations, and teacher professional development in expository literacy.

**College Literacy Demands**

Academic literacy in college is a complexity of skills that demand students to read and apply texts in various contexts, in addition, to employ argumentative writing skills (Williams & Armstrong, 2017). Developmental courses provide college students the opportunity to review foundational reading and writing skills that may prepare them for the rigor of college literacy. However, recent studies show a mismatch in literacy expectations between developmental and technical career courses (Stahl et al., 2020; Armstrong & Stahl, 2017). Developmental instructors

often applied traditional curriculum models that did not prepare students for the demands of specialized disciplinary language in credit courses. For instance, the reading purpose in developmental courses was focused on gathering information while in career technical courses the purpose to read was to understand how to apply a concept (Stahl et al., 2020). Likewise, curricular misalignment between general credit and developmental courses reflected a lack of communication among faculty (Armstrong & Stahl, 2017).

Pivotal gaps in research should address how the newly mandated corequisite model from HB 2223 may play a role with aligning foundational literacy skills with credit courses. While the recent literature examined the literacy curriculum in developmental courses, the gap in research remains to understand how to merge developmental and credit courses with an aligned literacy curriculum. In addition to merging curricula, more research is required to understand how to support developmental students' literacy skills while enrolled in a credit course. The purpose of this present study is to explore these gaps and offer new insights with how students navigate discourses and literacy skills in developmental education.

## Theoretical Framework

Gee (2014) proposed literacy as a social practice for disciplines to create a community where knowledge is explored and experimented, thus allowing students to develop as critical learners. Discourses are described as an "identity kit" (p.6) for being actively a part of the world with one's attitudes, actions, and identities. Discourses are also an extension of languages since they are a way of acting and believing within socially situated identities. Within these identities, language is used in specialized forms to communicate and enact knowledge. For instance, specific disciplines have unique technical jargon and text structures (Williams & Armstrong, 2017). By understanding discourses, students may master a discipline's content and understand meaning-making is specific to academic social contexts. In the context of this study, participants were challenged with discourses by demonstrating their academic knowledge of government through writing, argument, critical thinking, analysis, and reading. For students to develop a socially situated identity, they had to become active learners exploring the distinctive language forms of a college government course.

Content area literacy instruction was merged with the government curriculum to guide students to explore the discourse patterns through a collaborative social practice. Assignments and readings from the credit government course were scaffolded and completed in the developmental course. Students were supported to explore the specialized language and identity kit to develop and communicate knowledge with scaffolded general practices in reading, writing, and critical thinking.

## Methods

### Setting

This qualitative case study (Merriam, 2009) explored how content area literacy instruction was incorporated in an undergraduate Texas government course at a community college during the spring and fall semesters. Students simultaneously enrolled in a credit government and developmental course to fulfill their qualifications as college ready. Students first attended the government course for an hour and fifteen minutes twice a week. Then, immediately after government, they continued with the developmental course for another hour and fifteen minutes. The developmental course focused on reinforcing literacy concepts addressed in government. Students were supported with reading, writing, and research strategies,

in addition to guiding them to participate in the course service-learning project. Participating in the service-learning project required organized time and commitment. Hence, the developmental course provided support with the necessary space and time to guide students with the project.

Texas government is a required sophomore credit course in the state of Texas for undergraduates to earn a bachelor's degree. Participants were placed in a developmental course because they scored 351 or lower on the State's Texas Success Initiative (TSI) reading assessment or below a score of three on the essay portion of the exam.

**Participants**

The instructor for the Texas government course was a European Anglo female who taught with the college for 14 years. The corequisite instructor, a South Asian American female, who taught the developmental English course was the researcher with a doctorate in literacy education. The focus of this study was how participants responded to content area literacy instruction to aid their development in disciplinary literacy, and it did not examine the instructors pedagogical approaches; however, this focus indeed would make a valuable future study.

The present study was conducted with three sections of a corequisite course; two sections from the spring and one section from the fall semester. There were 31 students after 50% dropped the course or discontinued attending class. The significant drop in students was unknown because there was a loss of contact once the student stopped attending. Students were freshman or sophomore undergraduates who previously attended local public high schools. There were 17 females and 14 males varying from diverse demographic backgrounds. While the sample size is small, it represents qualitative research through an in-depth, holistic analysis of saturated data exploring participants' perceptions and lived experiences (Lincoln & Guba, 1985).

**Data Sources**

Data were collected during the spring and fall semesters (Erlandson et al., 1993) through participant-observer field notes, pre and post surveys, and samples of participants' literacy work for government and developmental English. Participant-observer field notes were conducted three times a week using a reflective journal. The reflective journal was a research tool to record observations of students' behavior, participation, and conversations. Both pre and post surveys (see Appendix) were eight open-ended questions asking students self-reflective questions about their literacy skills and thoughts about the corequisite course. The assignments collected were vocabulary journals, reading notes, service-learning documents, quickwrites, short-answer, and essay papers.

**Data Analysis**

Data were analyzed using the constant comparison method (Glaser & Strauss, 1967); field notes and surveys were typed into a spreadsheet and were read and re-read. Collected student assignments were similarly read to examine their performance. Table 1 illustrates how data were initially categorized and interpreted into open code themes with the first theme. Initial recurring patterns were typed into the table to re-examine for further themes. Then, patterns were aligned for interpretations and to identify connections. Open codes resulted in 30 concepts, axial coding had ten categories, and selective coding reflected three salient themes.

Table 1
*Data Coding*

| Open Codes | Axial Codes/Relationships | Selective Codes/Significant themes |
|---|---|---|
| Understanding local policies: water, voting<br>Locating sources<br>Writing with logic ideas<br>Work with specialized text in the Government<br>Writing for school<br>Amount of essay writing<br>Sentence structure for writing<br>"Critical thinking…all the reading"<br>Write to "find the right facts"<br>Google vs. databases to locate sources<br>I am not good at writing so no I'm not prepared I really struggle with thinking about what to write and how to say it.<br>I feel prepared for college leveled reading but at the same time not really ready because the college level readings and writing might be different<br>Confident as readers and writers, yet struggled to show comprehension of content area texts | • Conducting academic research<br>• Levels of literacy tasks requirements<br>• Experience with literacy | Academic literacy demands |

*Note:* This table demonstrates the process of coding for the first theme.

## Prevalent Themes

Wingate (2018) describes academic literacy as the ability to communicate "competently in an academic discourse community" (p.6) through reading, evaluating, presenting, and debating knowledge within writing and speaking. Participants in the study struggled with the complexities of the academic discourse community for government and to employ general literacy behaviors. Three prevalent themes emerge from the data: (1) Students struggled to develop a learning stamina and habits of mind as college learners, (2) content area literacy strategies supported students with academic literacy demands, and (3) service learning was an opportunity to engage in an authentic disciplinary discourse community.

### Students Struggled to Develop a Learning Stamina and Habits of Mind as college learners.

A common challenge students faced in the government course was applying persistent study strategies to meet the demands of the class. Rachel (all names are pseudonyms) shared a common learning struggle faced in a corequisite course was keeping up with assignments and due dates: "Just a lot of work to adapt to findings of resources, and meet due dates, and understand MLA format." A habit of mind is having the metacognition and stamina to succeed as a college student while being aware of strategies to persevere. Rachel admitted she often spent "at least two hours" to begin and complete a written assignment for class which reflects a lack of time management and learning stamina. Most colleges recommend students spend at least six hours weekly studying for a three credit course.

Students not only struggled with due dates but with learning how to persist with challenging work and knowing what college resources to access. Max said "It's hard for me to complete assignments in government because they are complex." Thus, understanding the requirements of course assignments was a struggle for some students, let alone attempting to complete the work. Similarly, Noah commented "It [has] been hard [a] few points like critical thinking, the way the tests are doing and the connections in classes." Fatima stated she struggled to understand "what information is actually important and what is just unimportant information."

There was an exceptional amount of information provided from the lecture and assignments that students felt overwhelmed and unsure how to approach the course. Data showed students were aware of their struggles yet faced roadblocks to explore what strategies and resources to use to help overcome their academic struggles. Also, due to various issues ranging from the lack of stamina to study, working long hours after class, and the culture of public school's gap with college expectations (Wahleither, 2020), students were challenged with their literacy expectations at college.

Field observation notes revealed students as passive, disengaged learners during lectures since they needed more practice taking active notes and asking questions. During the first week of each semester it was modeled for students on how to take effective and organized notes, yet they struggled to apply the demonstrated strategies when attending government lectures. Modeled strategies were Cornell notes, mapping system, and bullet method note-taking to encourage students to actively engage with the information provided in class.

Another struggle for students was the unfamiliarity with successful college study techniques (Harrington & Rogalski, 2020; Wahleithner, 2020). Studying in college is understandably different from high school, thus participants struggled to negotiate the new college literacy expectations (Williams & Armstrong, 2017). One skill to develop in college is studying and reviewing course content. Study skills include reading comprehension strategies for difficult texts, note-taking techniques, study stamina, understanding versus memorizing information, and working with study groups. To be successful in college, students should master more than attending class and taking a few notes, but being actively engaged, spending time outside of class reading course material, and reviewing content. For instance, a section of the government class decided to form a study group after class. Students communicated with one another and organized a time to meet in the campus library to share notes and review content together. Students utilized their resources and peers to support and manage their learning. This action was pivotal to develop their learning stamina to cope with challenges and build persistence. Students needed direct assistance with staying organized, tracking weekly assignments, and utilizing college resources in order to manage school-work and personal schedules. Regularly encouraging students to remain cognizant of study skills for class was necessary to emphasize the behaviors necessary for college success (Dembo & Seli, 2004).

**Content Area Literacy Strategies Supported Students with Academic Literacy Demands**

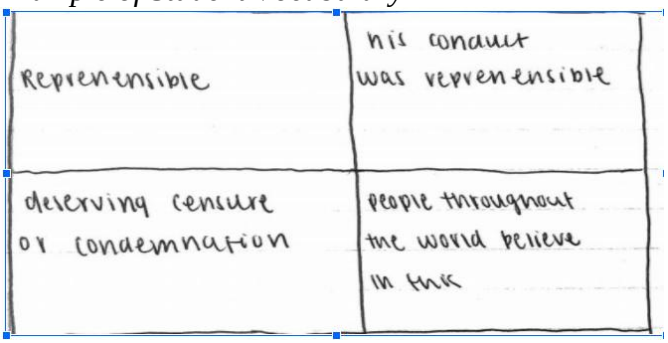
Research based content area literacy strategies (Fisher & Fry, 2016; Armstrong, et al, 2016; Holschuh, 2019) were incorporated to support students' literacy and critical thinking in government. The intention was for the strategies to guide students to become a part of an academic discourse community. Incorporated strategies are a weekly vocabulary journal, reading guides and active reading annotations to develop students' reading processes, graphic organizers, and writing models. These strategies were used to support students' readings of the government textbook, state bills, and to synthesize information to compose arguments.

Students followed the Frayer Model (Frayer, Frederick, & Klausmeier, 1969) in their vocabulary journal to develop and recognize disciplinary vocabulary. This development encouraged students to understand how the terms applied to the discourse community. To complete the government writing assignments, students had to understand how to apply the technical vocabulary discussed in the lecture and textbook. Figure 1 illustrates a student entry in their vocabulary journal. Sharon shared during the fall semester "I think the only struggle I may

have is vocabulary/new words I haven't encountered before." Nick also mentioned, "some words I don't really know what [it] means or maybe the pronunciation." Being cognizant of new words may help students with comprehending the complex discipline.

**Figure 1**

*Example of Student Vocabulary*




Moreover, the course textbook was overwhelming for students to read and annotate because of the dense content and 35 pages required to read per chapter. Chloe mentioned "I am an average reader. Challenging articles and books intimidate me. This class is very necessary for me to get prepared for college…" Although she struggled reading the dense textbook, Chloe recognized the need to develop her reading skills to be successful in the course. Most students either lacked the stamina to read an entire chapter or understand what strategies to apply to support their comprehension. Interestingly, some students did not purchase the required textbook and relied on sharing with a peer or simply not using the textbook. As a result, this situation made it an obstacle for students to stay motivated and engaged with the course expectations. The developmental course supported students with the government reading assignments by scaffolding and guiding students through the reading process. Assigned chapters and articles were read, annotated, discussed, and summarized in the developmental course to ensure students were successful and prepared for the government lecture. However, students without a textbook tended not to engage in these learning activities.

