

The Florida Literacy Journal



Message from FLA President, Dr. Iris Borghese

The Florida Literacy Association (FLA) is a group of working, passionate professionals who volunteer their time, talents, and expertise to further the cause of literacy in our state. As the new President, I am so incredibly honored to be part of a team so clearly focused on the mission of our organization. That mission is **Promote quality literacy instruction, clarify educational issues for decision makers, support research in literacy, and advocate life-long reading.** As a board, we all agree that one excellent way we carry out our mission is through our publications such as the *Florida Literacy Journal (FLJ)*.

Florida Literacy Journal is a peer-reviewed publication of the Florida Literacy Association. Published three or four times a year, this publication offers scholarly writings of educators, working teachers, graduate students, university/college faculty and others. Authors submit manuscripts of their original studies, observations, literature reviews and other work for peer review by FLJ's review team. Using a standard rubric, which stresses the submitted work's pertinence to the FLA audience and classroom practice, the reviewers make recommendations, and the editors compile accepted articles for publication.

This fall edition showcases articles with ideas that impact literacy acquisition and instruction. The FLA editors have selected article submissions which help us reflect on our practice and support our endeavors toward fulfilling our mission! The articles highlight research-proven instructional practices and concepts that impact student learning. I would like to thank our publication committee and members of the review team for dedicating their time and expertise to ensuring that *Florida Literacy Journal* reflects high quality, relevant, and beneficial to educators. It truly is a labor of love!

The Florida Literacy Association invites you to join our passion for life-long learning and share your passion for learning with others. As educators, you combine content expertise with the science of learning and the art of teaching to make learning come alive in your classrooms EVERY day! Please take some time to immerse and recharge yourself with this edition of *Florida Literacy Journal!*

Thank you for choosing to educate our Florida students! On behalf of the FLA Board, we appreciate you and wish you a happy, productive, and successful 2023-2024 school year.

Dr. Iris Borghese
Florida Literacy Association President
State Regional Literacy Director



Message From FLA Chair of Publications and Literacy Projects, Dr. Robert Kelly

It is a privilege to present to you the newest edition of the Florida Literacy Journal, a peer-reviewed periodical of the Florida Literacy Association. In this edition, the team features insightful articles that enhance our understanding of literacy education. "Examining Preservice Teachers' Attitudes and Behaviors Toward Reading: Does the Gift of Time Make a Difference?" shows how class time for reading positively impacts preservice teachers' attitudes. "Embracing Transdisciplinary Instruction Through Differentiation: A Project-Based Learning Approach" emphasizes integrating diverse disciplines to improve student engagement.

"The Skill and Will to Pass High-Stakes Reading Tests in High School" presents strategies to help students from low socioeconomic backgrounds improve their reading scores and motivation. "Principals' Perceptions and Experiences with School Sustainability Programs" identifies barriers to implementing green school programs, such as a lack of faculty support. Lastly, "The Art of Classroom Conversation: Building Productive and Purposeful Talk" provides strategies for effective academic discussions to enhance learning. These articles offer valuable insights and practical strategies for educators.

As the new Chair of Publications, I extend my sincere gratitude to the authors for choosing the *Florida Literacy Journal* to disseminate their research and practices. I would also like to thank Dr. Joyce Warner for her years of dedicated service as the Publications Chair and. Joyce has been a champion of research as the foundation of teaching and learning, and her contributions have significantly elevated the journal's quality. I look forward to continuing what Joyce and other colleagues have worked so hard to develop for our education community.

I am excited about our next issue, which will focus on transdisciplinary learning, leading, writing, and teaching. We look forward to continuing to provide a platform for valuable research and innovative practices in literacy education.

Thank you for your continued support and engagement with the *Florida Literacy Journal*.

Dr. Robert H. Kelly, Jr.
Florida Literacy Association
Publications and Literacy Projects Chair
President and CEO, READ USA, Inc.



Message from FLJ Editors

This edition of the Florida Literacy Journal takes a deep dive into the complex domains of transdisciplinarity and transdisciplinary learning and teaching. The articles in this issue traverse the crossroads of transdisciplinary approaches, shedding light on various facets of this educational paradigm. One of the key areas explored is the implementation of transdisciplinary instruction through differentiation. This involves tailoring teaching techniques to meet individual and diverse student needs, thereby fostering an inclusive learning environment. The articles delve into practical strategies and theoretical underpinnings of differentiated instruction within a transdisciplinary framework.

The issue also addresses the topic of high stakes reading tests in high schools. It critically examines the impact of these tests on students' learning experiences and outcomes and discusses ways to navigate the high-pressure environment they create. The article propose transdisciplinary approaches to reading instruction that can help students better prepare for these tests.

Furthermore, the journal explores school sustainability programs through the lens of transdisciplinary learning and teaching. It discusses how these programs, which often involve elements from various disciplines, can benefit from a transdisciplinary approach. The article highlights successful case studies and provide insights into how schools can integrate sustainability into their curricula effectively.

In essence, this edition of the Florida Literacy Journal offers a comprehensive exploration of transdisciplinarity in education. It provides educators, researchers, and policymakers with valuable insights and practical strategies to enhance learning and teaching in today's diverse and interconnected world. It invites readers to consider the potential of transdisciplinary approaches in shaping future educational practices and policies.

As we envision the future, it is time for us to expand our thinking about literacy to include robust research from various disciplines available and share it with practitioners. As you explore these articles, we hope that you will ponder how these initiatives and trends might influence or alter your approach to teaching. This issue encourages readers to consider the potential of transdisciplinary learning and teaching in shaping future classroom practices

As Editors of the FLJ, we take this opportunity to express our sincere gratitude to authors who have chosen FLJ to disseminate their research and practice. Further, we would like to thank Joyce Warner, our vicechair and publications chair, reviewers, and other supporting staff for the success of this journal. We are more than happy to receive contributions for our next issue (Transdisciplinary learning, leading, writing and teaching) from teachers, doctoral candidates, teacher-educator researchers, advocates of teaching and learning, and scholars to ensure the consistency and the success of the Florida Literacy Journal.

Wishing peace and safety to all,

Elsie Lindy Olan
(University of Central Florida)



Audra Leigh Greuel
(Lake Brantley High School)





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Transdisciplinary Learning, Leading, Writing and Teaching

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Call for Manuscripts:

The editors invite submissions of manuscripts for *The Florida Literacy Journal*, the refereed journal of the Florida Literacy Association. We invite submissions geared toward improving literacy instruction and innovation at all levels with a firm grounding in current theory and research. Suggested topics include literacy project descriptions, research or theoretical pieces with pedagogical implications, or issue-centered pieces addressing timely literacy topics of local, state or national interest. Preference is given to articles that most directly impact Florida learners. While theoretical and research articles are invited, please keep in mind that this is a journal primarily for FLA members, who are predominantly practicing teachers and literacy specialists. We encourage articles from PK-12 and adult-level practitioners, literacy researchers and doctoral students, as well as articles written by other experts in the field.

The *Florida Literacy Journal's* audience is largely composed of PK-12 practitioners in the state of Florida. The FLJ editors are interested in exploring topics of interest to Florida educators and valuable in their daily literacy practices. We welcome submissions from researchers as well as PK-12 teachers. The thematic calls listed below are not intended to be exhaustive, but merely meant to be helpful to authors as they consider topics for publication. Please review the submission guidelines before submitting a manuscript.

Submission Guidelines are online at: <http://flareads.org/wp-content/uploads/2020/04/FLJ-CallForSubmissions2020.pdf>

APA 7th edition in the Call for Manuscript

Guidelines https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html.

Ongoing Annual Theme: Florida Standards in Action

FLJ has an ongoing interest in submissions related to the implementation of the Florida's B.E.S.T. Standards. Manuscripts that highlight how individual teachers have adapted their instruction to integrate the arts, technology, and the content areas are of particular interest. We also have interest in articles that discuss how districts have addressed the challenges and lessons learned related to the implementation of Florida's B.E.S.T. Standards

Ongoing Call for Book Reviews

FLJ has an ongoing interest in reviews of professional texts related to teaching and the themed calls for 2022-23. Reviews should be between 750-1000 words and should offer an overview of the book, not a detailed synopsis or an in-depth essay. Examples of published book reviews can be found in previous editions of FLJ.

Upcoming Themes

Classroom Teachers as Leaders- Fall 2024-Vol. 4 No. 2

**Examining Preservice Teachers' Attitudes and Behaviors Toward Reading: Does the Gift
of Time Make a Difference?**

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Abstract

Benevides and Peterson (2010) reported that preservice teachers do not come into teacher education programs with high levels of reading competency or with consistently positive attitudes toward reading. Further, Applegate et al. (2014) found low levels of enthusiasm for reading among undergraduate education majors. The purpose of this study was to examine reading attitudes and behaviors of elementary education majors enrolled in a reading diagnosis course. Specifically, we compare preservice teachers' reading attitudes and behaviors at the beginning of the course and again at the end of the course after students were given class time to read and discuss children's books with peers. In this article, we discuss the results of this study and provide suggestions on how teacher education programs can implement similar reading initiatives.

Keywords: reading attitudes and behaviors, preservice teachers, education programs

Studies have suggested that teachers' ability to encourage students to read may be linked to teachers' personal reading habits (Cremin, Mottram, Bearne, & Goodwin, 2008; Cremin, Mottram, Collins, Powell, & Safford, 2009). In a study examining teachers' personal reading

habits, McKool and Gespass (2009) found that most teachers value reading as a recreational activity, however, only about half read for pleasure on a regular basis. More importantly, they found that teachers who model recreational reading can foster a love of reading in their students. Further, Baba and Affendiz (2020) indicated that education students' reading habits are highly impacted by their teachers during the students' early schooling years. Moreover, McDowell (2022) noted that teachers who read for pleasure can model, knowingly and unknowingly, the knowledge, practices, values, beliefs, and language of being a reader, thus teaching children not just how to read, but how to be a reader. In other words, teachers reading for pleasure is crucial as they are literacy role models for their students (Gambrell, 1996). Yet, many preservice teachers do not read for pleasure, avoid reading for fun, and are not knowledgeable about children's literature.

Benevides and Peterson (2010) reported that preservice teachers do not come into teacher education programs with high levels of reading competency or with consistently positive attitudes toward reading. In a study with preservice teachers, Applegate and Applegate (2004) noted that over half of the study participants were not enthusiastic readers. In a more recent study, Applegate et al. (2014) found similar results of low levels of enthusiasm for reading among undergraduate education majors. Haverback (2013) noted that it is troubling that elementary preservice teachers avoid reading for fun. She states that "having an elementary school teacher who does not read is akin to having a mechanic who does not drive" (Haverback, 2013, p. 32). However, Vansteelandt et al. (2022) are encouraged that positive reading attitudes can be maintained or increased during teacher preparation programs.