Another form of disciplinary literacy required of students was reading and analyzing state bills. Reading a state bill was a new form of text for students which entailed grasping the text's complexity and knowing how to apply various reading strategies such as understanding how to ask questions when reading, making inferences, and re-reading to help build comprehension. Marvin described his reading challenge as "staying focused as I read and really understanding what I read." One such strategy to guide and help students stay focused was the survey, question, read, re-read, and recall (SQ3R) method (Robinson, 1946). SQ3R is a five-step reading comprehension method that guides readers to re-read to process and retain information. This active reading technique provided students with a structure to guide their reading process and become engaged readers. Noah recalled after learning to incorporate the strategy that "reading was not always my strong skill but I think I can read college level writing. There are ways to break down a passage that will help me understand it better." Other students shared that if they had not been supported with the readings in class, they would not have read the required assignment outside of class.

The developmental class supported students with reading the assigned Texas Sonogram Bill, House Bill Fifteen. Students initially struggled with the unfamiliar structure and language of

the bill, but an entire developmental class was focused on teaching students how to read and understand the state bill. State bills have a unique text structure specialized for the disciplinary content. For example, using capital letters represents amended content and various sections of the bill have specific purposes. Comprehending the bill not only challenged students with the reading process, but allowed them to explore literacy expectations within disciplinary texts.

In addition to reading, content area writing strategies were modeled for students to illustrate academic composition. To write in the government field students have to understand the structure of an argument and how to evaluate and synthesize information. In the survey students expressed their lack of confidence and struggle with academic writing: "right now, I am not ready for college writing. I struggle with prompts and topics and I don't stick with them." Students were surprised with the amount of writing expected and the rigorous critical thinking required to develop their ideas. Content area writing strategies applied to support students were sentence stems to guide them to write signal phrases and form arguments, graphic organizers to structure and outline their arguments, and daily quickwrites in class to encourage them to develop as writers. Karla said "this semester the most challenging in government class was writing about a topic that you have to find the right facts…" Further she found support in taking the developmental course to aid her literacy skills: "I wasn't expecting for [sic] extra help... but this class has helped a lot". Hence, students viewed the developmental course as 'extra help' to be successful in the government course rather than an opportunity to develop strategies as critical thinkers.

While navigating academic writing, students had to understand the complexities of the discipline in order to form logical arguments with sources to support their claims. Marvin mentioned "I was not prepared for all the writing assignments" when an assignment required him to research, write, and prepare an oral discussion on the state's educational financial cuts and its consequences. Andrea discussed her challenges with "locating sources for my answers. I had trouble because it was my first class in which I had to find credible sources." These skills of researching and analyzing were overwhelming for students to navigate since they lacked prior experiences as critical learners. Other students struggled with the assignments because they did not understand academic writing. Not only did students have to organize their time for researching sources, but they needed the reading tools to acquire the information. Then, using the new knowledge gained, students had to synthesize the information using concise writing. Moreover, students struggled to write with organization and extend their thoughts to make connections with the content taught and researched; issues ranged from "writing with evidence and paragraph structure" to being "confused on how to write a transition sentence at the end of the paragraph." Survey responses showed several students felt confident as writers and enjoyed writing to express themselves; however, they struggled with inquiry writing and how to express knowledge through coherent paragraphs. Further, the government instructor did not teach these basic research skills, so students were expected to develop them while completing the assignments. Thus, being paired with a developmental course helped students like Andres "be guided...through those assignments and get that extra support."

**Service Learning was an Opportunity to Engage in an Authentic Disciplinary Discourse Community**

By the end of the semester students were able to connect what they learned from the government course to their community by participating in a service-learning project. Students were expected to complete eight hours of volunteer work with a community partnership program listed through the college, prepare an oral presentation, and write a reflection paper making connections to the government class. Writing a reflection paper required students to describe the organization and synthesize their personal experience with the government class. The developmental course supported students with the assignment by guiding them on how to construct a college paper using logical paragraphs and becoming familiar with the Modern Language Association (MLA) format.

Literacy is a social experience; therefore, participating in the communities around them helps students to gain a better awareness of the issues faced in their society and become a part of the academic discourse community. Karla describes in her reflection of the service learning project: "There were people with families of eight. I met this lady around the age of thirty, her and her family is from Mexico, she married an American. So her kids, mom and dad all stay with her. She was housing a total of six people." Here she was connecting state issues regarding immigration and income inequality with observations while volunteering at the local food bank. The developmental course supported students to analyze this social experience through the writing process of analyzing and critiquing their experiences to prepare their final paper for government. Through explicit modeling, students were able to discuss the concerns they saw, share stories about the individuals they met, and offer ways to improve city policies. In particular, a student suggested to improve how things worked at the food pantry: "I would also change how long people waited to be able to actually start shopping, because they are not enough volunteers and I would have not only students, but teachers volunteer from different schools in the area." Therefore, with service-learning students were able to gain direct experience of local policy issues discussed in government class. Rather than memorizing facts about state unemployment rates, students were able to listen to real stories and see the impact of families who lost their jobs. Karla wrote, "economically having the food bank helps reduce death or hunger by providing food to the hungry and less fortunate. Politically the North Texas Food Bank gets help and funding by the government. By providing more food and groceries the government helps out with getting them." Karla's reflection shows her critical thinking by connecting the experience of helping at the food bank with constructing knowledge of the government's role. Likewise, Kevin discussed how his time volunteering with Habitat for Humanity helped shape his understanding of local policies for low-income families: "Because the urban and rural areas that minorities live in have had little to no funding for their schools, the residents of those areas are left at an economic disadvantage." Kevin was able to meaningfully connect his research from the school funding assignment to what he observed as a volunteer. The experience enabled him to establish a socially situated identity (Gee, 2014) as a community member and to analyze how current city policies affect citizens.

Service learning further allowed students to develop an understanding of what it means to be an active citizen and to view life from a different perspective from how they were raised. Some students utilized local food resources growing up, so they felt positive about being able to give back to the organization that helped them during their childhood. Other students admitted to living in "a bubble" and not being aware of what other families struggled with; therefore, helping to organize food boxes and interact with people from different backgrounds enabled them to view life from **a** unique outlook.

## Discussion

Two research questions guided this study: (1) In what ways do developmental students navigate discourses in an undergraduate government course? (2) In what ways may content area literacy instruction be applied to support a corequisite government course? College literacy practices involve a constellation of complex learning processes; thus students in developmental courses struggled to maintain the expectations in the corequisite credit course.

Gee's (2000) concept of declarative and conditional knowledge defined some of the roadblocks students in developmental courses faced while navigating disciplinary literacy in the corequisite model. During conditional knowledge, learners explore the *how* and *why* with knowledge development while declarative knowledge addresses the *what*. Therefore, students are expected to participate in conditional knowledge through analyzing and synthesizing documents, reading to evaluate, and writing to argue and persuade. Students were not familiar with conditional knowledge since they were familiar with learning through the intake of information.

To meaningfully engage in discourses, students must intentionally establish habits of mind that guides their attitudes and actions to participate in conditional knowledge. This habit of forming conditional knowledge may help students establish the identity kit that Gee (2014) claims comes with participating in different social groups; students in this context did so with community organizations. Gee (2014) notes language is more than providing information but is "a tool for three things: saying, doing, and being" (p.1) in order to comprehend social practices and the various identities that form society. The opportunity students had to participate with local community efforts demonstrates Gee's concepts of apprenticeship. Students' volunteerism in the community was a form of apprenticing for them to understand how state policies were practiced in their community and critically reflect on the impact and/or gaps. During the service-learning project, students were able to reflect and discuss ways the current government could make policy changes to assist the community. This reflection developed their identity kit of belonging to the community by recognizing and voicing their concerns on issues. As a result, students acknowledged their roles as community members, thus enhancing their learning from the course beyond the traditional textbook.

Additionally, findings indicated students engaged in reading behaviors ranging from skimming to not reading. This trend of participating in 'fake reading' (Gallagher, 2004) was similar to other learning behaviors. Literacy strategies (Shanahan & Shanahan, 2008; Alvermann, 2002) such as the SQ3R method and reading annotations, guided students to actively read and question discipline-specific texts, such as legislative bills. Students struggled to become disciplinary thinkers with complex texts and to develop the stamina to participate in active reading processes (Wahleithner, 2020). Allington (2013) noted "struggling readers just participate in too little high-success reading activity every day. This is one reason so few struggling readers ever become achieving readers" (p. 525). The lack of reading stamina hindered students' ability to read academic content and created a learning culture of knowledge consumption rather than knowledge production. Instead of actively producing knowledge through close reading and synthesizing information, students expected to consume knowledge through traditional lecture notes.

The lack of knowledge production hence affected students' ability to participate in disciplinary knowledge. To engage in disciplinary knowledge, students must surpass reading to memorize information by reading that "serves a purpose specific to the disciplinary practice in which it is a part" (Sibert et al., 2016, p.27) to understand how literacy is used across disciplines. Further, Lee (2014) notes that when reading demands become rigorous, students must learn how

to persist with a willingness and grit to continue, qualities which students in the corequisite course lacked. To navigate the challenging discourses in a government course, students initially had to apply content area literacy strategies as a foundation to develop their reading and writing habits before the students could become critical thinkers in a discourse community. For instance, content area reading strategies helped support students with the demands of reading a rigorous text, and, in turn, once they comprehended the content, they were able to be guided to participate in the discourse community by the government course instructor. Therefore, content area literacy and disciplinary literacy must work in concert to support students' knowledge development and to help them acquire and extend the knowledge as disciplinary discourse. For example, learning how to organize one's time to study or the ability to review material that was difficult to understand were skills students were also resistant to practice. Establishing certain habits of mind (Marzano et al., 1993) is critical for college success because it guides students to self-regulate their struggles and apply fix-up strategies to overcome the challenges (Fisher & Frey, 2016 & 2017). Marzano et al. (1993) presents active learning as applying knowledge in a meaningful way, understanding how to acquire and integrate knowledge, and then, over time, extend the information learned.

Similar to disciplinary reading, academic writing proved challenging for students in the corequisite program. Complex thinking levels are required for cognitively demanding writing tasks, such as creating and supporting claims with evidence, organizing ideas, and producing discipline specific arguments (McCormick & Hafner, 2017; Brozo & Crain, 2018). For example, in this study writing an argument was a new form of composition for students that required them to stretch their thoughts and consider the larger context behind the state's sonogram bill. For many students, this assignment was their first college paper which assumed they understood how to compose an academic essay while concurrently demonstrating their content knowledge of the sonogram bill.

In contrast, participation in the course service-learning project led students to establish an "identity kit" to understand how certain actions and community partners play a significant role in the state's political system. Further, volunteering allowed students to become temporary 'apprentices' with the community (Gee, 2014) to understand the state's policy coordination. Service-learning also enabled students to understand first-hand the policy issues discussed in government class and to consider ways the policies affected them and their community. Gee (2014) asserts that to be a part of the social languages one must have the right words and "values and beliefs" (p.1) to understand government policies.

College literacy tasks are varied across disciplines hence students were discouraged and overwhelmed with the learning expectations. Although research suggests generic skills-based strategies are not effective for students, Stahl et al. (1992) mentions teaching contextualized transfer-orientated skills may support students to become efficient learners. Transfer-orientated skills focus on developing students metacognition with foundational concepts they can apply across disciplines. In a traditional developmental course, students have an entire semester to develop metacognitive skills and become acquainted with college literacy expectations. This amount of time permitted students to explore and practice reading and writing with various purposes and audiences, and thereby develop a command of academic literacy. However, with the mandated corequisite model, students are thrust into the higher-level demands of disciplinary literacy. HB 2223 limits the necessary time and resources students need to develop critical literacy skills; hence, students feel overwhelmed and unprepared for the college credit course.

Accordingly, students are attempting to keep up with their credit course while simultaneously learning foundational literacy skills for college success.

## Limitations

This study is limited to research in a government and developmental course; therefore, future research may benefit from exploring the corequisite model in other disciplinary fields. Although this study reflects unique perspectives through a qualitative lens, exploring quantitative data to examine students' performance in a corequisite may help to understand future directions in developmental education. While the sample size in the current study is a limitation, it coordinates with the purpose of qualitative research to intensely explore the detailed experiences of participants until saturation (Merriam, 1998). In addition, examining pedagogical practices in a corequisite program may support educators and policy makers to understand best practices for teaching foundational skills in a credit course. In the current study there were different instructors teaching the credit and developmental course. Hence, this may have limited various factors with the instructional delivery. Last, although there may be limitations regarding trustworthiness with participant-observer methodologies, the researcher remained sensitive and cognizant to the effects made on the situation (Merriam, 1998).

## Educational Importance of the Study

This research suggests, in this particular context, a government corequisite course for students in a developmental program may be too challenging to develop college literacy skills. The passing of House Bill 2223 limits students placed in a developmental program the time and resources they require to meet college expectations. Therefore, affording students a stand-alone developmental course may enhance their foundational skills in a supportive learning environment. The accounts of students' experiences in the current developmental reform is testimony of the overwhelming challenges faced with negotiating academic literacy and learning stamina. Disciplinary practices require knowledge of complex literacy skills to develop epistemologically. For this to be accomplished, it is necessary to recognize the importance of developmental courses as an opportunity for students to thrive rather than a delay in their college progress.