Applegate et al. (2014) further argue that preservice teachers cannot inspire their students to read if they are not inspired to read. They suggest that teacher education programs need to do

more to address the importance of pleasure reading and encourage personal reading among preservice teachers (Applegate et al., 2014). The purpose of this study was to examine reading attitudes and behaviors of elementary education majors enrolled in a reading diagnosis course. Specifically, we compare preservice teachers' reading attitudes and behaviors at the beginning of the course and again at the end of the course after students were given class time to read and discuss children's books with peers. In this article, we discuss the results of this study and provide suggestions on how teacher education programs can implement similar reading for fun initiatives.

Methods

This study sought to examine the reading attitudes and behaviors of preservice teachers using descriptive survey analysis. A total of 38 preservice teachers across three semesters participated in the study during the 2020-2021 and 2021-2022 academic years. The participants were 19-20 years old, and all were women majoring in elementary education at a small liberal arts university. We used a convenience sample of undergraduate students who were enrolled in a reading diagnosis course. The course is the third reading course as part of the elementary education program and taken during the junior year. Although this study was part of a required course for elementary education majors, participation was voluntary and not a graded part of the course. The students were given the gift of class time (approximately 15 minutes) to read, and the course professor suggested they read for fun outside of class at least five days each week throughout the semester. No minimum time requirement was provided. The participants also participated in book discussions that varied between 20-30 minutes at the end of each 180-minute class session. For the book discussions, students would form small groups of two to three.

The composition of the discussion groups was flexible as students would often join multiple groups to listen to specific book talks.

The survey instrument used in the study was adapted from the *Denver Reading Attitude Survey* developed by W. Alan Davis and Lynn Rhodes (1993) and consisted of fifteen items including positively and negatively stated items. For example, “I love to read books for fun” and “I talk about books with my friends” are positively stated items, whereas “I used to enjoy reading books in elementary, middle, and high school, but I don’t anymore” and “I rarely read books except for when I have to for school assignments” are negatively stated items. Fourteen items included four response categories ranging from strongly disagree to strongly agree. One item asked participants to rate the kind of reader they are and included five response categories ranging from Very Poor to Very Good. The survey was provided online through Qualtrics, which allowed preservice teachers to quickly respond to each item by checking a box. The survey was distributed during the first week of class and again on the last day of class. Qualtrics provides researchers with a powerful platform for survey data collection and analysis. Its user-friendly interface, customizable survey design, efficient data collection methods, and robust analysis tools make it a valuable resource for generating meaningful insights from survey data. Informed consent was the first question on the survey. Responses were anonymous so researchers were not able to identify the students who participated. In the three semesters data was collected, all students enrolled in the reading course consented to be in the study.

To focus the analysis, the survey items were grouped into four categories based on the purpose of each question: logistics, social, academic, and self-perception. The *logistics* category includes survey items that address having the time to read and the types of materials selected to read. The *social* grouping includes items that relate to the social aspect of reading such as

sharing books with friends. The third category titled *academic* includes items that relate to behaviors that use reading as a conduit for learning. Finally, the *self-perception* category includes items that focus on how preservice teachers feel about themselves as readers. Qualtrics was used to analyze the data using mean scores for both the pre and post survey. We chose to do a simple comparison of mean data as the sample size was small and we were examining basic changes in behavior and patterns among pre-service teachers.

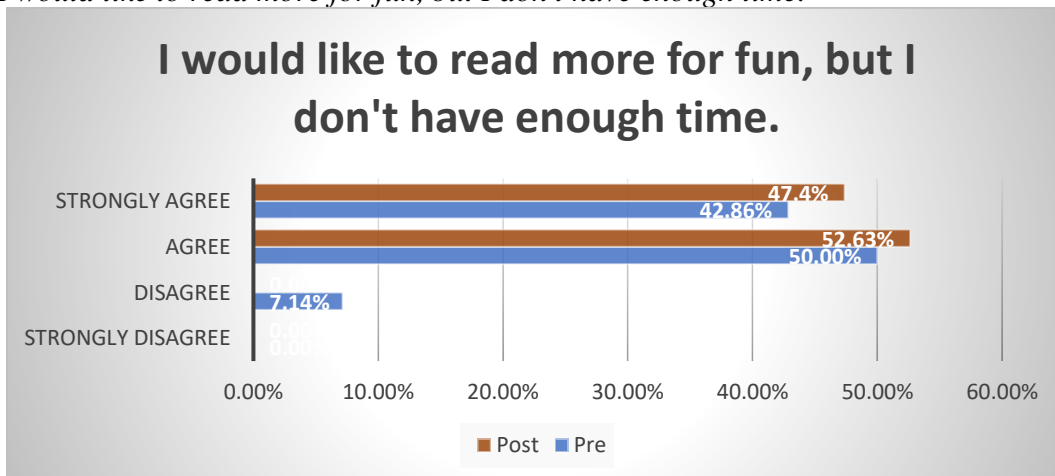
Results

Preservice teachers were asked to respond to a series of statements regarding their reading attitudes and behaviors. In this section, we describe the results for each of the four categories: logistics, social, academic, and self-perception.

1. Logistics. There were four survey items in this category.

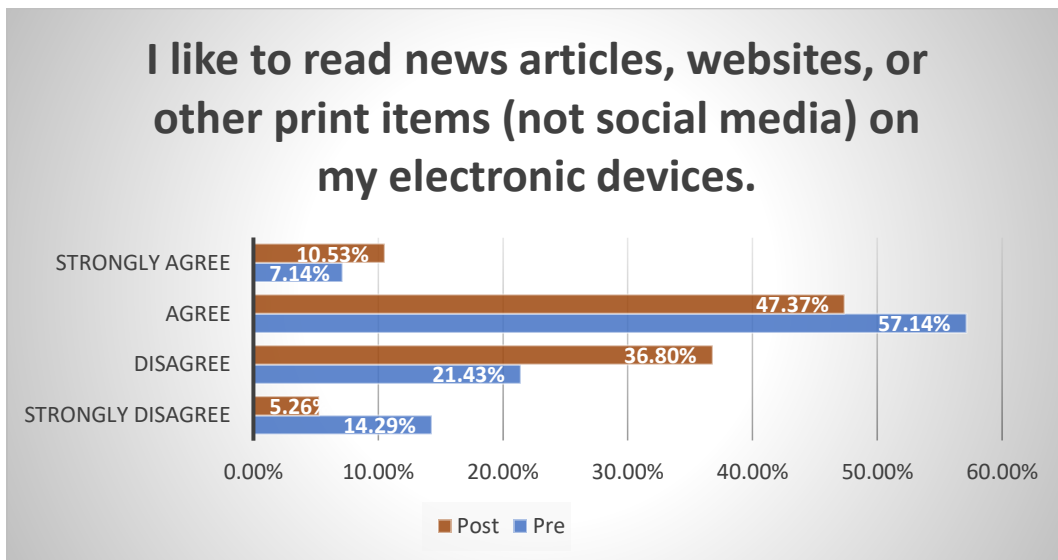
- I would like to read more for fun, but I don't have enough time.
- I like to read news articles, websites or other print items (not social media) on my electronic devices.
- I read newspapers.
- I read more than one book by an author I like.

Item: I would like to read more for fun, but I don't have enough time.



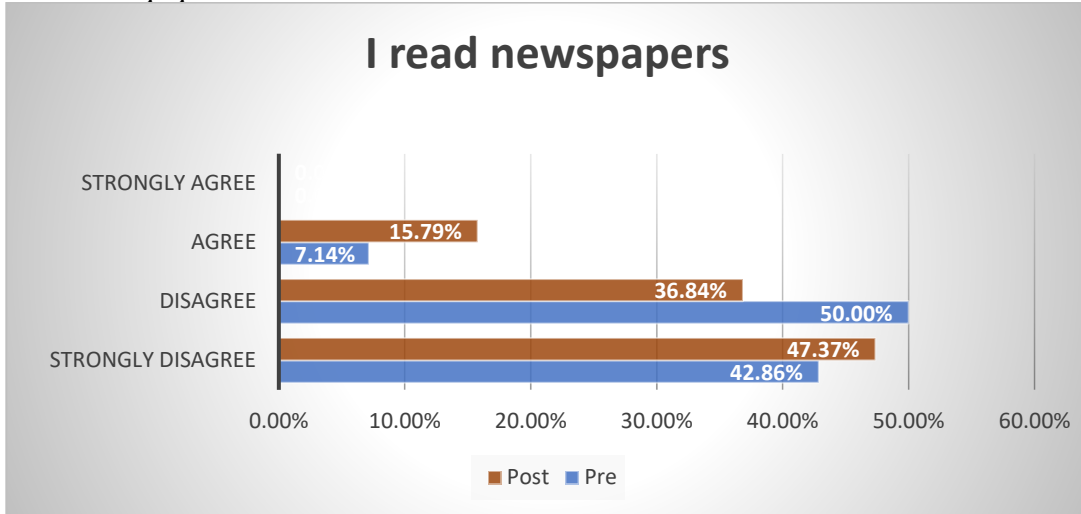
At the beginning of the semester, most participants (92.86%) stated they would like to read more for fun but did not have enough time. However, at the end of the semester, all participants agreed with this statement. Respondents who did not agree with this statement at the beginning of the semester, agreed at the end of the semester.

Item: I like to read news articles, websites, or other print items (not social media) on my electronic devices.