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## Appendix

Government Corequisite Course Survey

1. Have you taken INRW 0405, or any other INRW course, prior to English 1301?
    a) If yes, please explain in what ways, if any, has it helped you prepare for college success.
2. Describe your college plans. Do you plan to transfer to a four-year university? Complete a workforce program?
3. What reading or writing skills are you struggling with now?
4. What do you know about the Texas Government?

Government Corequisite Post Survey

1. What is your overall impression of the semester?

2. What helped you the most this semester to be successful?

3. What do you continue to struggle with?

4. What do you recommend for students next semester taking this course?

# *A Comparative Analysis: Utilization of an E-textbook in a Developmental Reading Course*

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**Abstract**

This scholarship of teaching and learning study compares the use of a traditional textbook and an e-textbook in post-secondary developmental reading courses. Students' achievement was compared in sections of the same course using different textbook formats. Student perceptions of their own motivation to read assigned texts were evaluated in the e-textbook course. Results indicate that there is no significant difference in course grades and no significant difference in textbook quiz grades. Students' attitudes were mixed, and no evidence was found to support the use of e-texts in courses designed for at-risk students to improve achievement or motivation to read.

*Keywords: developmental courses, traditional textbooks, e-textbooks, college reading*

## Introduction

Recently, the Association of Pubic and Land-Grant Universitas conducted a survey with college leaders and found four challenges that higher education must face: decline in government funding, student mental health and well-being, diversity and inclusion efforts, and affordability (Whitford, www.insidehighered.com/news, 2020). While affordability is a primary concern for many students. This is particularly true among the students that inform this study as many are first generation college students with lower socioeconomic status and a sizeable number are underprepared for the rigor of college coursework; thereby, required to take developmental courses. Concurrently, the university where this study took place recognizes technology, readiness, and retention as three current challenges. In turn, rapid technological advancements and state legislation focused on accelerating developmental coursework have both placed immediate and often arduous demands on higher education institutions, instructors and students. Although trends in technology present solutions to affordability and retention, it remains unclear whether these applications will indeed serve at-risk populations and the cognitive and non-cognitive challenges these students possess.

While stakeholders will continue to encounter and grapple with a variety of issues, the purpose of this quasi-experimental study is to examine how students respond to the use of an e-textbook versus a traditional textbook in a developmental reading class. This study is significant in part because there has been little effort to examine use with underprepared students, but also, the findings support those in the current literature base considering other populations of students. To be sure, we have witnessed a rapid evolution of digital environments and this study questions e-textbook affordability and the resultant impact on teaching and learning.

To contextualize this exploration, some would argue that post-secondary teaching has been viewed as ritualistic and symbolic with very little value or reward attached to instructional quality (Sacken, 2005; Fairweather, 2005). Certainly, post-secondary instructors are heavily invested in disciplinary studies indicating they are reflective by nature and intrinsically motivated to improve instructional quality and student learning. Furthermore, the Scholarship of Teaching and Learning (SoTL), or scholarly inquiry into student learning and teaching practices which characterizes this study, has not always been viewed as rigorous and reliable when compared to conventional methods (Bishop-Clark & Dietz-Huhler, 2012). However, if instructors are to address instructional quality in an environment of rapid technological change, the routine engagement in applied research, or research that "usually focuses on problems that need to be solved to improve practice…influencing how practitioners think about and perceive common problems" (McMillan & Schumacher, 2006, p.14), SoTL offers a suitable means to base pedagogical practices which are unique to distinct settings and populations of students. As such, this type of inquiry may not align with research that adheres to conventional research; nonetheless, offers insights worthy of consideration. The study corroborates and contributes to an overall understanding of the use of e-textbooks compared to traditional textbooks; specifically related to student achievement and underprepared student perceptions of motivation and learning.

Arguably, underprepared students struggle with low motivation to read and instructors routinely seek conditions that will improve achievement and motivation. Considering the rapid evolution of technology (i.e., mobile devices) and growing availability of digital texts, do either offer benefits to students in terms of motivation and performance? This question guided my inquiry. The objectives of this study were to evaluate the instructional use of e-textbooks within the classroom setting, specifically a "Developmental Reading II" course. The course was a 3-institutional credit hour course and prerequisites for the course included successful completion of "Developmental Reading I" or an ACT reading sub-score ranging from 15 to 17. The course focused on developing reading comprehension, vocabulary development, analyzing structure of texts, and developing critical reading skills.

Albeit, I am disinclined to read digital texts when provided a choice, this study was prompted by a professional interest, and an informal survey of "Academic Literacy and Learning" course. When polled informally, students indicated some instructors at the university where this study took place used e-textbooks with their courses and they (instructors and students) preferred this type of text. Given the use of e-textbooks in other courses, I was compelled to develop my understanding of digital formats and to explore the use with students in my classes. Even though the influence of mobile technology and the growing trend toward digital textbooks was apparent for several years, I was initially hesitant to embrace alternatives; largely because of my preference for traditional texts, and the tactile properties I favor. Moreover, in my experience, underprepared students often indicate they dislike reading and

delay or neglect purchasing textbooks or other required readings and thought digital formats might offer a palatable solution.

Correspondingly, I considered students' preoccupation with cell phones and extrapolated the potential of digital textbooks in relation to student motivation and learning, thereby persuading me to consider the multiple forms of texts students encounter and new ways to provide instructional and learning opportunities that will assist them in other courses and the future. The anticipated outcomes of the study included; (1) a better understanding of instructional challenges when using digital textbooks; (2) assessment of whether this form of text and instructional use in the classroom enhances student-learning outcomes; and (3) assessment of student perceptions and attitudes toward digital text and their perceptions of learning.

Prediction 1: There is no significant difference in student achievement (course grades) when comparing use of e-textbook versus traditional textbook.

Prediction 2: There is no significant difference in student achievement (chapter quizzes) when comparing use of e-textbook versus traditional textbook.

Prediction 3: Student perceptions of learning and attitudes toward use of an e-textbook will be inconsequential.

## Literature Review

Researchers agree (Ciampa, Thrasher, Marston & Revels, 2013; Murray & Pérez, 2011) that the use of e-textbooks at colleges and universities has not proliferated as predicted. However, the overall utility and potential growth remains to be seen and recent technological advancements may result in more adoptions by universities and faculty (Dennis, McNamara, Morrone & Plaskoff, 2012; Nicholas & Lewis, 2009). In fact, Murray and Pérez (2011) said, "The e-text market will grow at a rate of 49% through 2013 when e-texts will account for 11% of all textbooks sold" (p. 50). Doering, Pereira and Kuechler (2012) estimated, "Inside of seven years, they [digital textbooks] will become the dominant form in Higher Education textbooks" (p. 1). Importantly, Nicholas and Lewis (2010) stated, "The future of e-textbooks will certainly grow and possibly be encouraged through federal legislation" (p. 7). This support has already been evidenced, particularly in California where legislation passed in 2010 that requires publishers to provide e-text versions of textbooks by 2020 (Jessie, 2014).

Hull and Lennie (2010) offer specific explanation for e-book cost savings: in addition to reduced costs of printing, binding, and other distribution factors, "publishers (with increased e-text sales) will no longer be driven by the used-book market to prematurely publish the next edition" (p. 2). Alternatively, Jessie's (2014) literature review concluded, "the research on the issue of e-textbooks and students' cost savings is fragmented" (p. 229). While these observations are resounding and clearly point to the need to assess e-textbooks for cost savings, this study foci are students' perceptions of their own motivation to read assigned e-texts and achievement compared to traditional text formats.

In addition, there is little evidence that suggests the use of e-textbooks improves student outcomes. In fact, researchers have found that student performance is no less or better when compared to courses that use traditional texts (Murray & Pérez, 2011; Nicholas & Lewis, 2010; Weisberg, 2011). To illustrate, Nicholas and Lewis (2010) discuss the Net Generation and various e-textbook studies, citing only one study (Sheppard et al., 2008) that examined e-textbooks and student course grades in an introductory psychology course and conclude future research is needed to determine the effect of text formats on student grades. Notably, Murray and Perez (2011) and Weisberg (2011) are indicative of the relatively low number of e-text studies designed to measure student performance. Weisberg (2011) examined textbook quiz

grades among randomly selected senior business majors enrolled in a management strategy class; whereas Murray and Perez (2011) examined exam grades from a variety of student majors taking an online IT literacy course. Because few studies examine whether e-texts improve student performance, these studies were influential in the design of this inquiry, albeit with a very different population of students, course, and assigned texts. Nonetheless, this study contributes to the knowledge base that examines the use of e-textbooks and student outcomes.

It is certain, developmental students struggle with motivational issues and alternative forms of text may offer a response to the problem. Doering et al. (2012) noted that previous research showed "that students using print books had a difficult time connecting with the content; students who used e-textbooks on the other hand seemed to appreciate user friendly search options and the overall experience" (p. 4). Thus, use of digital texts could improve student motivation to read and ultimately comprehension. Subsequently, this study was designed to compare student textbook quiz grades and course grades using different text formats with an at-risk population of students.

Arguably, most studies examine student perceptions of digital texts and results clearly reflect a preference for paper or traditional textbooks; however, students are characterized as "digital natives" (Dennis, 2011; Dennis et al., 2012) and the "Net Generation" (Nicholas & Lewis, 2009) who are likely to respond to digital texts after the initial learning curve is tackled. However, this assertion is not evidenced within the literature base, and disputed by Yoo and Roh's (2017) recent study that draws on a widely accepted, solid theoretical framework (unified theory of acceptance and use of technology, UTAUT) and four cognitive judgmental processes (p. 1) that examines student surveys (1,419) at a mid-Atlantic university. Although more research is suggested, the researchers concluded, "students may utilize digital textbooks out of curiosity or even price advantages at the early stage, but the choice can be sustained when the technology properly serves their goals" (p. 7). Ultimately, acceptance is dependent upon a pre-established schema and this differs between experienced and non-experienced users.

While Gerhart, Peak and Prybutok (2017) compared student perceptions using two technology acceptance models (e.g., Terpend et al., 2014 and Gerhart et al., 2015) at a large university, they too agree that students must perceive the e-text is useful in meeting learning needs to improve acceptance (p. 211). Clearly, recent studies have evolved to employ acceptance models; however, another study used open-ended survey responses from eighty-one nursing students and did conclude favorable student perceptions of positive effects on engagement; however, many students are "unaware of or have not accepted the innovative benefits of scholarly e-books" (Tang & Barnett-Ellis, 2017, p. 70). The latter considered research questions and methods like earlier studies, of which informed this study.

Alternately, Osih and Singh (2020) applied a mixed methods approach to study students' perceptions of the adoption of an e-textbook versus a tradition text and found "overall, most of the students preferred e-textbooks to printed textbooks" (p. 212). Additionally, "the results showed that the majority of the students were motivated to use their e-textbooks on their tablet" (p.13) for a variety of reasons. The research was conducted at a university in Midrand, South Africa that included "3$^{rd}$ year students (n=80) of the Department of Information Technology" (p. 208). Given the setting, the level of student progress toward degree status and their discipline, the favorable perceptions represented in this study could be slanted when compared to similar research and populations.

Thus, looking across publications, *Issues in Information Systems* (McGowen, Stephens & West, 2009; Jesse, 2014), *Research in Higher Education Journal* (Ciampa et al., 2013), and

*Theses and Professional Projects from the College of Journalism and Mass Communications* (Eno, 2010) and states, Illinois, Pennsylvania, Kentucky, and Nebraska, respectively, researchers used survey methods to analyze student perceptions of e-textbooks. One study compared non-business and business majors while another examined nursing students with a survey that included a qualitative data set. Another surveyed a variety of undergraduate and graduate courses in a college of business, and another compared institutions within proximity sampling the entire student population at one institution and sampling students from Communications, Computer and Information Systems, English Studies, Organization Leadership and Media Arts departments at the other. Furthermore, the institutions vary in terms of public or private. Although research and survey questions were aimed at similar outcomes, the instruments and data identified for analysis were not consistent. While these studies do not represent an exhaustive comprehensive review of empirical data associated with e-textbook studies, they do provide a snapshot of the variety of contexts and populations associated with this area of inquiry using survey methods. Because these studies informed my research methodology; and I subsequently modified survey instruments and information (Eno, 2010; McGowan et al., 2009) used in prior studies that were similar in number of participants and aim, this study does offer a procedure of replication.

What's more, researchers conveyed *how* the instructors use e-textbooks in the classroom plays a vital role in student acceptance and the potential to improve outcomes (Dennis et al., 2012; Sun, Flores & Tanguma, 2012). This point is exposed when researchers concluded:

> This study seems to be consistent with prior research that shows that students do not prefer e-textbooks over printed textbooks. It appears that students think of an e-textbook more as a reference manual than a textbook: They will use the special functions (search, print, etc.), but they do not like extensive reading from an e-textbook. (Ciampa et al., 2013, p. 8)

Because of these findings, the use of an e-text in this study included practice using embedded features within the classroom and incorporated a proven note-taking strategy, SQ3R, to facilitate close reading and comprehension of textbook chapters.

Overall, e-textbooks present an array of advantages and disadvantages. E-textbooks are more accessible, searchable, portable, eco-friendly, and arguably, provide cost savings to students (Doering et al., 2012; Moorefield-Lang, 2013; Murray & Pérez, 2011). Alternatively, e-textbooks may present additional distractions to students while reading text, impose greater eye strain and fatigue while reading, present other restrictions such as printing text, and diminish the tactile and navigational features associated with a traditional text. Increasingly, however, technology has advanced, and e-textbooks now provide more sophisticated active reading tools (for annotating and note taking), as well as, embedded links to dictionaries for vocabulary development, and other interactive tools to promote student engagement and learning. Alongside these developments, tablets and e-readers have proliferated (Tang & Barnett-Ellis, 2017) and appeal to a generation of students that are accustomed to instant access, are described as dependent on technology (Nichols & Lewis, 2009), and are potentially intimidated by traditional, thick textbooks (Jesse, 2014). Because of these influential factors, this study was designed to examine the use of an e-textbook with a designated tablet. Most studies do not clarify the device students use to access digital formats; however, Weisberg (2011) compared textbook quiz scores with specified "device teams" (e.g., textbook, Sony e-reader, Amazon Kindle, CourseSmart, and Entrepreneur) and concluded "that the devices neither improved nor hindered the students' learning of the course material" (p. 193). While I considered cost and device compatibility with

the default textbook assigned to the course examined in this study, I was somewhat reassured by Weisberg's findings that the type of device wouldn't inadvertently influence student performance.

## Methods

### Participants

This quasi-experimental exploration took place at a mid-sized regional public university located in the south-central region of the United States. It is a comprehensive university, primarily residential with a high number of transfer and undergraduate students and fewer graduate students. Fall 2015, the university reported a full-time and part time enrollment of 14,323 undergraduate students: 5.7% Black, 0.8% Asian, 2.4% Hispanic, 1.6% non-resident alien, 0.3% American Indian/Alaskan Native, 83.6% White, 2.3% two or more races, 0.1% Native Hawaiian or Pacific Islander, and 3.1% unknown. The same semester, the average ACT composite score among entering freshman was 22. At the time of this study, students were required to enroll in Developmental Reading II if their ACT score was 15 or 16. Of the 2,794 first-time freshmen, 32.4% scored below 21 on the reading portion of the ACT. Since this study, the university has redesigned developmental courses, following an integrated model where a corequisite ENG 101R replaces the need for standalone ENR courses.

Convenience sampling methods apply. Two "Developmental Reading II" courses were selected for this study. Although this study is not a true experiment, groups are designated as control (course using traditional textbook) and e-text (course using same textbook in digital format) for comparison purposes. Twenty-seven students participated in the study; 14 students from one section of "Developmental Reading II" formed the control group, and 13 students from another section of "Developmental Reading II" formed the e-text group. 60% of the participants were male and 40% female, ranging in age from 18 to 21; one student reported it was the second time taking the course. Participants for the study were selected based upon their enrollment in developmental reading courses taught by the same instructor and principal investigator. The study spanned one 16-week semester, fall 2015.

### Implementation and Instructional Design

Fortuitously, the university offered funds to support faculty scholarship of teaching and learning projects and was awarded an internal grant in the amount of $2500.00 to conduct this study. The funds allowed the purchase of Hewlett-Packard Android 4.4 tablets with a 7" screen, enough for one developmental reading course. Pearson, the publisher of the e-text adopted, suggests Mac or Android tablets with 7" or 10" screens and require an Android OS 3.1 or higher. As an aside, during the decision-making process, I concluded that the constraints and limitations of operating systems and e-textbooks is an area developers could work to improve; not all titles are available or compatible with different devices and operating systems. One improvement was the ability to link the digital textbook to the course's *Blackboard* site and this turned out to be especially helpful for students that had trouble downloading the app to their tablet.

Initial preparations for this for study included evaluating and purchasing mobile devices, establishing access to the e-text, and assessing student cost. Students in the e-text group were provided tablets permitting them access to the digital textbook from a mobile device, by way of the publisher app or navigating to the *Blackboard* site for the course, as well as access to the textbook via *Blackboard* using their laptop or desktop machines. Students downloaded the Pearson app and textbook to their devices at the onset of the course and were required to bring their tablet to class as they would any other class that used a traditional textbook. In addition, the

university's bookstore estimated student cost for the course text to be: (a) print/new $130.40; (b) print/used $97.80 (25% savings); (c) print/new rental $117.35 (10% savings); (d) print/used rental $52.15 (60% savings); (e) eBook, buy $78.00 (40% savings); and, (f) eBook, rent (for 180 days) $26.00 (80% savings). Given the 6th edition of the text was new at the time, students did not have the option of purchasing a used version. Still, considering the variety of options, students could save money when choosing e-textbooks.

Prior to implementation, the research and purchase of tablets was made in collaboration with the university's Information Technology Administrative Support Manager, IT consultants, the university's technology vender, and the designated Pearson sales representative for Humanities, Arts & Social Sciences. Without a doubt, the expertise and requisite consultations with these individuals were integral to the successful application of the digital text and tablet used for this study. Indeed, with the rapid acceleration of technology that we have witnessed in the last decade, the use of tablets in the higher education setting could become commonplace and even replace traditional computer lab configurations that are the current mainstay on college campuses, changing the way students are provided access to technology and related fees. Interestingly, the p-12 environment has already made strides in this area; increasingly, schools are providing students with tablets and e-textbooks to offset costs and improve portability (Felvégi & Matthew, 2012).

The default text for the course was *Reading Across the Disciplines: College Reading and Beyond, 6th edition* by Kathleen McWhorter. The e-text group purchased the digital version while the control group purchased the same text in paper format. Both groups received textbook reading strategy and note-taking (SQ3R) instruction. The e-text provided screen reader (audio), bookmarking, highlighting, searching, note taking, navigation, and embedded media (audios, videos, dictionary) features. We practiced using features at the beginning of the semester while modelling the use of a SQ3R note template, and periodically throughout the semester as whole class or with small group assignments. Both groups completed the same six textbook chapter quizzes: Chapter 5, Textbook Learning Strategies; Chapter 2, Vocabulary Building; Chapter 3, Thesis, Main Ideas, Supporting Details, and Transitions; Chapter 4, Organization Patterns; Chapter 6, Making Inferences; and Chapter 7, Critical Reading. Quiz grades constituted 13% of the overall grade for the course; the remaining portion of the grade (87%) was based on reading strategy work with assigned articles in the textbook (e.g., previewing text, annotations, peer reviews, etc.), written summaries of assigned articles from the textbook, vocabulary study, vocabulary and article quizzes, a final vocabulary exam, and final course exam. The material covered in the textbook supported other assignments and students were required to apply their understanding to specific readings and other assessments.

**Data Sources and Procedures**

Data sources and procedures were consistent for both the control and e-text groups. The control group did not complete student surveys. Data from textbook chapter quizzes and student surveys were tabulated in Excel spreadsheets for analysis using *Minitab* software. *Reading Across the Disciplines* chapter quizzes provided by the textbook publisher were used to assess reading comprehension of specific content areas as described earlier. Each quiz included 10 multiple-choice questions, each worth two points, and students completed the quizzes via *Blackboard.* Each student was permitted two attempts, both timed for 15 minutes.

Pre and post student surveys were provided to the e-textbook course at the beginning and end of the semester to determine differences in students' perception of learning; however, only

post survey data is analyzed and reported in this study. The post survey included four parts (Textbook Information, Perceived Learning, Perceived Motivation and Engagement, and Demographic Information). The post survey included 25 items, most constructed using a 5-point Likert scale appropriate to each question that targeted specific features of the digital text and perceptions of learning, motivation, and engagement. Two items measuring e-textbook use required *yes* or *no* responses. The study focused on outcomes of perceived learning and perceived motivation and engagement (A18-A28); however, the student surveys also assessed usefulness of the e-text and features (B3-B16, A17) and do provide results for discussion, in relation to the student responses (see Appendix).

**Data Analysis**

Two-sample *t*-test and confidence intervals were performed for course grades and chapter quiz grades. Gender differences were also examined with no significant differences across data sources and therefore not included in the display and discussion of results. Analysis of course grades showed a possible difference in gender, but this analysis was inconclusive. Additionally, a tally for discrete variables and chi-square test was performed using 11 of 28 items on the post survey results. The survey scales "somewhat agree" and strongly agree" were collapsed to "agree". The survey scales "somewhat disagree" and strongly disagree" were collapsed to "disagree". Because of the low sample size, collapsing these scales was required to discern results.

## Results

**Comparing Traditional versus E-textbooks and Achievement**

Overall course grades and textbook chapter quiz scores were analyzed for differences in student achievement. In line with prediction 1, analyses of course grades indicate no significant difference in groups as shown in Table 1. Course grades were based on a variety of assignments, including reading strategy work, written summaries of assigned articles, vocabulary work, textbook quizzes, vocabulary and article quizzes, a vocabulary exam, and a final exam. E-textbook group course grades were higher, but not significantly so. E-textbook group course grades ranged from 8 to 99%; 9 out of 13 students passed the class with a 70% or better. Control group course grades ranged from 2 to 92%; 9 out of 14 students passed the class with a 70% or better. Extremely low course grades are associated with students that chose not to submit work or attend class. Furthermore, in line with prediction 2, analyses of textbook chapter quiz grades indicate no significant difference in groups as shown in Table 1. Control group quiz grades ranged from 0 to 96%. E-textbook group quiz grades ranged from 14 to 91%. Quiz grades are the average of six textbook quizzes.

**Perceptions of the e-Textbook**

A self-reported student survey was used to analyze student perceptions. E-textbook group survey results indicate 31% or fewer of students have favorable perceptions of learning and engagement, except for item 22 (39%), as shown in Table 2. Most students reported unfavorable or neutral perceptions. In line with prediction 3, the use of the e-textbook with this specific course was not particularly useful according to students' perceptions of learning and application of course content, and perceptions of improved motivation to read and engage in the materials both in and out of class. However, students to some degree recognized the importance of developing digital text reading skills for academic and professional reasons.

Overall, students felt the e-textbook and tablet combination was less convenient than a traditional textbook, did not improve their participation in class, and did not improve focus or attention while reading as shown in Table 3. Looking at additional post-survey questions, with respect to A17 (Would you like to use digital textbooks in other classes?); 3 responded "yes", 7 responded "no", and 3 did not respond. As an aside, one student expressed how much he liked using the tablet and e-textbook during instructor conferences and class; he seemed surprised by other students' negative or neutral comments after the survey was administered and discussed. In response to another survey question, A16 (Did this technology change the way you study?); 2 responded "yes", 8 responded "no", and 3 did not respond.

Interestingly, pre-survey results indicated that 56% (n=16) of students who began the class and may or may not have finished, had prior experience with digital textbooks; whereas 44% indicated, "never used". Anecdotally, students that admitted prior experience using digital textbooks indicated they did not like them and attributed this dislike to the added difficulty of accessing the text and difficulties associated with losing battery power. Clearly, students that did not have prior experience with digital textbooks where offered a new opportunity to experience this format and assess individual preference.

## Discussion

There were several instructional challenges associated with implementing and using e-textbooks versus traditional textbooks in a developmental reading course. One challenge was embracing and learning the functions of the digital textbook from my vantage point of inexperience and a personal preference for traditional textbooks. However, prior to this study, I had a strong desire to challenge my predispositions and a curiosity to test whether students would respond favorably. My aim in conducting this study was to learn the navigational features and how to instruct students to read for comprehension using notetaking, highlighting, and embedded media tools. To this end, my understanding and appreciation for digital texts has grown. However, based on this trial, despite some of the potential advantages, I will continue to use traditional, hard-copy texts with developmental students, but will be more comfortable using digital textbook formats should the need arise, or they become more commonplace.