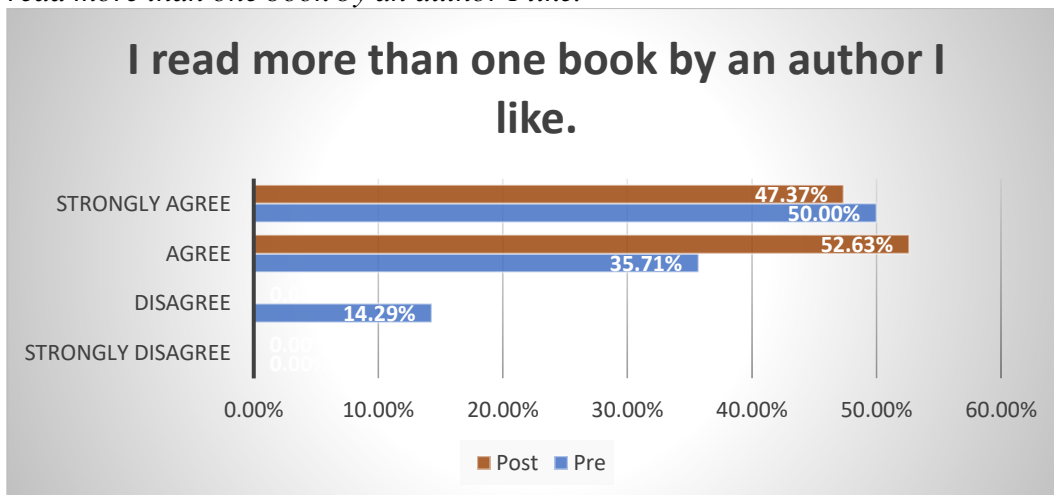
Sixty-four percent of respondents in the pre-survey agreed (57.14%) or strongly agreed (7.14%) that they liked to read news articles, websites, or other print items (excluding social media) on electronic devices. Just under 26% disagreed with this statement. However, post-survey data show a drop in liking to read on electronic devices (57.9%), with the largest shift in the disagree category (moving from 21.4% to 36.8%).

Item: *I read newspapers*



The item, *I read newspapers*, revealed a slight shift from the beginning to the end of the course. At the beginning of the course, just over 92% of the students stated that they did not read newspapers with 43% strongly disagreeing with the statement. Only seven percent agreed with this statement. The survey results at the end of the course showed 16% of the participants agreeing with this statement (a slight increase). However, the percent of participants with strongly disagree responses also rose to 47%.

Item: *I read more than one book by an author I like.*

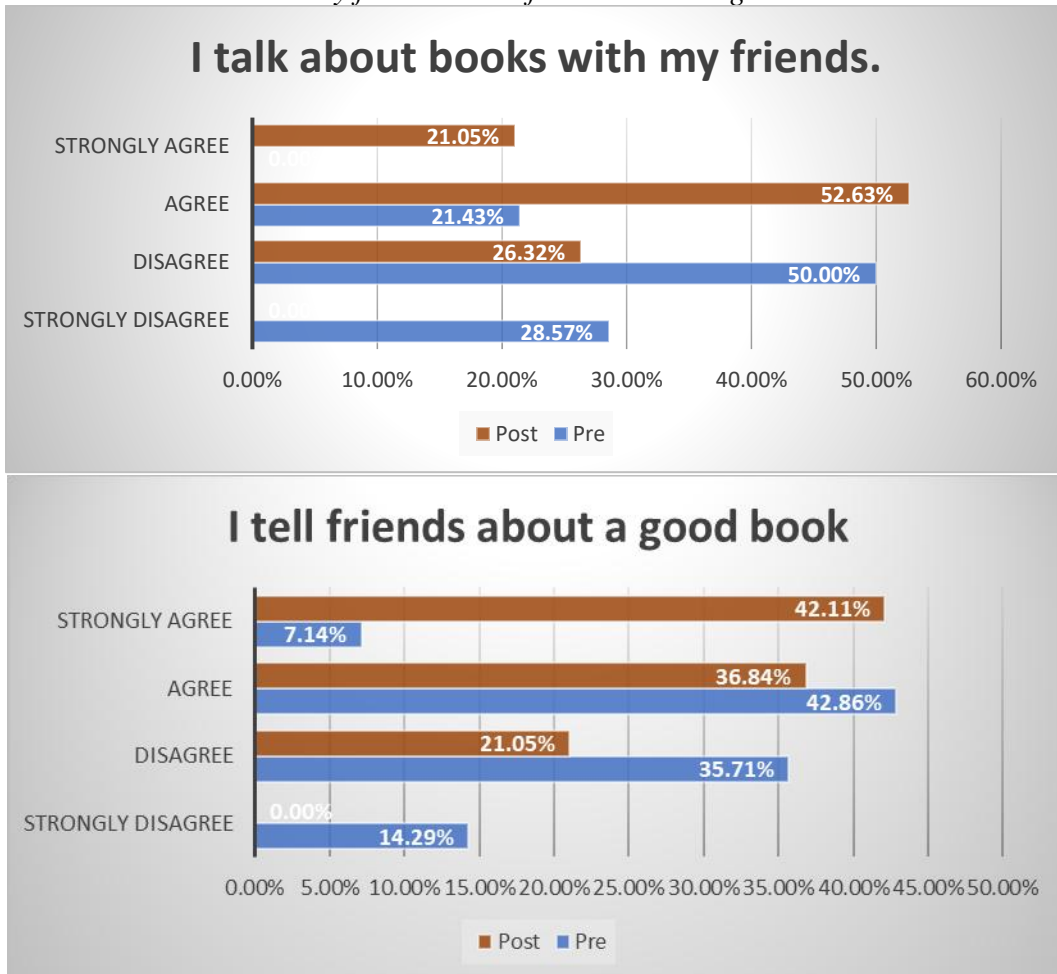


The last item in this category examined reading preferences based on specific authors. Of the pre-survey respondents, 14% disagreed that they read more than one book by the same author. However, on the post-survey all respondents either agreed or strongly agreed with this statement.

2. Social. Four items were identified in the *social* construct category.

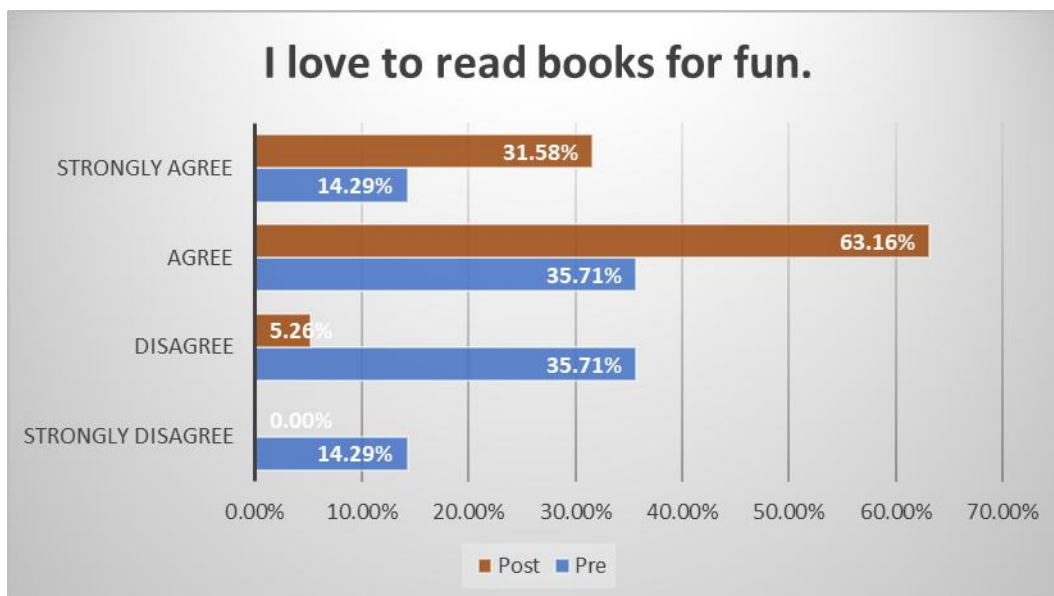
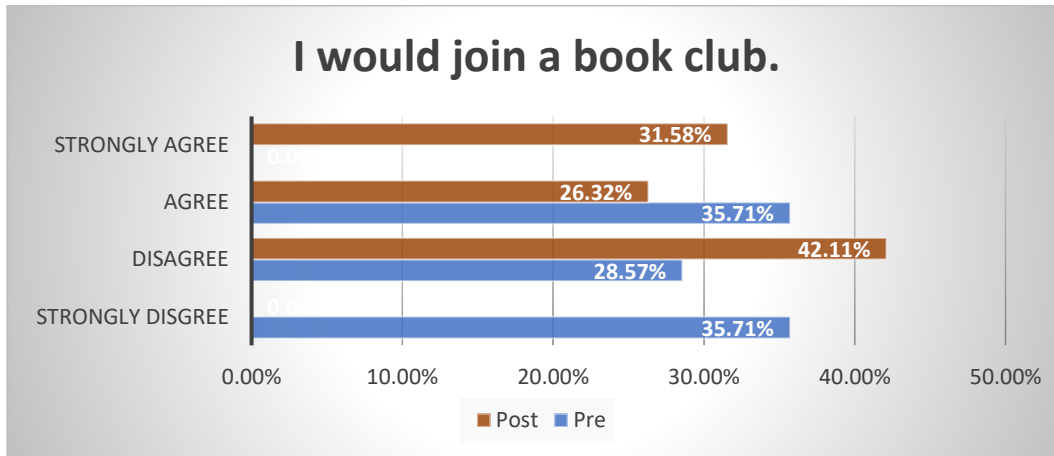
- I talk about books with my friends.
- I tell friends about a good book
- I would join a book club.
- I love to read books for fun.

Items: *I talk about books with my friends. I tell friends about a good book.*



The *social* category revealed the largest shifts in attitude. For example, the item *I talk about books with my friends* had reverse responses on the pre and post surveys. The pre-survey showed that 78.57% of the participants did not talk about books with their friends, with almost 30% strongly agreeing with this statement. However, the post-survey revealed that 73% talk about books with friends. Results indicate that participants not only talk about books with their peers more often, but they also tell friends about good books. Prior to the course, 45% did not tell friends about good books, whereas post-surveys show 79% did tell friends about good books.