Another challenge, like traditional textbooks, is that students (some more than others) forgot to bring their tablet to class. Additionally, students would sometimes neglect to charge their device, or in other instances, could not secure an Internet connection to access *Blackboard* and the link to the digital text. For some, the only means of accessing the textbook was via *Blackboard* because they were unable to download the publisher's textbook app successfully at the beginning of the semester (despite repeated attempts to correct issues). The app permitted access to the textbook directly from the tablet. As with traditional textbooks, students shared tablets in class if forgotten or inaccessible; notably, these incidences did seem to slow down the momentum of the class on several occasions. Despite the touted benefits of portability (Doering et al., 2012; Moorefield-Lang, 2013; Murray & Pérez, 2011), e-textbooks, and the technology needed to access them may pose additional problems for students and instructors, especially when used within the classroom setting.

The outcomes of this study supports previous research indicating that students perform no less or no better with use of e-textbooks (Murray & Pérez, 2011; Nicholas & Lewis, 2010; Weisburg, 2011). Overall, and consistent with the literature, there is little evidence to suggest that one format, traditional or digital, plays any role in student achievement.

Ultimately, it was my wish to improve students' low motivation to read textbook assignments and felt digital textbooks could improve motivation and engagement. Initially, students seemed pleased and eager to use a digital format, but in the end, most did not perceive any benefits in motivation to read or engagement with the text. Yoo and Roh (2017) reference Venkatesh, Thong and Xu (2012) who also said, "the novelty of IS (information systems) will be a primary factor attracting users in the beginning, but the pragmatic functions and usefulness of IS are the pivotal element in students' decisions to keep on using the technology" (p. 6). However, because my instruction was focused on using the SQ3R method for comprehension, student motivation to read could have been negatively influenced by this strategy as well as textbook format. Another approach could have been more appealing or more effective in promoting motivation and recognize this instructional choice as a limitation; nevertheless, how e-textbooks are used in the classroom influence student acceptance/preference and potentially improve outcomes (Dennis et al., 2012; Sun, Flores & Tanguma, 2012). That said, more practice annotating the e-textbook could improve student learning (Dennis, 2011) with the developmental population; in this respect it is important to note that once students have more experience with an e-textbook, acceptability improves (Dennis, 2011).

Although this study examines reading strategy instruction and comprehension with a small sample of students at one university site, it does suggest implications for developmental reading courses in terms of how students respond to digital textbooks. Because it is extremely imperative to address the needs of this student population (Attewell, Lavin, Thurston & Levey, 2006), it is important to consider text formats. Also, because of the potential and growing trend associated with e-textbook use across all content areas, teachers should address traditional literacy instruction and adapt to an electronic medium (Felvégi & Matthew, 2012). This study suggests underprepared students favor traditional textbooks; however, instructors too must consider the future of texts and the possibility of the growing use of e-textbooks and how they influence student perceptions of learning and engagement. One could conclude that because these students experienced digital textbooks within a classroom setting with instructional support, they have a greater awareness of their preference; more so than students in classes that do not focus on the reading process while using a digital textbook. Above all, the results offer a contribution to the literature base that has not evaluated student outcomes and perceptions in developmental courses in any detail.

**Limitations of the Present Study**

Several limitations must be considered. First, the results cannot be broadly generalized due to the small sample size. Second, instructional choices, mentioned earlier, could have also influenced student perceptions of learning and engagement. In addition, because the two groups are not equivalent, comparison of grades and quiz scores is somewhat problematic. In sum, internal threats to validity were controlled to the best of my ability; however, there were differences between the participants in the groups, groups met at different times of day, loss of participants could have affected the outcome, and there may have been unintentional influences on my part as the instructor of the course.

**Conclusions and Future Prospects**

In the end, this study has led me to make more informed decisions about the instructional design of my courses and the utility of digital textbooks. Digital textbooks may not offer a solution to improved motivation and performance; however, this textbook format should be a an

ongoing consideration and studied on a larger scale with various populations of students. Although several issues are inherent to use of digital texts, such as, student competencies and preferences, teacher competencies and preferences, course design, classroom boundaries, machinery used to access digital texts, as well as the limitations and evolution of digital textbooks, it is increasingly important to offer and challenge students to utilize technology whenever possible to meet the demands of the 21st century and to evaluate e-texts from multiple perspectives.

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Table 1.
*Means and Standard Deviations for Assessments*

| **Assessments** | **Control Group** | | | **E-Text Group** | | | **T-test Results** | | |
|---|---|---|---|---|---|---|---|---|---|
| | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **P-value** | **T.S.** | **DF** |
| Course Grade | 14 | 46.9 | 35.4 | 13 | 63.8 | 29.8 | 0.587 | -0.55 | 21 |
| Quiz Grade | 14 | 61.1 | 30.9 | 13 | 57.6 | 23.2 | 0.844 | 0.33 | 23 |

Table 2.
*Students' Perceptions of Learning* 1 *(n=13)*

| Survey Questions | % Disagree | % Neutral | % Agree |
|---|---|---|---|
| A18. The e-text helped me apply course content to solve problems. | 39 | 46 | 15 |
| A19. The e-text helped me to learn the course content. | 31 | 46 | 23 |
| A20. The e-text helped me participate in the course in ways that enhanced my learning. | 23 | 54 | 23 |
| A21. The e-text helped me develop self-confidence in the subject area. | 31 | 46 | 23 |
| A22. The e-text helped me develop skills that apply to my academic career and/or professional life. | 31 | 30 | 39 |

Table 3.
*Students' Perceptions of Motivation and Engagement (n=13)*

| Survey Questions | %Disagree | %Neutral | % Agree |
|---|---|---|---|
| A 23. The e-text motivated me to learn the course material. | 39 | 38 | 23 |
| A24. The e-text allowed me to participate more in class. | 46 | 23 | 31 |
| A25. The e-text improved my focus and attention while reading. | 54 | 31 | 15 |
| A26. The e-text was more convenient than a traditional textbook. | 54 | 15 | 31 |
| A27. The tablet was more convenient compared to a desktop or laptop computer. | 46 | 31* | 15 |
| A28. It was easier to work in groups using the tablet than in other group activities. | 31 | 38* | 23 |

Note. * blank response not calculated into percentage

## Appendix: E-text Survey Form B

This survey is a part two of a study researching perceptions of digital textbooks in a developmental reading course. Its purpose is to determine changes in student perceptions of the digital textbook technology and to measure perceived learning and engagement.
The information gathered from this survey will remain confidential. The respondent is to complete the form by checking or circling (as directed) the boxes to answer each questions and turns the form in to the class instructor. If you choose not to participate, you will not lose any benefits or rights you would normally have.

**PART 1: Textbook Information**

B3. Rate the usefulness of your digital textbook for this class?
Very low Low Neutral High Very high

B4. Rate the usefulness of your textbook's screen reader (audio) option for this class?
Very low Low Neutral High Very high

B5. Rate learning experience for this class because of this technology.
Very low Low Neutral High Very high

B6. Describe how much you used the paper book versus the digital book for this class.
Paper text only Mostly paper text About even Mostly digital text Digital text only

B7. How important was the digital textbook technology to you when it comes to improving your grade in this class?
It hurt my grade Not at all Important Somewhat Important Very Important Extremely Important

B8. How important was the screen reader (audio) option to you when it comes to improving your grade in this class?
It hurt my grade Not at all Important Somewhat Important Very Important Extremely Important

Rate the following digital textbook features (7).

B9. Bookmarking
Don't understand use Not useful Somewhat useful Very useful Extremely useful

B10. Screen reading (audio)
Don't understand use Not useful Somewhat useful Very useful Extremely useful

B11. Highlighting
Don't understand use Not useful Somewhat useful Very useful Extremely useful

B12. Searching
Don't understand use Not useful Somewhat useful Very useful Extremely useful

B13. Note-taking
Don't understand use Not useful Somewhat useful Very useful Extremely useful

B14. Navigation
Don't understand use Not useful Somewhat useful Very useful Extremely useful

Multi-media (e.g., embedded audios, videos, dictionaries, or other tools)
Don't understand use Not useful Somewhat useful Very useful Extremely useful

B16. Did this technology change the way you study?
Yes No

A17. Would you like to use digital textbooks for other classes?
Yes No

Part 3: Perceived Learning.

A.18. The e-text helped me apply course content to solve problems
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

A19. The e-text helped me to learn the course content.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree
A20. The e-text helped me participate in the course in ways that enhanced my learning.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

A21 The e-text helped me develop self-confidence in the subject area.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree
A22. The e-text helped me develop skills that apply to my academic career and/or professional life.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

Part 4: Perceived Motivation & Engagement
A23. The e-text motivated me to learn the course material.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree
A24. The e-text allowed me to participate more in class.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

A25. The e-text improved my focus and attention while reading.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

A26. The e-text was more convenient than a traditional textbook.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

A27. The tablet was more convenient compared to a desktop or laptop computer.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

A28. It was easier to work in groups using the tablet than in other group activities.
Strongly disagree Somewhat disagree Neither agree or disagree Somewhat agree Strongly agree

Part 5: Demographic Information
(Names and personal information will be kept strictly confidential)

Gender (circle one): Male Female

Age (circle one): 18-20 21- 25 26-30 your age if over 30 _____

English first language (circle one): yes no

First time college student (circle one): yes no

Have you taken this class before (circle one): yes no

Student Identification number: _____

Date: _____

# *From Intention to Action: Cultivating a Sense of Accountability for Success in Underprepared Students*

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**Abstract**

The C4 Scholar program (Cross-Curricular Career Community) is a multi-semester, interdisciplinary learning community program at a comprehensive Midwestern university for underprepared students entering with three developmental placements in English composition, mathematics, and reading. The program, which includes course acceleration and relational advising, is guided by a personal accountability framework taken from business management literature. When compared with non-participants, first-to-second year retention rates among the first three C4 cohorts are higher, and their academic performance has led to reduced time-to-degree. Further, interview results show a statistically significant relationship between the program framework and academic performance. In this article, we describe the structure of the program and the integration of the accountability framework into that structure. Using interview excerpts with representative students, we illustrate the effect of the framework on student thinking from intention to action and explain how those results are informing our next steps for future C4 cohorts.

*Keywords:* underprepared students, accountability, retention, learning community

## From Intention to Action: Cultivating a Sense of Accountability for Success in Underprepared Students

The C4 Scholar Program (Cross Curricular Career Community) is an interdisciplinary, multi-semester learning community for first-year developmental students at a comprehensive midsized state university in the upper Midwest. The program, a joint venture involving the University's Retention & Student Success (R&SS) unit and the departments of English, Literature, and World Languages and Mathematics, was created to address low fall-to-spring retention rates among first-year developmental students.

The Learning Communities Demonstration (LCD) project (Visher et al., 2008; Visher et al., 2012) inspired the original conception for the C4 program. During the pilot phase, which spanned the 2016-17 academic year, participants (referred to as C4P) took yearlong sequences as a cohort in English composition, mathematics, and reading. When compared with the academic performance of non-C4 first-year students with similar course placements, the C4P group did somewhat better (see Authors, 2020 for a summary), although differences were small, mixed, and statistically insignificant. While the C4P students developed strong social camaraderie, meaningful academic and professional connections proved elusive. When faced with longer-range assignments, such as in second semester English composition, the C4P students continued to struggle with perseverance and follow-through despite program interventions. These results indicated the need for revision, specifically, toward a structure beyond the learning community.

The C4P students exhibited strong career interests. Most described specific career goals; several expressed starting their own businesses; all mentioned the desire to make a good living. The following three interview excerpts (from December of 2018) capture this sentiment.

- "Like my future, like I have to get a job to like better myself, keep myself going so I have money so I'm not living in my parent's house for the rest of my life."
- "I wanna go somewhere in life and like make a lot of money."
- "Money. Money is a big one. I've always been motivated to make money I guess."

There was clear concern for achieving a sense of financial security, and in one case, specific mention of future independence. This connects to a strong interest in job or career, but not necessarily an interest in the education required to obtain it. This provided a possible point of leverage: to connect students' financial/career interests with academic success. As a result, we turned to business management literature for guidance, and found the perspective offered by Connors et al. (2004), with its emphasis on personal and corporate accountability, to be compelling.

Their approach, which they term *The Oz Principle*, inspired the development of a program framework which has guided the three cohorts beyond the Pilot Phase (C4P). We refer to these cohorts, the focus of this study, as C4I (first year: 2017-18), C4II (first year: 2018-19), and C4III (first year: 2019-20). In this article, we (1) compare the first-year academic performance of these three groups with developmental students who did not participate in the program, and (2) using interview data, ascertain the effect of implementing the Connors et al. (2004) framework on participant perspectives. Within this context, we are interested in answering the following research question: To what degree does a learning community guided by an accountability framework impact the academic performance and attitudes of first-year developmental students?

We first review literature related to the program. We then describe the program's structure, the framework, and the relation between the two. In the next two sections, we describe our methodology and present results. In the last section, we consider the implications of our findings, and explain how our analysis has informed further program revision.

## Related Literature

Many colleges and universities face rising numbers of underprepared college freshman (Grubb et al., 2011; An Act Concerning College Readiness and Completion, 2012). The U.S. Department of Education's National Center for Education Statistics (2019) reports that 39% of college students take remedial courses. Almost 19% need substantial help in all four core subject areas to be ready for college-level work (Fowler & Boylan, 2010; McCabe, 2003). Some estimates suggest that only a third of high school graduates are ready for college coursework (Boatman, 2014). For those who take remedial courses at public four-year institutions, only 59% complete all of the courses they attempt (Chen & Simone, 2016). It is certainly not surprising, then, that less than 60% of all students who enroll at a four-year institution graduate within six years (Boatman, 2014); however, the college or university is expected to support these students as they work to obtain a degree (McNair, 2016).

According to the Association of American Colleges and Universities, high impact educational practices can potentially reverse these trends (2013). Learning communities represent one such practice. In a general summary, Love (2012) reported positive impacts of learning communities on student success. Zachry and Schneider (2010) made a similar finding, but they found that effects tend to dissipate over time, and that less well-developed programs show limited progress. The extent of the impact of a learning community often depends on the

programming to which it is connected, such as student success courses, intrusive advising, tutoring, structured learning assistance (SLA), mentoring, and/or course acceleration (Engstrom and Tinto, 2008). Individually, each of these elements (explained in more detail below) offers developmental students an increased opportunity to graduate and become part of the 60% referenced by Boatman (2014).

1. Student success courses: Research shows that student success courses such as College Survival Skills or College Success Skills support short-term persistence (Cho & Mechur Karp, 2012; Rutschow et al., 2012; Visher et al., 2012; Zeidenberg et al., 2008). To maximize their effect, Mechur (2012) suggested the need for long-term impacts. These could be fostered by helping students to know how and when to apply course concepts.
2. Intrusive advising: Bahr (2008) and Boatman (2014) found that advising that includes emotional support is particularly beneficial for students with academic deficiencies (Snyder-Duch, 2018), and has a particularly strong impact when enhanced, well-structured, and intrusive (Asmussen, & Haorn, 2014; Bettinger et al., 2013; Boatman et al., 2013; Burns, 2010; Edgecombe et al., 2013; Fowler & Boylan, 2010; Hollis, 2009; Jaggers et al., 2015; Jenkins & Cho, 2013).
3. Tutoring, SLA, and mentoring: Research shows that tutoring offers substantial benefits (Arendal & Hane, 2014, Brothen, 2012; Finney & Stoel, 2010; Kosiewicz et al., 2016, and Yue et al., 2018). According to Bremer et al. (2013), students who used their institution's tutoring service were more likely to be retained and earned higher cumulative GPAs. The authors also noted the positive impact of SLA and mentoring.
4. Course acceleration: Jaggers et al. (2015), in a study of three models of course acceleration in math and English, reported higher probabilities of enrollment in and completion of college-level math and English courses.

According to Ley and Young (1998), as cited by Martin et al. (2014), successful graduates have clear goals, strong motivation, personal management skills, and self-empowerment. Intrusive advising, study sessions, and workshops help students develop these skills (Lipka, 2010). As students develop these skills, their respect for the learning process grows and feelings of deficiency turn toward possibilities for growth (Severs, 2017).

Within this context, the learning community environment is indirectly related to educational gains through student engagement (Rocconi, 2010). These communities promote "active learning [where] student engagement is expected to enhance knowledge acquisition" (Zachry & Schneider, 2010, p. 36), and this is strongly related to educational gains (Rocconi, 2010). This environment is influenced by faculty (Engstrom, 2008), and the inclusion of a strong focus on accountability throughout the learning community via students' courses, advising sessions, and mentoring supports a productive educational climate and facilitates the growth of a mindset that enhances success in the workplace.

Academically speaking, accountability, and holding all students to a high standard, is critical for a student's success. Research shows that helping students achieve high standards requires a level of self-awareness and self-regulation that many lack when entering college; this is especially true of underprepared or at-risk students (Ley & Young, 1998). Helping students understand the relationship between the choices they make, and their individual success, is also critically important. Researchers have found that successful graduates have (a) clear goals, (b) strong motivation, (c) the ability to manage external demands, and (d) self-empowerment (Martin et. al., 2014). At its core, success depends on personal accountability.

## Program Framework and Structure

In this section, we describe the framework, participant demographics, and program structure.

### Program Framework

As consultants for underperforming companies, Connors et al. (2004) focus on employee and organizational accountability to impact profitability. The authors, whose work was inspired by L. Frank Baum's *The Wonderful Wizard of Oz* (1900), were drawn toward the book's central theme of a "journey towards awareness" (p. 4). As Baum's characters traveled the yellow brick road in the land of Oz, they moved from "ignorance to knowledge, from fear to courage, from paralysis to powerfulness, from victimization to accountability" (p. 4). In that context, the authors devised four essential action steps:

- Step 1: See It – stepping "out of the victim cycle by recognizing that you are stuck in a circle of denial" and acknowledging "the reality of your situation no matter how unpleasant or unfair that reality may be" (pp. 68–69).
- Step 2: Own It – "accepting full ownership of all past and present behavior that keeps you mired in your current circumstances" (p. 89).
- Step 3: Solve It – "tackl[ing] real problems and remov[ing] obstacles" (p. 112).
- Step 4: Do It – "embracing your full responsibility for results and remaining answerable for your progress toward those results, regardless of how or why you managed to get into your current situation" (p. 135).

These four steps are connected to *above the line* behaviors (Connors et al., 2004; Connors & Smith, 2014), which are rooted in one's ability to take initiative, to be responsible, and to assert leadership. These traits stand in stark contrast to *below the line* behaviors such as waiting and seeing, covering one's tail, and finger pointing. Per Connors et al. (2004), an environment of accountability empowers individuals to conquer "their challenges and fears [to get] what they [want] by working together, doing their best, and finding the power within" (p. 4). This means avoiding a carrot and stick approach (Marciano, 2010), whereby students are rewarded for meeting minimum expectations, in favor of ongoing improvement and growth.

With these ideas in mind, we developed interventions and established procedures to enable C4 students to see school as part of their career, rather than as just preparation for it, and to embrace academic challenges as opportunities, rather than as obstacles to success.

### C4 Student Participants

In this article, developmental students refers to students enrolled in the General Studies (GNST) program in the University's Retention and Student Success (R&SS) unit. This group is comprised of students who meet the criteria for admission to the University, have at least one developmental placement in English composition (ACT subscore below 14), mathematics (ACT subscore below 15), or reading (ACT subscore below 17), and do not yet qualify for admission into their intended major. C4 participants come from the 60 to 75 first year GNST students who have developmental placements in all three areas.

In this article, we compare the first-year academic performance data of three C4 cohorts, which we label C4I (first year: 2017-18), C4II (first year: 2018-19), and C4III (first year: 2019-20), with that of eight years of GNST students (2012-19) with three developmental placements who did not participate in the program. We use interview data to determine the effect of the accountability framework on student thinking among the C4I, C4II, and C4III cohorts.

One of the initial procedures implemented following the C4 pilot group (C4P: 2016-17) was to require students to opt into the program. For us, this represents an expression of initial

intention toward a professional mindset. Without even being introduced to the program (beyond a basic understanding of acceleration and financial savings), the students have an immediate opportunity to perform at the highest level of accountability on the Oz scale as they choose to "Do It" by taking the initiative to be member of a C4 cohort. This process entails the Director of Students Academic Affairs sending a letter of invitation to all prospective GNST students with three developmental placements. Those who indicate interest are admitted to the cohort. Follow-up invitations are sent until a cohort of 23 students has been assembled.

**Program Structure**

C4 students take eight courses as a cohort across three semesters: English 1 and 2, Intermediate Algebra, Reading 1 and 2, Freshman Seminar, and Study Skills[1]. The semester-by-semester organization appears in Figure 1.

**Figure 1**

**Program Sequencing**

<table>
<tr><th>Fall Semester</th><th>Spring Semester</th><th>Fall Semester</th><th>Spring Semester</th></tr>
<tr><th>First Year</th><th>First Year</th><th>Second Year</th><th>Second Year</th></tr>
<tr><td>English 1 + lab</td><td>Reading 2</td><td rowspan="7">12 -15 Hours Outside of Cohort</td><td>English 2</td></tr>
<tr><td>Intermediate Algebra + lab</td><td rowspan="5">6 - 9 Hours Outside of Cohort</td><td rowspan="6">9-12 Hours Outside of Cohort</td></tr>
<tr><td>Reading 1</td></tr>
<tr><td>Freshman Seminar</td></tr>
<tr><td>College Study Methods</td></tr>
<tr><td>Study Session</td><td>Study Session</td></tr>
</table>

Although the C4 students place into developmental English (sub-100 level) and math (Beginning Algebra), we move them directly into enhanced versions of English 1 and Intermediate Algebra in alignment with recent acceleration approaches (Jaggers et al., 2015). Both courses include instructor-led workshops for specialized instruction and individual assistance to help students minimize achievement gaps (Arendal & Hane, 2014; Arendale & Hane, 2016; Brothen, 2012; Finney & Stoel, 2010; Kosiewicz et al., 2016; Yue et al., 2018).

Each cohort course features active learning strategies in which group work serves as the principal means for building academic connections among the students. During the first two semesters, C4 students participate in optional study sessions. Prior to each session, students submit a plan for how they will use their time; some participate in group tutoring provided by the Academic Literacies Center; many collaborate on related course work. These practices add another layer of assistance to increase student success and retention (Asmussen & Horn, 2014; Bettinger et al., 2013; Boatman, 2014; Bragg et al., 2010; Bremmer et al., 2013; Engstrom & Tinto, 2008; Wurtz, 2015; Zachry & Schneider, 2010).

Cohort courses, study sessions, and academic advising are managed by the program designers, which consists of the English, reading, and mathematics instructors and the program coordinator. The coordinator supports overall academic success and transition of the students

[1] English 1 and 2 are the two composition courses required for graduation. The second course focuses on papers based on primary research. Intermediate Algebra, the lowest course that satisfies the University's general education quantitative skills requirement, correlates most closely with high school algebra 2. The first of the two reading courses, Reading 1, emphasizes critical thinking skills, and the second, Reading 2, includes a research paper. Freshman Seminar orientates students to the University and offers guidance on building personal academic plans. The College Study Methods course introduces students to strategies for academic success.

between, within, and from different elements of the program. This is possible because the coordinator serves as the students' primary academic advisor while in GNST and as their secondary academic advisor once they move into their majors. In addition to course planning, the coordinator engages students in conversations about their academic challenges, arranges for tutoring help, and provides academic counseling.

In support of the cohort overall, the program designers meet every other week throughout the year to discuss student progress, course pedagogy and current framework implementations. These meetings add a layer of joint oversight, which illuminates the problems and successes impacting student progress.

**Further Implementations of the Framework**

The four-step journey from victimization to empowerment described by Connors et al. (2004) provided a structure to support the development of individual practices and habits of mind that could potentially lead to better outcomes. Figure 2 shows the interventions and procedures developed from the four steps and their application to the cohort courses.

**Figure 2**

**C4 Interventions and Procedures adopted from Connors et al. (2014)**

| Action/Activity | | Connection of Action/Activity to Four Components of Above the Line Behavior | | | | Description |
|---|---|---|---|---|---|---|
| | | See It | Own It | Solve It | Do It | |
| 1 | Reflect on strengths and weaknesses as part of academic advising | X | | X | | In advising sessions students identify an area they would like to improve during the academic year. Doing so involves seeing things as they really are, as well as the examination of blind spots (See It), and then devising a plan to improve in those areas (Solve It). |
| 2 | Shared course policies | | X | | | Shared course policies include behaviors such as email etiquette, use of electronic devices, and attendance. The idea behind this practice is to help students to begin to see the link between school and career, that is, for students to see themselves as a professional now (Own It). |
| 3 | Use of Services | X | X | X | X | Use of services includes attending office hours, going to the Tutoring Center or Writing Center, and appearing for optional study sessions. These practices promote seeking feedback (See It), making the link between school and career (Own it), building habits that will lead to ongoing academic success (Solve It), and taking action to improve their academic trajectory (Do It). |
| 4 | Revision | X | | | X | To move beyond meeting minimum expectations, students need to recognize where they need to improve (See it) and then embark on implementing those improvements in an effort to see their work as an ongoing process of making progress (Do it). |
| 5 | Evaluating group participation | X | | | X | Not only do students collaborate with each other, they also need to evaluate themselves (See it) and their collaborators (Do It) in an effort to raise their classmates toward self-empowerment and individual accountability. |

The Row 1 action, an aspect of academic advising, is meant to help students focus on personal improvement. The Activity/Action steps in Rows 2, 3, 4, and 5 are built into each

cohort course through class assignments or graded activities. Since none of the activities and actions in Figure 2 requires special academic aptitude, the students have an opportunity to take greater control over their academic trajectory, to assume responsibility for their own learning, to see learning as an ongoing process, and to embrace mistakes as opportunities for growth.