Items: *I would join a book club. I love to read books for fun.*

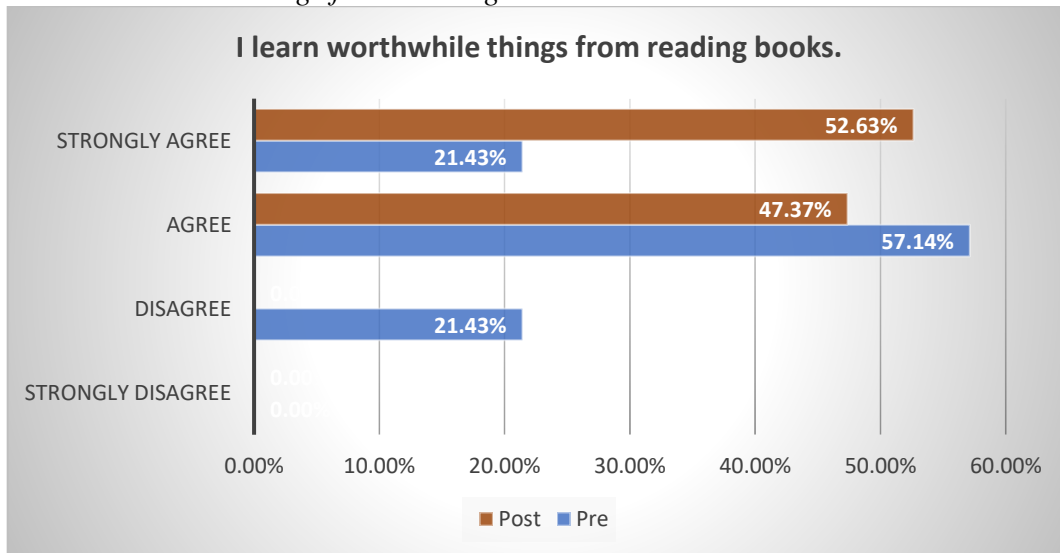


Results to these items suggest that positive experiences may change future reading behaviors. Prior to the course, 64% of the participants stated that they would not join a book club, whereas post-survey results revealed that 79% would join a book club. Additionally, prior to the course, half of the participants stated they love to read books for fun. However, 95% percent agreed with this statement at the end of the course, with 30% strongly agreeing.

3. Academic. There were four survey items in the *academic* category.

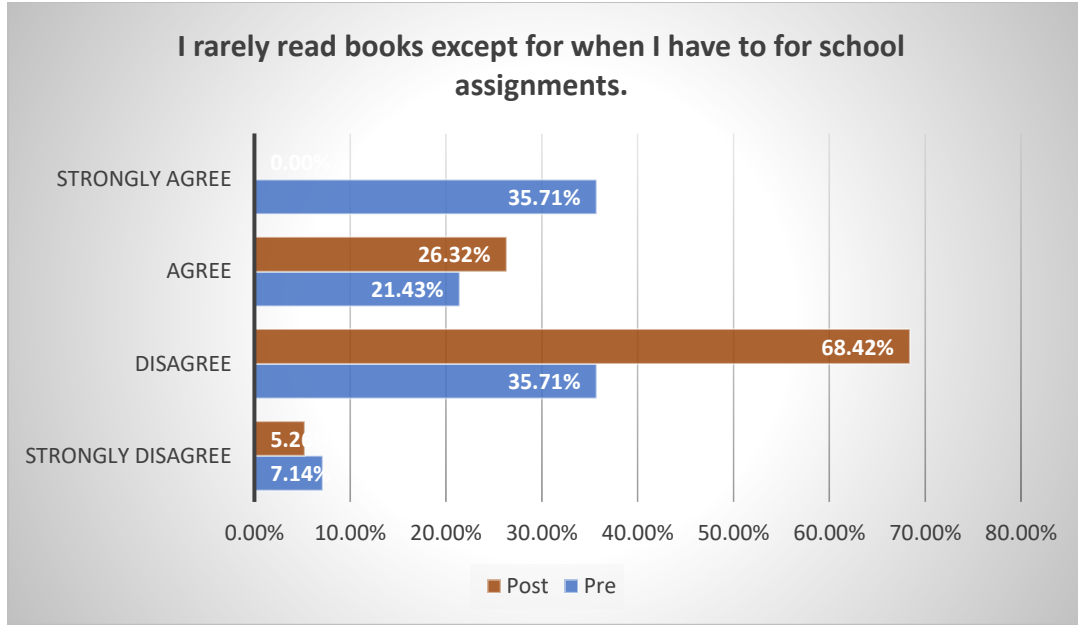
- I learn worthwhile things from reading books.
- I rarely read books except for when I have to for school assignments.
- I would rather someone just tell me information so I don't have to read to get it.
- I read about something because I am curious about it.

Item: I learn worthwhile things from reading books.



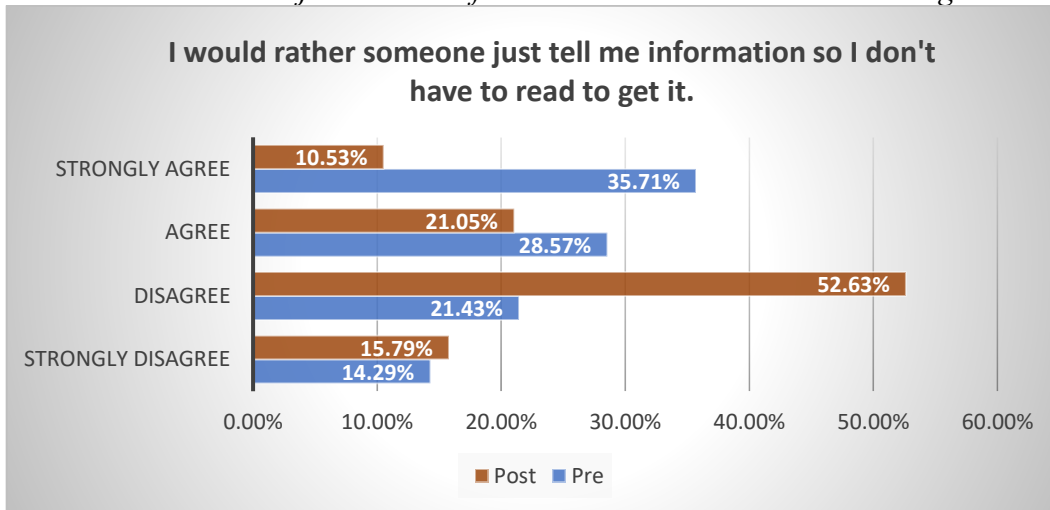
The largest shift in this category was reflected in the item *I learn worthwhile things from reading books*. For this item, all participants moved into the agree category on the post-survey. Further, it's interesting that there was a 30% jump from agreed to strongly agreed on the post-survey.

Item: I rarely read books except for when I have to for school assignments



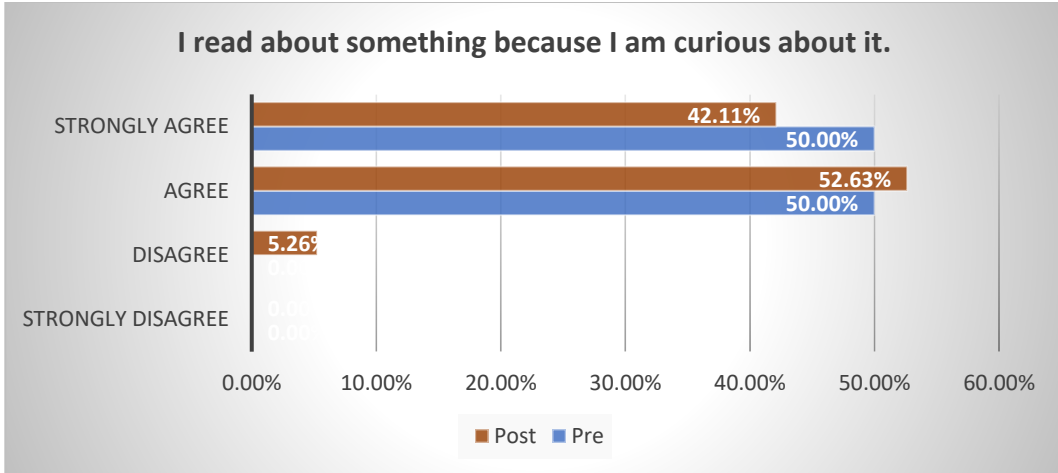
Prior to the study, 35% of the respondents strongly agreed that they rarely read books unless they were assigned. However, post-survey results showed no one strongly agreed with this statement and 26% agreed. Sixty-eight percent disagreed suggesting that they were beginning to read books they were not assigned.

Item: I would rather someone just tell me information so I don't have to read to get it.



Pre-survey data revealed that over half of the participants would rather someone just tell them information so they would not have to read it. This shifted on the post-survey to 69% preferring reading for themselves.

Item: I read something because I am curious about it.

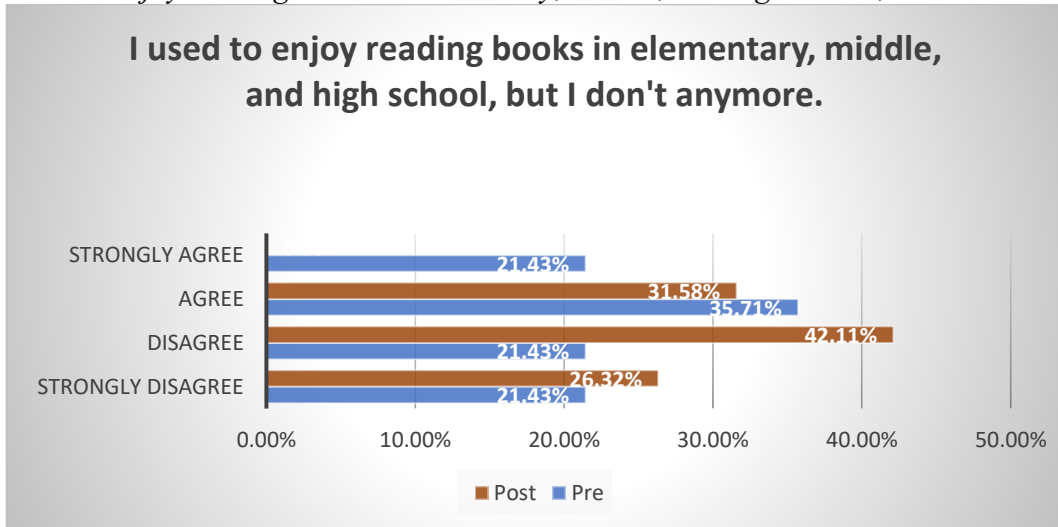


There was a slight decrease in reading behavior with regards to reading for curiosity, with 5.6% disagreeing on the post-survey. Prior to the course, this was 50/50 split between agree and strongly agree on this item.