These activities are operationalized through Enhanced Learning Points (ELP). These points are awarded in each cohort course for the actions described in Figure 2. To earn an A grade in a cohort course, students need to accumulate ELP equivalent to 10% of the course grade. In terms of the framework, ELP are designed to encourage Solve It, Do It activity toward long-term development of behavior that strongly correlates with academic success. ELPs also work to build students' personal management skills and enhance their sense of self-empowerment which Ley and Young (1998), as cited by Martin et al. (2014), indicate are necessary for student success.

### Scalability and Sustainability

In designing the C4 program, we intentionally avoided course integration. From an instructional standpoint, effective integration often depends on personal chemistry among instructors, and from a practical perspective, there are cost considerations. To increase the likelihood of program expansion, from one to multiple cohorts per year, we wanted to avoid both obstacles.

Another issue is sustainability. The Oz Principle makes this possible. In the Learning Communities Demonstration Project, which involved semester-long programs, the authors found that the "short-term boost to educational attainment" cultivated by program interventions "subsequently plateau[ed and] …did not generally increase after the program semester" (Scrivener et al., 2008, p. 50). The Oz framework's focus on personal accountability in the context of above the line thinking is meant to mitigate that effect. For developmental students, whose success often depends on expending greater effort, it provides a potentially transferable means of connecting academic progress with career success.

## Methodology

For this study, we considered two principal sources of data: (1) comparative end-of-year academic performance and (2) coded interview results. For performance results we compared grade averages and retention measures between C4 participants and GNST non-participants with three developmental placements. For the interviews, conducted exclusively with C4 participants[2] and anonymized with pseudonyms, we determined the effect of the accountability framework on C4 students' thinking regarding their academic progress.

### Comparative Performance

We compared the academic performance of the three C4 cohorts (C4I (first year 2017-18), C4II (first year 2018-19), C4III (first year 2019-20)) with the first-year performance of eight years of GNST students (entry years 2012-19) with three developmental placements who did not participate in the program. A larger group of non-participants were included to provide a broader comparison. The data included first-to-second year retention rates, average cumulative GPA, course completion percentage, and the average number of DFW (D, F, Withdrawal) credits per student.

### Interviews

We conducted two sets of individual interviews with the C4I, C4II, and C4III students, once during the fall semester and again at the end of the spring semester. The program

[2] Per our IRB protocol (IRB # 160403), the 23 students who comprise the cohort sign a consent form.

coordinator conducted each interview, which was audio recorded and transcribed. In each interview, the coordinator asked students to compare past and present academic experiences, to determine how a hypothetical employer would rate their academic performance, to note areas of strength and weakness, and to relate their academic work with future career plans.

Subsequently, each interview was coded according to the above the line and below the line action steps of the Oz Principle (see Figure 3 for a breakdown). Two of the program designers independently read through each interview to identify statements in which the students expressed above or below the line behavior or thinking. They negotiated differences to produce a single set of highlighted statements related to the framework. Then, the other two program designers independently coded each highlighted statement according to the coding scheme in Figure 3. For a highlighted statement deemed above the line, the coder would determine whether the statement reflected See It, Own It, Solve It, Do It, or some combination, together with an accompanying descriptor (a-e). Alternatively, a below the line thinking statement was coded with one or more of the descriptors 5 through 10. For instances in which a highlighted statement reflected more than one action step or descriptor, multiple codes were assigned.

**Figure 3**

**The Oz Principle Framework Used for Coding Interview Data**

| | |
|---|---|
| **Above the Line** | **1. See it** |
| | a. See things as they really are. |
| | b. Examine your blind spots. |
| | c. Seeing it often has more to do with your ears than your eyes. |
| | d. Accountable people seek feedback. |
| | **2. Own it** |
| | a. To own it means to leave it better than you found it. |
| | b. Go the extra mile. |
| | c. Make the link. |
| | **3. Solve it** |
| | a. Look beyond the quick fix. |
| | b. Think as if your life depended on it. |
| | c. You've got to move a lot of dirt to get to the gold. |
| | d. Action often produces results, even if you don't know what you are doing. |
| | **4. Do it** |
| | a. Nothing great happens until you do something. |
| | b. You've got to want it more than you don't want it. |
| | c. Don't let gravity pull you down. |
| | d. Reasons become excuses as soon as you start using them to stop trying to solve the problem. |
| | e. Lift others above the line. |
| **Below the Line** | **5. Wait and see** |
| | **6. Confusion/tell me what to do** |
| | **7. It's not my job** |
| | **8. Ignore/deny** |
| | **9. Finger pointing** |
| | **10. Cover your tail** |

At the end of the initial phase of coding, the entire team reconvened to negotiate differences. For a statement with differing codes, the entire group determined a final code(s). If the two sets of codes for a highlighted statement aligned, they were kept and not discussed further. Once complete, the coordinator tabulated the number of above the line and below the line codes for each interview and translated raw code counts into codes per minute (CPM). Since we were particularly interested in how students' thinking changed over the course of the academic year, we computed the differences from Interview 1 to Interview 2:

- Change in above the line utterances: [CPM, Interview 2] - [CPM, Interview 1]
- Change in below the line utterances: [CPM, Interview 2] - [CPM, Interview 1]

In the Results section, we report on changes in participants' thinking from Interview 1 to Interview 2 as well as the correlation between those changes and academic performance.

## Results

The results presented in this section center on the main research question: To what degree does a learning community guided by an accountability framework impact the academic performance and attitudes of first-year developmental students? For academic performance, we compared cumulative grade and retention rates for the three cohorts of C4 students (C4I, C4II, C4III) with that of non-participating GNST over an eight-year span (entry year 2012-19). This information helped us to determine the academic impact of the program. For the attitude dimension, we used interview results to determine the degree to which the framework was beginning to take root. We consider that analysis in the second half of this section.

### Comparative Academic Performance Results

For comparative academic performance, we considered the following measures: first-year cumulative college GPA, the differential between high school and college GPA, DFW credits per student, non-return rates, and percentage of credits completed. These results appear in Figure 4. For each category, we conducted statistical tests: *t*-tests for grade results in columns 3, 4, 7, and 8 and proportion tests for the retention rates in columns 5 and 6

**Figure 4**

**Comparative Performance Results: C4 (I, II, III) Versus Non-C4 (2012-19)**

| Group | n | End of First-year GPA | High School GPA Differential | No Return Non-Academic | No Return Academic | DFW Credits per Student | Completion Rate |
|---|---|---|---|---|---|---|---|
| Non-C4 | 189 | 2.7 | -0.18 | 19% | 24% | 5.13 | 83% |
| C4I, C4II, C4III | 71 | 3.19 | 0.23 | 17% | 7% | 2.28 | 93% |
| p-value | | <.001 | <.001 | 0.849 | 0.004 | <.001 | <.001 |
| Effect Size (ES) | | 0.72 | 0.65 | | 0.49 | 0.59 | 0.53 |

On average, at the end of the first year, C4 students had a cumulative GPA about 0.5 points higher than non-C4. When comparing first-year college GPA with high school GPA, C4 students performed 0.2 GPA points higher than they did in high school while the opposite was true for non-C4 students. Based on the results in columns 7 and 8, the C4 students were less likely to need to repeat a course.

According to the statistical analysis, the probability of the differences in means being due to chance was less than 0.1%. Based on effect size measurements, the means between C4 and non-C4 differed by at least one-half standard deviation, a medium effect (McLeod, 2019). On average, for columns, 3, 4, 7, and 8, 70% of the C4 students performed above the non-C4 mean, and a randomly selected C4 student would have a 60% chance of having a better result than a non-C4 student (Magnusson, 2020).

The percentages in columns 5 and 6 depict first-to-second year non-return rates. The non-academic category includes students who left the University in Good Standing or who completed a total withdrawal not including WF (F in all courses at the time of withdrawal). The academic non-return rate includes those who were dismissed academically, left the University while on probation or academic warning status, or completed a total withdrawal with WF grades. On the basis of academic performance (column 6), non-C4 students were three times as likely to leave school after the first year as C4 students.

According to the statistical analysis, the difference in the non-academic return rates were very likely due to chance. The opposite was true for academic non-return, where there was only a 0.4% probability that the difference in proportion was due to chance. Based on the effect size measurement, the non-academic proportion results differed by about one-half standard deviation.

Taken in totality, C4 students earned higher grades, did better than they did in high school, and were more likely to return for a second year than non-C4 students. Practically speaking, when accounting for course acceleration (being moved to the next course) in English 1 and math taken together with lower per student DFW rates, the C4 program reduced time-to-degree by 11 credits, nearly the equivalent of one semester.

**Relationship between the Framework and Performance Results**

To determine program effect with a second method, we measured the relationship between the framework, based on the Oz Principle, and first-year academic performance for the C4I, C4II, and C4III groups. We looked at two correlations: (1) changes in above the line thinking from Interview 1 to Interview 2 and grade averages in English 1, Intermediate Algebra, and Reading 2, and (2) changes in above the line thinking and cumulative first year DFW credits. The results appear in the Figure below.

**Figure 5**

**Correlation Results: Change in Codes per Minute Versus Grade Results**

| | Grade Average in English 1, Intermediate Algebra, Reading 2 | DFW Credits per Student |
|---|---|---|
| **Change in Above the Line Codes from Interview 1 to Interview 2** | $r$ = 0.33<br>$p$-value = .013 | $r$ = -0.32<br>$p$-value = .016 |

For (1), for each student, we paired the difference between the number of above the line codes per minute (CPM) from Interview 1 to 2 with the combined grade average for English 1, Intermediate Algebra, and Reading 2. The correlation test yielded a *p*-value of .013, equivalent to a 1.3% chance that the computed correlation of $r = 0.33$ was due to chance. The strength of the relationship, given by the coefficient *r*, accounts for roughly 10% of the variability between the two variables. Bosco et al. (2015), who conducted a large-scale study of effect sizes in social science research, found that a correlation of 0.33 would lie in the upper quartile of social science correlation results relating behavior and attitudes.

We found a similar result for (2). For each C4 student, we paired the arithmetic difference between above the line CPM and DFW credits. The correlation test yielded a *p*-value of .016, which equates with a 1.6% probability that the computed correlation of $r = -0.32$ was due to chance. In this case, the relationship was negative, accounting for the inverse relationship between above the line expressions and poorer academic performance. Similar to the grade average correlation, the correlation coefficient of -0.32 indicates a medium effect accounting for about 10% of the variability.

Although not as sharp as the comparative performance data, the correlation results indicate the existence of a non-trivial connection between the framework and academic performance. In the next section, we look further at the extent to which the framework took root in C4 student thinking.

**The Framework and Student Thinking**

For the analysis in this subsection, we carried out pairwise *t*-tests for above the line thinking and a Wilcoxon Signed-Rank test for below the line thinking. For the former, we compared above the line CPM for Interview 1 with those from Interview 2. In this case, the Interview 1 mean was 1.1 CPM and the Interview 2 mean was 1.5 CPM. The difference in means is statistically significant ($t = 2.93$, $p = .005$, ES = .39). The *p*-value reveals a 0.5% probability that the difference was due to chance, and the effect size, deemed medium by McLeod (2019), indicates a difference of nearly 0.4 standard deviations between the means. This means that 65% of the Interview 2 CPM exceeded the Interview 1 mean, with a 60% chance that a randomly selected C4 student expressed more instances of above the line thinking in Interview 2 (Magnusson, 2020).

On the other hand, the Wilcoxon test for below the line CPM yielded a statistically insignificant result ($z = -.715$, $p = .475$). In this case, differences between Interview 1 and Interview 2 were much more likely due to chance. The former pairwise comparison indicates a high probability that above the line thinking was beginning to take root, while the latter comparison reveals the deeply embedded nature of below the line thinking.

In addition to pairwise statistical tests, we looked at the changes in above the line and below the line expressions in terms of individual improvement/regression. In the accompanying Figure, the first row for above the line is marked Improvement (columns 1, 2) or Regression (columns 3, 4); Improvement indicates a higher number of CPM in the second interview; Regression gives the opposite result.

The second row for below the line is marked Improvement (columns 1, 3) or Regression (columns 2, 4). In terms of the framework, a lower number, or no change in the number of CPM, indicated improvement. Because below the line behaviors can be strongly ingrained, we treated no change from the first to the second interview as representing improvement. On the other hand, an increase in the number of below the line CPM constituted regression.

**Figure 6**

**The Framework in Terms of Individual Improvement/Regression**

| **Above the Line** | Improvement | Improvement | Regression | Regression |
|---|---|---|---|---|
| **Below the Line** | Improvement | Regression | Improvement | Regression |
| **Frequency** | 22 | 14 | 12 | 7 |
| **Percentage** | 40% | 25% | 22% | 13% |
| **Improvement** | Both | Above the Line | Below the Line | Neither |

The frequencies appear in the second row. Of the 55 C4I, C4II, and C4III students who participated in both interviews, 22 (40%) showed improvement in both categories, 14 (25%) showed improvement in above the line thinking but more instances of below the line thinking in the second interview, 12 (22%) showed improvement in below the line thinking but a decrease in expression of above the line thinking, and 7 (13%) of the students showed evidence of regression in both categories. Taken together, 48 (87%) of the 55 students showed improvement in one or both categories.

To provide context for these categorizations, we selected a representative student from each category, one who showed (1) improvement in both categories, (2) improvement in above the line thinking and regression in below the line thinking, (3) regression in above the line and improvement in below the line, and (4) regression in both categories.

**Figure 7**

**Examples of Students in the Four Categories of Improvement and/or Regression**

| | Above the Line Codes per Minute | | Below the Line Codes per Minute | |
|---|---|---|---|---|
| | **Fall** | **Spring** | **Fall** | **Spring** |
| **(1) Nicky** | 0.8 | 2.8 | 0 | 0 |
| **(2) Emerson** | 1.3 | 2.1 | 0 | 0.4 |
| **(3) Riley** | 1.9 | 1.6 | 0 | 0 |
| **(4) Jamie** | 1.7 | 0.8 | 0 | 0.4 |

In reference to the Figure above, we now discuss each student in more detail. After each excerpt, we include the code(s) based on the scheme in Figure 7. Codes assigned as See It or Own It will be associated with intention and codes assigned as Solve It and Do It will be associated with action. We begin with Jamie, who demonstrated regression in both categories.

***Jamie***

Although Jamie shows evidence of regression, in both above the line statements and below the line thinking, the student seems to recognize what they need to work on, as evidenced in the following excerpt from the fall interview:

> I'd say organization, definitely organization for me. I do have a planner, but I got to use that more. I definitely need to use that more. I'd say studying. I don't really know how much to study and when to not study. Sometimes I study for, I don't know, two and a half hours and then I take a five-minute break and then I study again for a whole other two hours. I don't know if that's good, but I'd definitely say studying, test-taking. Yeah, I think that's it, and homework, but that goes in with organization to because, yeah. (Fall interview, code: 1a, 1b, 2c, 4a – See It, Own It, Do It)

Jamie made similar statements during the Spring interview. For example, when asked how an employer would respond to the student's performance in a specific course, Jamie said, "One thing that an employer would potentially look at is me trying my best, but still not seeking my full potential. So, he's looking at me like I gave up. So, when things got hard, I quit" (Spring interview, code: 1a, 1b – See It). Here, we see evidence of regression in Jamie's above the line thinking; it appears the student is unsure of how to move forward in their academic career.

There was no evidence of below the line statements in the Fall interview, but Jamie made below the line expressions in the Spring interview. In one instance, Jamie remarked about feeling defeated despite working harder in college than in high school. In reference to a course outside the C4 Scholar Program, the student said, "I felt like I did the most I possibly could, how am I supposed to do more?" (Spring interview, code: 9 - Finger Pointing). While there is a growing realism about the challenges of college, a sign of growth, Jamie, like others who showed regression in both categories, had difficulty with persistence.

Second, we present Riley, who did not show improvement in above the line thinking but maintained zero instances of below the line thinking across the academic year.

***Riley***

When comparing the interviews, Riley shows intention of above the line behaviors in the Fall semester but is unable to fully make the jump towards action in Spring. For example, in the Fall interview Riley shows intention regarding time management skills in response to an interviewer question about areas of improvement:

> In high school, you had a teacher that always made sure the work was due. Like, almost every single day they would remind you that like, 'Hey, this due by Friday or this is due next week.' Now, I'm seeing in college, college teachers don't do that. They'll tell you once and expect you to do it by a certain date. So, I've got to make sure I remember those due dates and make sure I do it ahead of time. (Fall interview, code: 1a, 1b, 2c – See It, Own It)

In the Spring interview, although Riley appears to begin to connect goals with action, the student remains tentative. For example, when the student was asked how they turn things around the student said:

> I would ask my teachers for extra help and my other classmates for extra help. And I'll also ask if there's anything I can like... if there's any extra credit I can do. And ask if there's like a tut[or]... if I could go to tutoring to get the extra help in that class, I'll try to get as much help as possible to help myself correct my mistakes in those classes because I need... If I'm struggling and I need leverage to help myself progress with everybody else, and if I stay quiet and if I'm too embarrassed to ask other people for help because I'm afraid if they think I'm like, not that smart or something, then that would hold me back in life. So I think reaching out to other people and admitting that you're struggling in a specific area and getting that extra help would really benefit me. (Spring interview, code: 1a, 1d, 2c – See It, Own It)

This quote demonstrates how Riley's intention has yet to manifest into action (Solve It, Do It).

Third, we present Emerson, who showed improvement in above the line but regression in below the line.

***Emerson***

Emerson gave evidence of moving from intention to action. In the Fall interview, Emerson acknowledged the existence of standards to be successful but the confidence and drive to meet those standards had not yet manifested itself. When asked by the interviewer what it meant to be successful in school versus the workplace, the student said, "For school, you got to meet up with different standards in each class, where your workplace, you got to work up to standards" (Fall interview, code: 1a, 2c – See It, Own It).

When interviewed in the Spring, Emerson seemed to have gained confidence based on movement from intention (Fall: 1a, 2c - See It, Own It) to action (Spring: 1a, 1e, 2c, 4a – See It, Own It, Do It). This is evidenced by the student's response to the interviewer about working harder:

> Well, I was like, 'Well, no one is not going to do it for me, so I'm just going to do it for myself.' And so, I just started sitting down and actually studying for a couple of hours and stuff. And well, with me and [student], [student] is struggling and stuff. And I sit down and actually do my work, but I don't know what [student]'s doing. But she'll ask me to help her and I'll help her because I actually understand the material because I worked at it. (Spring interview, code: 1a, 1e, 2c, 4a – See It, Own It, Do It)

Here, Emerson's actions involve implementing the perspective on standards expressed in the Fall. This constitutes a move from intention to action across the academic year. However, while

Emerson showed gains in above the line thinking, there was regression in below the line thinking.

In the Spring interview, when responding to the interviewer about difficulties in a specific class, Emerson said:

> I think it's, it's the textbook that I have to read and then I take a quiz on it and stuff, and I can't really comprehend it. And then it's just fast-moving pace. It's like a chapter a week and stuff. It's like we take a quiz and then she talks about it. And then she talks about it for 30 minutes and then we're on the next chapter. And then I can't comprehend anything that and scenarios. (Spring interview, code: 9 – Finger Pointing)

Emerson's comments are indicative of below the line thinking because of the student's focus on external events. However, there is some evidence of growth, as Emerson is beginning to see the need to adapt to the pace and challenge of the college environment.

Finally, we present Nicky, who demonstrated improvement in both categories.

***Nicky***

For Nicky, positive outcomes are evidenced by statements that show growth from the Fall to Spring. In the Fall, Nicky expressed what she needed to do to be successful and, when asked by the interviewer to list words that came to mind when thinking of school or college, she listed, "Dedication, studying, putting in the work, good grades" (Fall interview, code: 1a – See It). Nicky's growth is apparent in the Spring semester interview when the student was asked to describe an instance of not giving up: "That first [Chemistry] exam, I got 45 out of a hundred. That could have been me giving up and just saying I'm done. But…I took that as an opportunity to change" (Spring interview, code: 1a, 2c, 4b – See It, Own It, Do It).

The Spring interview provided opportunities for all students to reflect on changes they made during college in relation to their high school behavior. For Nicky, instead of giving up, like she might have done in high school, the student took on a challenge to succeed in their college course work. These excerpts from Nicky's interviews appear to illustrate clear movement from intention (Fall: 1a – See It) to action (Spring: 1a, 2c, 4b – See It, Own It, Do It) across the academic year.

The interview excerpts, even in Jamie's case, show the beginning of a possible shift toward above the line versus below the line thinking. Although Jamie struggles with persistence, the student gives evidence of intention coupled with a desire to move forward. However, the movement toward action continues to be elusive. The same can be said for Riley, although in this student's case, there is less below the line thinking. On the other hand, Nicky and Emerson give evidence of moving from intention toward action. In these cases, above the line thinking seems to be taking root.

**Discussion/Conclusion**

During the first year, C4 students, when compared with non-participants with similar developmental placements, performed better academically. C4 students earned higher grades and were more likely to be retained. When accounting for course acceleration (being moved to the next course) in English 1 and math together with lower DFW rates, program participation reduced time-to-degree by 11 credits. This begs the question: Can the improvement in academic performance be sustained beyond the first year?

According to the Learning Communities Demonstration (Visher et al., 2008), comparative gains in student performance tended to diminish after interventions were removed (Scrivener et al., 2008). This finding suggests that the effect of an intervention, in order to be sustained, may need to be coupled with a change in thinking.

Having clear goals, strong motivation, personal management skills, and self-empowerment are foundational to academic success (Ley and Young, 1998 and Martin et al., 2014). These traits are rooted in personal accountability, the seed of which is above the line thinking, characterized by the ability to embrace challenges and to manage failure. This requires a change in thinking.

To change thinking, we adopted the Oz Principle as a program framework. Student selection, based on an opt-in strategy, is intended to help students acknowledge their need for change (See It). Students get their first taste of agency before they have stepped foot in a classroom by making the decision to participate in the C4 Program. The course policies and activities developed by the instructors, reinforced by elements such as Enhanced Learning Points (ELP), are meant to inspire students to take action (Do It). Participation in the relational advising offered through the C4 Program, which extends throughout a C4 student's time at the University, encourages students to engage in personal reflection and establish strategies to promote forward, positive momentum (Own It, Solve It). Finally, participating in accelerated courses (with directed instructor support) intensifies the academic experience and helps participants to recognize academic deficiencies (See It) and find ways to overcome them (Solve It).

The correlation results demonstrated a non-trivial connection between the framework and academic performance. Whether that connection takes hold long term may depend on students' abilities to avoid below the line thinking and move from intention (See It, Own It) to action (Solve It, Do It). For Jamie, the struggle continued in both areas, although there was growing awareness of a connection between progress and accountability. In Riley's case, this student steered clear of blame but had difficulty moving beyond intention. Emerson, on the other hand, continued to struggle with below the line thoughts, even though the student took concrete steps to accept responsibility. In Nicky's interviews, there was clear evidence of action, and, at the same time, the student avoided the temptation to blame others for any challenges encountered. For these students, and others from the group they represent, the effect of tapering program interventions could be like the Learning Communities Demonstration; as interventions are reduced, students revert to previous behaviors. To avoid that, we have created a Standard Operating Procedure manual (SOP); the central objective, beyond providing a means for program expansion, is to strengthen the impact of the framework on policies, course practices, and advising to support continued, long-range growth beyond the first year.

The SOP reflects the overarching philosophy of the C4 program: overcoming academic deficiencies is difficult; doing so requires persistent, consistent effort sustained with ongoing support. It contains a more detailed description of coordinator duties, with particular emphasis on aspects of relational advising that encourage personal accountability. This involves having the students draft personal improvement plans, done in consultation with the coordinator, for addressing areas of weakness as well as weekly check-in meetings when difficulties arise. The SOP also includes a revised invitation letter and a student behavioral contract. Both make explicit reference to the framework.

While our current practice has been informed by the framework, we have, to this point, communicated its underlying principles implicitly. For the cohort courses, we have revised the learning objectives for University Seminar and Study Skills courses to emphasize strategies to avoid below the line thinking, to develop reflective practices to cultivate intention (See It, Own It), and to devise steps to move toward action (Solve It, Do It). The use of ELP is a case in point, as students have tended to see these points as extra credit. For future cohorts, we intend to communicate explicitly the rationale for policies and activities and their connection to the Oz

Principle. For a C4 Scholar, achieving consistent success and dealing productively with failure are manifested in a climate that enables students to see it, own it, solve it, and finally, do it.

Through the development of accountability, as presented by the framework, students gain a sense of agency that begins with accepting the invitation to join the cohort. Their agency continues to develop in their courses through further exposure to the sequence of intentionality presented within the Oz Principle. Finally, and pivotally, students' ongoing advising relationship encourages their development of independent agency and a continuous movement toward action. As the Oz Principle states, "nothing great happens until you do something" (Connors & Smith, 2014, p. 101).

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