4. Self-perception. Three survey items addressed the category of *self-perception*.

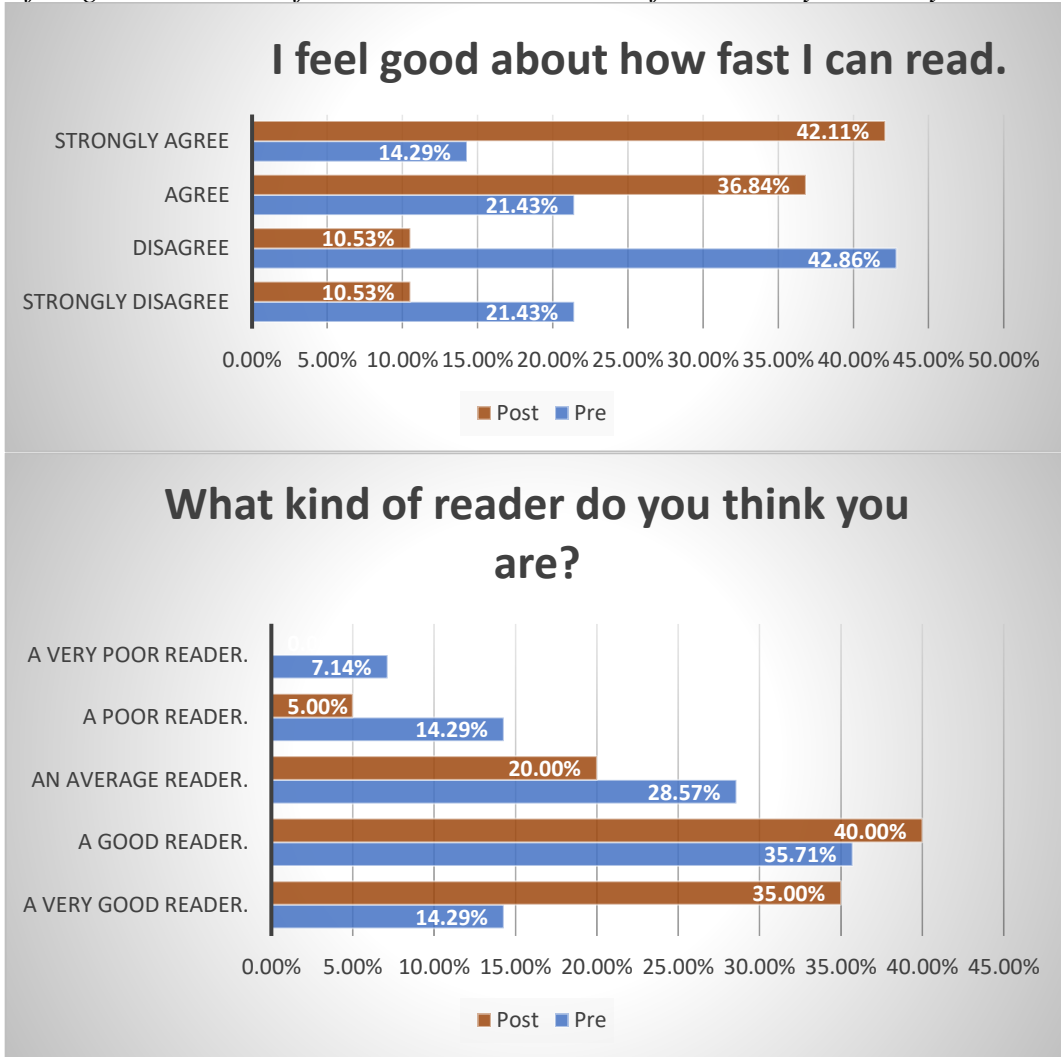
- I used to enjoy reading books in elementary, middle, and high school, but I don't anymore.
- I feel good about how fast I can read
- What kind of reader do you think you are?

Item: I used to enjoy reading books in elementary, middle, and high school, but I don't anymore.



Pre-survey data found that 57.14% of preservice teachers used to enjoy reading but no longer feel that way. On the post-survey, respondents disagreed (68.43%) that they no longer enjoyed reading books, with 42% disagreeing and 26% strongly disagreeing.

Items: *I feel good about how fast I can read. What kind of reader do you think you are?*



Post-survey data revealed shifts in reading ability, self-confidence, and perception. Sixty-four percent of the participants did not feel good about how fast they read at the beginning of the course, whereas post-survey data showed 78% responded positively (agree-37%; strongly agree-42%) regarding their speed of reading. The same trend is evident for the question *What kind of reader do you think you are?* Pre-survey data revealed that over 50% of the participants rated

themselves Average or below: Average (29%), Poor (14%) and Very Poor (7%). On the post-survey, five percent of the respondents rated themselves as poor readers, with no responses in the very poor category. However, 95% of the respondents rated themselves as average or above readers at the end of the course.

Limitations

This study aimed to investigate the reading attitudes and behaviors of preservice. While the results contribute to our understanding of the topic, several limitations should be acknowledged.

1. The sample size for this study was relatively small, consisting of only 38 participants. Although efforts were made to recruit a diverse group of participants, the findings may not be fully generalizable to the larger population of interest. Replication in a larger university with a more diverse student population is recommended to enhance the external validity of the findings.
2. The participants were recruited through convenience sampling, which may introduce selection bias. As a result, the sample may not fully represent the target population, limiting the generalizability of the findings.
3. The data collected for this study relied on self-reported measures, which are subject to several limitations, including recall bias and social desirability bias. Participants may have provided responses that they believed were socially acceptable or would have pleased the instructor. Future research should incorporate objective measures or qualitative data such as reading journals or transcripts of classroom book discussions.
4. The study was conducted over a relatively short timeframe, which may restrict the generalizability of the findings to longer periods. Longitudinal studies or studies

conducted over extended periods could provide a more comprehensive understanding of reading attitudes and behaviors of preservice teachers.

5. This study was conducted in a small private liberal arts university. The sample population consisted of primarily white middle class females. These factors may influence the outcomes and limit the generalizability of the findings to other contexts. Future research could explore the reading attitudes and behaviors in diverse settings to broaden the research in this area.

It is important to acknowledge these limitations as they provide opportunities for future research to address these concerns and further advance our knowledge in this area.

Implications

The results from this survey suggest that preservice teachers benefit from pleasure reading when given the gift of time to read and discuss books in teacher preparation programs. These findings support the work of Nathanson, Pruslow, and Levitt (2008) who noted that preservice teachers were motivated by literacy activities that had intrinsic value rather than a grade assignment. This study also supports Tovey's 2022 study on engaging reluctant readers in teacher preparation programs. Tovey's findings indicate the need for teacher education faculty to create meaningful reading opportunities so preservice teachers can become enthusiastic readers. She further states that before teachers can motivate their students to read, they need to become readers themselves. Moreover, we agree with the urgency for teacher preparation programs to address the issue of reading attitudes among preservice teachers (Vansteelandt, Mol, & Van Keer, 2022).

The preservice teachers' attitudes and behaviors in this study were changed by the opportunity to read for pleasure and discuss the readings with peers without the worry of a

graded course requirement. It is encouraging that participants showed growth in all four categories: logistics, social, academic, and self-perception. In the following sections, we highlight the most interesting findings from each category and offer suggestions to encourage students to read for fun in teacher preparation programs.

From the *logistics* category, it is interesting that participants prefer reading printed books over electronic books considering these preservice teachers grew up in the digital generation. Further, it is concerning that participants do not like reading newspapers. This becomes more problematic since many newspapers have moved to electronic subscriptions. To combat this issue, we recommend using newspapers in teacher preparation classrooms. A required class in most teacher education programs is *Social Foundations of Education*. This class could begin each class session by reading the newspaper with activities such as finding articles that are relevant to education or modeling a current events discussion. This type of activity would also provide students with the opportunity to read by allocating reading time each class period.

Results in the *social* category indicate the importance of providing preservice teachers access to various kinds of reading materials, including a wide selection of children's books. In our program, we offer books to preservice teachers on a "free book table" that allows students to expand their personal libraries. The books are provided by faculty members who donate books on a regular basis. Another suggestion for increasing preservice teachers' access to books is by requiring students to purchase Kindle Unlimited as part of a course, which provides unlimited access to various books throughout the semester. Although this may not be feasible for all courses, having easy access to children's literature is key. Further, establishing book clubs in teacher education classes can introduce students to the joys of reading by demonstrating the importance of reading for pleasure. Clubs could be formed around a particular book, genre or

open to any book students are reading. Books on tape can reinforce the importance of reading when time is limited. We also encourage partnering with elementary schools who use book talks with their students – preservice teachers could volunteer in these classrooms.

The importance of reading engagement was highlighted in the *academic* category. We were particularly encouraged in the pre to post shift regarding the notion of reading to learn information. Preservice teachers’ move toward reading autonomy is a promising trend. Although we were surprised in the decline in reading for curiosity in the post-survey results, we believe this anomaly was due to end of semester fatigue (too many projects and time constraints at the end of the semester) rather than a decline in curiosity. Further research should be conducted in this area.

Finally, the category of *self-perception* included the most interesting data. At the beginning of the semester, 21% of the participants did not view themselves as good readers. However, at the end of the semester, 95% of the participants viewed themselves as average or above average readers. This was a strong change from the beginning to the end of the semester. As stated earlier, this data reflects growth in autonomy and reading confidence among preservice teachers. Additional suggestions that can motivate preservice teachers to read for fun include the following (Tichenor, Piechura, & Heins, 2021):

- Ask faculty to read to preservice teachers on a regular basis in education courses.
- Share information about local library check-outs policies.
- Require the inclusion of children’s books in preservice teachers’ lesson plans.
- Encourage preservice teachers to create read-a-loud videos to share with each other and K-6 students.
- Share free online book resources with preservice teachers.

- Provide field experiences in after-school and community reading clubs.

Providing preservice teachers the time to read for pleasure should be a planned part of teacher education programs as it provides enthusiasm about reading and opportunities for students to expand their knowledge of children's literature. The results of this study demonstrate that reading attitudes and behaviors can change in only one semester if students are encouraged to read and given the gift of time to read. Further, sharing these results with preservice teachers can highlight the power of also giving elementary aged children the gift of time to read.

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Embracing Transdisciplinary Instruction Through Differentiation: A Project- Based

Learning Approach

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Abstract

This article aimed to problematize students' preparedness to confront global issues. This article also validated Florida educators' lived experiences and instructional expertise while uncovering a path forward to bridge current classroom learning with transdisciplinary instructional approaches, specifically highlighting differentiation to meet all learner's diverse needs, increase learning gains, and prepare children and adolescents for an ever-changing world. Thus, educators can feel more confident building connections between English Language Arts curricula and science, technology, arts, mathematics, history, and more to facilitate and integrate transdisciplinary instruction through project-based learning.

Keywords: transdisciplinary, differentiated instruction, student-centered, problem-solving, project-based learning

As Florida educators, we constantly question: "How can I help each student learn? How can I prepare students for global challenges they will inevitably face?" The persistent social, economic, political, and environmental challenges of the 21st century require new and innovative solutions to progress effectively; however, educators from around the globe can agree that isolated and detached disciplinary thinking cannot forge the path to a better future (Fam et al., 2018). Ultimately, we should seek to create a unity of intellectual and ethical frameworks in

which children and adolescents are afforded critical opportunities to identify and define real-world problems and generate creative solutions through transdisciplinary approaches within today's classrooms (Montuori, 2013). At their core, children and adolescents are “explorers, curious, and adventuresome” (Puig & Froelich, 2021). However, most educators would agree that the current state of education in Florida does not foster, or at times, even account for, learners' curiosities in the local and global problem-solving processes. In actuality, it is disciplinary learning coming together to form new wholes throughout time that enables learners to begin to problem-solve in response to real-world issues.

Nevertheless, as professionals who share responsibility for helping to shape the future, we can and should intentionally transcend different disciplines by moving beyond subject-specific approaches to holistically advance the complex knowledge and skills students need to complete in the global world to develop new and innovative solutions to today's problems through transdisciplinary instruction (Finch et al., 2021). Transdisciplinary instruction is grounded in “integrated leadership and shared missions in the social context” with a clear focus on active and purposeful interaction of key stakeholders, including administrators, educators, students, and families (Daneshpour & Kwegyir-Afful, 2022). Thus, this article seeks not to merely define transdisciplinarity learning, leading, writing, and teaching but rather to validate Florida educators' lived experiences and instructional expertise while uncovering a path forward to bridge current classroom learning with transdisciplinary instructional approaches, specifically highlighting differentiation to meet all learners diverse needs, increase learning gains, and prepare children and adolescents for an ever-changing world. Thus, educators can feel more confident building connections between English Language Arts curricula and science,

technology, arts, mathematics, history, and more to facilitate and integrate transdisciplinary instruction through project-based learning.

Shifting Mindsets about Transdisciplinary Instruction

“Coming together is a beginning; keeping together is progress; working together is success” (Grey & Connolly, 2008, p. 102). Fromhold-Eisebith et al. (2008) extended this by acknowledging that transitioning toward transdisciplinarity forces educators to confront contradictions within the system: tradition, innovation, comprehensivity, the mission of education, and knowledge and skills needed (see also Daneshpour & Kwegyir-Afful, 2022). Shifting mindsets about transdisciplinary instruction is no simple feat for educators in a complex and vastly bureaucratic system focused on hierarchy of authority, specialization, and adherence to rules and procedures. The challenges of transdisciplinary approaches are often echoed in education regardless of transdisciplinary efforts (Grey & Connolly, 2008). I understand the unique challenges facing us as educators nationwide, which make transitioning to transdisciplinary instruction seem daunting: too many students, too much content, and too little time. Nationwide, classrooms are becoming increasingly diverse regarding socioeconomic backgrounds, cultures, races, religions, genders, abilities, and disabilities. It is no secret that every student has unique needs. As a result, my colleagues and I often discuss concerns about transitioning to transdisciplinary instruction while addressing and managing diverse students’ needs.

Nevertheless, Lopez and Olan (2019) advocated that “educators at all levels are called on to respond to this new reality to ensure that students from diverse backgrounds experience success in schools” (p. 19). Transdisciplinary instruction provides educators with renewed opportunities to understand students’ unique strengths and needs and foster collaboration to

highlight individual and collective strengths to improve critical thinking, promote creativity, and foster the exchange of ideas. Research supports that children and adolescents perform better in diverse environments due to the interaction of differing perspectives, especially paired with the collaborative emphasis within transdisciplinary instruction (Pozas et al., 2020). Therefore, the nature of transdisciplinary learning lends itself to cultivating critical thinking and problem-solving within the increasingly diverse and unique population of children and adolescents. Consequently, collaboration among diverse peers, especially within transdisciplinary learning, furthers our critical work to increase learning gains and improve knowledge retention (Kooloos et al., 2011).

Furthermore, as we grapple with the new Florida B.E.S.T. Standards, instructional materials, and statewide assessments in English Language Arts (ELA) grades 3-12, there are feelings of overwhelmedness and stress with the currently mandated content without further consideration of how to make connections between multiple disciplines alongside other subject-matter educators. Besides substantial content, competing time constraints hinder the successful implementation of transdisciplinary instruction. Educators from differing disciplines often struggle to come together, let alone keep together and work together effectively. These factors inevitably lead us to question how to effectively plan, manage, and implement transdisciplinary instruction alongside a team of educators from different contents. Nevertheless, we need not reinvent the proverbial wheel. Instead, transdisciplinary instruction may validate and embrace educators' rich experiences and well-intentioned efforts by uncovering a manageable path forward to foster transdisciplinary instruction within the current classroom contexts. Remaining grounded within the wealth of knowledge and experiences already forged will more smoothly facilitate the integration of transdisciplinary instruction. Thus, as Florida educators, we can work

within our current contexts to build opportunities for connections to disciplines beyond English Language Arts and maximize our valuable time and resources.

Embracing Differentiation within the Transdisciplinary Classroom

As educators navigate the new B.E.S.T. ELA standards, we must maximize our valuable time and resources while providing rigorous, standards-based instruction. One effective way to do that is through differentiated project-based learning by (a) creating intentional instructional grouping; (b) planning small-group and individualized instruction, and (c) increasing scaffolding and enrichment. The principles of differentiation are grounded in promoting respectful tasks, continual assessment, quality curriculum, teaching up, building community, and flexible grouping (McTighe & Brown, 2005; see also Grecu, 2023; Pozas et al., 2020). These differentiated foundational principles are ideas that educators intentionally embed into our lessons in response to individual learners' unique needs. We constantly and continually differentiate various aspects of learning and instruction according to student's readiness, interests, and learning profiles (Grecu, 2023; McTighe & Brown, 2005; Pozas et al., 2020).

However, could we invite transdisciplinarity into our ELA classrooms while integrating many of the state standards and instructional strategies we are already familiar with? The answer is a resounding “yes!” English teachers are experts in creating topical or thematic units of instruction in which students engage with multiple texts and genres to conceptualize and organize information to examine patterns. We work with students to increase the depth of knowledge and skills to move from surface literacy to deep literacy to literacy which is transferable to different contexts (Fisher et al., 2016; Hattie, 2023). A differentiated, project-based learning approach could allow students to investigate significant issues through multiple

perspectives, highlight the importance of different disciplines and multiple literacies, and scaffold the meaning-making process alongside students (Hattie, 2023).

A Transdisciplinary Project-Based Learning Approach

In my eleventh-grade English class, my Professional Learning Community (PLC) and I created a collaborative transdisciplinary research project to guide students through the problem-solving process related to a student-selected issue. Aligned with Lewis and Batts (2005) guidelines to differentiated lessons:

1. We identified key concepts and skills based on Florida's B.E.S.T. ELA Standards.
2. We identified and discussed students' needs, considering their readiness, interests, and learning profiles;
3. We collaborated and created a relevant, challenging, and interesting transdisciplinary research project where students determine what they studied to increase engagement and autonomy.
4. We monitored student progress and adjusted activities accordingly by providing scaffolding, enrichment, and acceleration opportunities.

Instead of planning a traditional ELA unit where the teacher selected the central and supplemental texts focused on one topic or theme, with students engaging in individual lessons, we wanted to create a comprehensive transdisciplinary unit of inquiry-driven by student choice. Therefore, this transdisciplinary unit was to engage multiple, complex Florida B.E.S.T. ELA standards and benchmarks encompass reading prose, poetry, informational texts, reading across genres, communicating through writing, communicating orally, researching, creating, and collaborating. With the new B.E.S.T. ELA standards, these transferable skills begin as early as

Kindergarten, so variations of this transdisciplinary project-based learning approach could be modified to fit the needs of differing grade levels and abilities.

As a PLC, we determined the project's requirements, focusing on eleventh-grade content skills and intentionally blending with other disciplines. The project was designed to be completed in 30, 45-minute class periods; however, the pacing was flexible and dependent on students' prior knowledge and acquisition of new knowledge. In phase one, the project began with students sharing their preferences for who they could work with in teams of 4-6. I created teams based on student input while considering readiness, interests, and learning profiles. While I did honor student preferences, I primarily considered how student's learning profiles would impact the team's success (Ford, 2005). For example, in a group of four, I would have one student with advanced knowledge and skills, two performing on grade level, and one with limited prerequisite skills. The team format shifted focus to students as the primary investigators and experts, not myself as the teacher, so students could build relationships, increase creativity, improve communication, and boost confidence (Hattie, 2023). From the start, I became the "guide on the side" instead of the "sage on the stage," which later allowed me to spend time providing small-group and individualized instruction. Once the teams were revealed, students conducted preliminary research together to determine a real-world issue (e.g., poverty, environmental issues, geopolitics, human rights, and others). Students crafted a team central research question, then they discussed and assigned a different disciplinary perspective to each team member through which they could investigate their question to make cross-curricular connections within their issue: environmental, psychological, scientific, technological, mathematical, physical, economic, political, historical, artistic, humanitarian, philosophical, cultural, social, ethical (Van Baalen et al., 2021).

Each student was responsible for conducting research and synthesizing information into a medium of their choice. Because this was the students' first time conducting research, I scaffolded their learning by modeling how to locate reliable and valid sources using online databases. Fortunately, our classroom has a 1:1 device setup, so students were able to conduct individual research; however, this format could be modified to meet the resources available at the school, including, but not limited to, students working in pairs, students using cell phones, or scaffolding students' access by providing printed information to read and synthesize. Students were required to locate and select a range of genres to address the breadth of text types outlined in the B.E.S.T. ELA Standards. This range included classic literature, poetry, essays, speeches, plays, founding documents, and research-based articles. Additional requirements were that the texts were on or above grade level to increase expectations.

Students compiled and documented their research over approximately ten class periods by creating their choice of annotated bibliographies, graphic organizers, mind maps, or source matrixes, which enhanced differentiation related to processes and products. Students read each text and cited evidence to explain their understanding and justify their reasoning. Throughout this entire phase of the project, I rotated to address questions and concerns. However, I often encouraged students to collaborate as a team to problem-solve, strategize, and craft new understandings without my assistance (Hattie, 2023). During phase one of the project, I strategically scaffolded their learning based on students' needs by modeling think-aloud, providing visual models, offering guiding questions, using graphic organizers, and showing examples (Hogan & Pressley, 1997; Van de Pol et al., 2010).

After students concluded their research phase based on their disciplinary perspective, the teams worked together to understand the various perspectives needed to address their research

questions (Grey & Connolly, 2008). Although all of the work up to this point has been building the standards-based skills for researching, using information, and communicating through writing, the project's next phase was where the transdisciplinarity came to fruition. In phase two of the project, students worked together to share their findings by collaborating and employing active listening skills to engage in discussions because their ultimate goal was to create a cohesive team multimedia presentation to showcase their findings, reasoning, and evidence in response to their team's central research question. Students were provided with guiding questions and a template to create an outline for their presentation, including defining the problem and its significance, identifying and evaluating the benefits and drawbacks of various solutions, and conclusively arguing for implementing a recommended solution. My classes presented their findings to the rest of the class as their audience; however, another method of approaching this is to do a gallery walk of the multimedia presentations to reduce the time spent.

The transdisciplinary analysis focused primarily on the final multimedia presentations as phase two of the project actively engaged students in drawing insights from their research perspectives to solve a real-world problem. Nevertheless, phase one of the project was crucial for students to build a solid foundation of knowledge about the issue. Then, students could co-construct knowledge and apply their thinking to a real-world investigation using critical thinking and collaboration skills. The earlier stages of documenting and compiling the research were evaluated in the analysis and served as the foundation upon which the transdisciplinary project was grounded.

Furthermore, students completed a reflection activity about engaging in a transdisciplinary project to understand their learning throughout the process better. This transdisciplinary project-based learning experience engaged students in the collaborative

meaning-making process to develop their skills based on real-world issues to highlight the importance of different disciplines. The approach allowed students to be introduced to transdisciplinarity with a team of co-learners to learn from and with each other in a safe, scaffolded, yet highly challenging environment. Not only did students strengthen their critical thinking skills to prepare them for the persistent global issues today and in the future, but they also gained vital academic skills that will aid them in becoming productive college students, employees, and citizens worldwide.

Practical Implications for Professional Learning Communities and Classrooms

Incorporating differentiation into transdisciplinary classrooms can yield critical benefits for professional learning communities and classrooms alike. Fellow educators can see this research as a conduit to collaborate and ease the burden of workload challenges. Specifically, we can work together to move from subject-specific lesson planning to planning transdisciplinary units of inquiry that integrate multiple disciplines, positioning students to engage with complex problems from various perspectives. Educators from different subject areas can communicate, coordinate, and collaborate to create standards-based group projects and problem-solving activities that engage learners in applying their knowledge and skills to solve complex, real-world problems within the traditional ELA classrooms. Additionally, educators can jointly develop and determine learning outcomes that blend measurable skills, abilities, and knowledge that students will demonstrate as a result of their thinking. Understandably, time constraints and conflicting demands can hinder transdisciplinary approaches; nevertheless, planning can enable teachers from multiple disciplines to work together to plan transdisciplinary units. Specifically, clarifying the “why” and “how” of transdisciplinary learning across team members can help facilitate drive. At the same time, having a clear organizational structure is imperative in

determining expectations and guidelines, delegating tasks, and meeting regularly to monitor progress. Concurrently, we, as educators, can continue to work together to plan and differentiate instruction to meet students' varied needs. This research can reemphasize the importance of educators' joint understanding of students' abilities, aptitudes, interests, and contextual backgrounds by differentiating instruction through content, process, products, and learning environments. As a result, establishing and sustaining high expectations for all students is a critical component of transdisciplinary instruction through differentiation.

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The Skill and Will to Pass High-Stakes Reading Tests in High School

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Abstract

Many adolescents, particularly those who are from low socioeconomic backgrounds, struggle with passing high-stakes reading tests in high school such as the ACT and SAT. They need strategies to improve their skill in reading, as well as their will or motivation to want to read. This article presents research-based strategies that a high school reading interventionist successfully used with her students. Specifically, the authors discuss the following strategies: a) put relationships first; b) bolster self-efficacy; c) build stamina; and d) use collaborative learning. Implementation of these strategies resulted in all of the reading interventionist's students improving their reading scores and earning a high school diploma.

Keywords: adolescent literacy, motivation, high-stakes reading tests, self-efficacy, reading stamina, collaborative learning

The National Assessment of Education Progress (NAEP) revealed that only 37 percent of twelfth-grade students performed at or above the proficient level on the 2019 NAEP reading assessment (Nation's Report Card, 2019). This data is daunting as these adolescents may not become lifelong readers and informed citizens, as well as not be college and career ready. States require that high school students pass various high-stakes tests to graduate, including Standards of Learning (SOL), Scholastic Assessment Test (SAT), and American College Testing (ACT). Unfortunately, many students, especially those who are economically disadvantaged, struggle

with passing both the SAT and ACT. In 2022, only 41% of students met American College Testing reading benchmarks (ACT, 2022). Nam (2023) stated that the average total Scholastic Assessment Test (SAT) score is the lowest since 2016. Adolescents desperately need strategies to increase their skill in reading tasks as well as their will or motivation to want to read and persevere in completing tasks that can improve their reading abilities (Winberg et al., 2022). Reading motivation typically decreases as students advance through the grade levels (Parsons et al., 2018) and is magnified if they are struggling to pass high-stakes reading tests to graduate. While some students have the financial means to obtain private tutoring to learn strategies to improve reading achievement (Park & Becks, 2015), students from low socioeconomic backgrounds may not be able to receive such support. To address the inequities from access to private tutoring (Park & Becks, 2015), some schools offer their own internal curriculum for increasing reading achievement and passing high-stakes reading tests.

Mrs. Author, a co-author of this article, works at a school that offers such a curriculum. She is a reading interventionist at a public high school in an intensive reading classroom focusing on high school seniors who need a passing score on a high-stakes reading test to graduate high school and enter college or the workforce. While this article mentions strategies to help students pass the ACT and SAT specifically, the strategies shared can be adapted for use with other high-stakes tests as well, such as The Florida Assessment of Student Thinking (FAST). To receive a concordant score for graduation in her state, students need to score either an average of an 18 on the ACT Reading and English tests or a 480 on the SAT Reading and Writing test. The ACT Reading test is a 35-minute test containing 4 reading passages and 40 questions, and the ACT English test is a 45-minute test with 75 questions. The new Digital SAT is an adaptive format, and the Reading and Writing section is broken into two 32-minute

modules with 54 questions total. While Author focused on increasing her students' reading skills, she also focused on their will to want to read so that they were motivated to engage in reading tasks throughout the school year (Winberg et al., 2022). In this article, we describe strategies and research that Author found to be successful in helping high school students increase their skill and will to read and pass high-stakes reading tests: a) put relationships first; b) bolster self-efficacy; c) build stamina; and d) use collaborative learning. Through the implementation of these strategies, all of Author's students received their required reading score and earned a high school diploma.

Put Relationships First

Building relationships with students is equivalent to laying the foundation for a house. You cannot frame a house without the foundation, just like you cannot expect cognitive learning to take place without investing in relationship-building first. Not only is relationship-building with students the foundation for cognitive learning, but it is also the foundation for motivating students to achieve reading success. "Strong student-teacher relationships are associated with academic motivation, a sense of belonging, and achievement" (Scales, et al., 2020, p. 650). Teachers play a significant role in students feeling connected at school (Lee, 2012). While teaching struggling readers can be extremely challenging, especially with the pressures of high-stakes testing, if the teacher works to build relationships through various strategies, and a classroom of trust and inclusivity is created, students are more motivated to achieve academic success. Strategies that Author used to put relationships first are provided in this section.

One way Author built relationships with her students was requiring them to take a Myers-Briggs Type Indicator assessment and an Enneagram personality test during the first week of school. These informal assessments provided further understanding about the students'

personalities and how they learned best so she could provide an inclusive learning environment. For example, it was helpful for her to know which students were extroverted, introverted, more pragmatic, more anxious, etc. Typically, introverted students did not talk during classroom discussions, but when Author engaged in one-on-one conversations with them, she discovered that they knew the material and were less stressed and anxious as they were not asked to speak in front of their peers right away. Author would let these students know ahead of time that they would be answering questions, so they had time to think about their answers and prepare themselves to speak in front of their classmates. Personality tests like Myers-Briggs allowed Author to have a better understanding of her students; the better she understood her students, the better she could group them, differentiate her instruction, build trust, and communicate effectively with them throughout the year.

Data chats were also critical to creating relationships and success in the classroom. At Author's high school, all teachers were required to complete data chats with their students twice a quarter. However, Author took the time to meet with her students at least once a week, even if it was just a quick check-in through Canvas. Data chats were a quick check-in, check-out system that allowed students to track their own progress, set goals for themselves, and chart their strengths and weaknesses. It was also used as a mental health check-in. Author used this data to look for any trends that could hinder a student's performance. For example, if a student said they were struggling mentally in their data chat, she quickly referred them to the school mental health counselor. If there was a sudden decline in grades, she checked in with the student to discover what was occurring to intervene quickly and get the student back on track. These data chats not only allowed the students to take responsibility for reviewing their own data on practice exams, but they also provided Author a chance to converse with students about their academic

performance, disciplinary issues, and/or attendance. Additionally, the weekly conversations opened up a line of communication that helped build trust between Author and her students and allowed her to guide them in being successful.

Another way Author built relationships was by using restorative justice practices instead of punitive discipline. By implementing restorative justice practices to correct misbehaviors, Author created a positive and inclusive classroom environment, and—the most important piece—this allowed her to keep students in class. According to Cardona (2023), “a student removed from their class can lose important instructional time which can negatively impact the student’s academic success and increase the likelihood that the student will repeat a grade or disenroll from school altogether” (p. 5). One example of a restorative justice strategy that Author used in her classroom was that she allowed students to be a part of creating a solution to the problem. Maynard and Weinstein (2019) call this “repairing the harm.” Instead of sending students out of class when a minor infraction occurred, she had a conversation with them to first find out what might have caused the student to act out, and then she gave them two choices: “you can come up with the solution with me, or I can come up with what your consequence will be, and I am not going to be open to feedback.” Restorative justice practices encourage teachers to create a classroom culture of communication and empathy.

Bolster Self-Efficacy

After Author laid the foundation during the first few weeks of school by building relationships and creating an inclusive classroom, she began to bolster students’ self-efficacy that “involves judgments of capabilities to perform activities” (Zimmerman, 1995, p. 203). Tackling a college and career readiness assessment like the SAT and ACT can be mentally challenging for struggling readers, especially when they present deficits in comprehension, and when they have

test anxiety, it is even more of a challenge for them. It is important that teachers help students build their self-efficacy in reading, because according to Solheim (2011), “a self-efficacious student will participate more readily, work harder, persist longer, and have fewer adverse emotional reactions when encountering difficulties than a student who doubts his or her capabilities” (p. 4). Both Guthrie et al. (2007) and Zimmerman (2000) researched the influence of students’ self-efficacy in their reading skills and discovered that students with low self-efficacy usually withdraw from tasks that they think are too challenging. Students’ self-efficacy impacts reading achievement, and a teacher plays a pivotal role in bolstering students’ self-efficacy (Guthrie et al., 2007). In this section, Author shares strategies that she used to build students’ self-efficacy during reading instruction.

Author began the process of helping build student self-efficacy by teaching students the layout of the test (ACT, SAT, or FAST), test content, timing of the test, instructions, and test taking strategies. She also gave her students speed drills each week for the ACT Reading exam. The ACT Reading exam consists of four reading passages and 40 questions, and students have 35 minutes to take the test which provides eight minutes and 45 seconds to complete each passage. Author’s speed drills occurred once a week, and they included students completing 10 questions for one reading passage within eight minutes and 45 seconds. At the beginning of the school year, students could not complete the Reading test in the designated amount of time, but after practice with the speed drills, they were familiarized with the time it took to complete the test. By the end of the school year, students could complete the entire test within the specified time frame.

Another way Author bolstered self-efficacy was introducing the ACT and SAT reading test strategies to students at the beginning of the year using high-interest passages. She selected

the passages based on the beginning-of-the-year data that indicated her students' interests. For example, in one class, Author had a large group of students who either played soccer or grew up watching soccer with their families. Author found an ACT reading passage to use for instruction that was a narrative about a young boy who grew up in Brazil watching soccer with his dad. If students were engaged with the material, it was easier for Author to introduce the expectations of the test and test strategies. Once students had self-efficacy in implementing the reading strategies, Author used the more challenging and less engaging reading passages. McCabe and Margolis (2001) mention, "Reading moderately challenging materials to students, on subjects they find interesting, engages them intellectually and fosters willingness to try new activities. This willingness is essential for overcoming low self-efficacy" (p. 48).

Author continued to bolster self-efficacy in her students by using data tracking sheets in their student binders. The ACT is broken down into 4 different passage types: Prose Fiction, Social Science, Humanities, and Natural Science. Students received a data tracking sheet at the beginning of the school year reflecting these subcategories of the reading tests (see Table 1). When Author's students completed a practice test, they were required to track how they performed in their data tracking binders and began to see what types of passages presented the least and most amount of challenge. Author encouraged students to start with the passages in which they were strongest when they took the test. This allowed students to start the test with self-efficacy because they already understood the question types, and class data demonstrated that they tended to be successful on that type of passage. Similarly, Marzano (2009) found that students made gains when tracking their progress. After comparing teachers who required students to track their progress on assessments with those who did not, he found a 32 percentile gain in achievement with students who tracked their own data.

Table 2 provides an example of how a student tracked her data. Note that items highlighted in yellow were the passage type where she scored lowest when she completed a practice test, and items highlighted in green were the passage type where she scored highest. The student then used this data to prioritize the passage order when she took the ACT Reading test. At the bottom of Table 2, this student prioritized her passages as 4, 1, 3, 2, therefore, on test day, she started with passage 4 (Science) and finished with passage 2 (Social Science).

Build Stamina

Most students in Author's class could read with accuracy and expression but struggled with maintaining rate. Their struggle was being able to maintain focus while reading for the time set by standardized reading assessments. "The proficiency they lack is stamina—the ability to sustain mental effort without the scaffolds or adult supports" (Hiebert, 2014, p. 3). High-stakes reading tests, as well as tasks in college and the workplace, require students to build stamina and engage in independent, silent reading for sustained periods of time (Hiebert, 2014). Also important, stamina is needed to engage in reading for pleasure and to become a well-informed citizen. Ample research demonstrates that reading volume impacts reading achievement (Allington & McGill-Franzen, 2021). Data reveals that adolescents do not read often on their own; Twenge et al. (2018) found that 16% of 12th graders read a book or magazine daily in 2016, compared with 60% in the 1970s. It is imperative that teachers include time during class for students to "just read" so that stamina increases (Wilkinson et al., 2020). Time should be dedicated for students to read passages that are like what they will be reading on standardized tests as well as self-selected texts that are of interest. Next, strategies that Author used to build students' reading stamina are discussed.

Author emphasized the importance of reading stamina in her intensive reading class because students received 64 minutes for two modules on the new Digital SAT reading test and 35 minutes on the ACT reading test. For students to not lose focus and burn out by the time they got to the last passages on the test, they had to practice building stamina. One way that Author worked to build reading stamina in her class was by setting aside 10-15 minutes two or three times a week for student independent reading time. She received resistance to independent reading from many of her struggling readers, so she provided choice in reading materials (Brooks, 2019), flexible seating (Schilling & Schwartz, 2004), and a flexible classroom environment (Kasten & Wilfong, 2005) to encourage students to participate.

One example of a student's success during independent reading time was with a student named Isaiah (all names are pseudonyms). Isaiah's interest survey indicated that he was interested in rap music and sports. Author searched the internet for Coretta Scott King's award-winning books to see if there might be books of interest for Isaiah. She also looked for books on the National Book Award for Young People's Literature list. One of the books that she found on both lists was Jason Reynold's *Long Way Down* (2017). When Isaiah first picked up the book, he complained that it was too big and too much to read. Author told him she thought he would enjoy it because it was written like a longer version of a rap song. Isaiah opened the cover of the book, read the first two pages, and was hooked. Author read the book, as well, so she could have conversations with Isaiah about the book during their data chats which helped her to continue building a relationship with him. At the end of the school year when Isaiah took the SAT, he not only received the score he needed (480), but he scored 50 points higher than the required score, designating him college and career ready. The more Isaiah read and discussed the novel, the more his reading stamina proficiency increased. In fact, Isaiah stated that before he read

Reynold's book during his independent reading time, he never read a novel from start to finish. At 17-years-old, this was Isaiah's first time reading an entire novel. The increase in stamina played a significant role in helping him obtain the score he needed for graduation, and in turn, it encouraged him to apply for colleges that he once thought was an impossible dream.

Author also implemented a flexible seating and classroom environment to encourage students to participate in independent reading time and build stamina. Author created a coffee shop vibe in her classroom during independent reading time by providing coffee, slow-tempo music that allowed for students to relax, and flexible seating. When students moved to a place in the classroom where they were comfortable and relaxed, they became more engaged in reading and built their stamina as well.

Use Collaborative Learning

Another important step in creating success for struggling adolescent readers is using collaborative learning. According to Laal & Ghodsi (2012), collaborative learning has many social, psychological, and academic benefits, including but not limited to building diversity, reducing anxiety, developing positive attitudes toward teachers, promoting critical thinking, and improving classroom results. Further, adolescence is a developmental stage where students have an increasing need to feel related, especially among their peers (DPhil et al., 2020). Teachers should include opportunities for adolescents to engage in social interactions when reading so that they can further comprehend text. Research reveals that providing social interactions increases student engagement (Parsons et al., 2018), which is associated with increased reading achievement among adolescents (Guthrie et al., 2013). In this section, Author shares strategies that focused on collaborative learning during reading instruction.

Author's high school is an AVID (Advancement Via Individual Determination) certified site. AVID elective teachers and all core teachers routinely use AVID WICOR (Writing, Inquiry, Collaboration, Organization and Reading) strategies and other instructional practices to ensure college and career readiness and improved academic performance. As Author is an AVID certified teacher, she implemented many WICOR strategies, especially collaboration, on a weekly basis. The key to success for each of these strategies was that Author modeled them using explicit instruction. She also monitored all discussions to ensure students were on task and helped answer any clarifying questions. If students were stuck and needed help, she probed them to help get them on track. Each AVID collaborative strategy not only built a positive classroom culture by allowing students to work together on critical thinking tasks, but it also provided for differentiation.

One example of an AVID strategy that Author implemented regularly was Four Corners. First, students read a practice SAT or ACT reading passage and answered the corresponding comprehension questions. Each corner in Author's classroom was labeled with a letter corresponding to the answer choices on the reading passage. For SAT, the corners were labeled A, B, C, and D. For ACT, the corners were labeled A/F, B/G, C/H, and D/J. As Author read aloud each comprehension question, students moved to the corner of the answer choice that they selected. Once students were in their chosen corner, they discussed the evidence that they used to select the answer. If the answer was wrong, students began to discover why it was incorrect because they either could not find the evidence for support, or they had different reasons for why they selected the answer. On the other hand, students who chose the correct answer had an easier time agreeing on the evidence to support their response. If students realized that they selected an

incorrect answer, they moved corners and changed their answer choices before a whole-group discussion began.

Another AVID strategy Author implemented in her intensive reading classroom was Numbered Heads Together. After Author assigned students a reading passage, they read the passage independently and made text annotations. Once everyone in the group finished reading, students were assigned a specific task for the reading passage such as determining main idea, theme, text structure, or another standards-based question. Each member in the group contributed to the discussion by sharing their answer, and/or helping a peer determine the answer for their task. Students had a number already assigned to their seats, and when the timer went off to end group discussions, Author randomly selected a number. Students assigned to that number were required to share their answers with the class. If all students provided the correct answer, Author moved on to the next question that focused on a different task. If students had different answers, students either returned to their groups to reevaluate their responses or Author allowed time for whole-group discussion so that students could come to a consensus on the correct answer. Table 3 provides an overview of the strategies, their purpose in supporting students, and examples of how they are implemented for test preparation.

Conclusion

Many adolescents struggle with both the skill and will to read well (ACT, 2022; Nam, 2023; Nation's Report Card, 2019; Winberg et al., 2022). Not only does this impact lifelong reading and learning, but it also affects achievement on high-stakes tests which has ramifications for graduating from high school and enrolling in college. In this article, we provide research and strategies that have been successful in one high school teacher's intensive reading classroom. The strategies can help promote community as students work with both the teacher and their

peers and engage in active learning to increase their high-stakes test scores. Further, student voice is elevated as students engage in practices such as tracking their own data and justifying answers to practice high-stakes test questions in a whole group setting. Overall, the three components of this article, putting relationships first, bolstering self-efficacy, building stamina, and using collaborative learning, were effective ways to help adolescents become successful, confident readers, ready to enter college or the workforce upon graduation.

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Appendix A

Table 1
ACT Results Tracker

ACT Results Tracker								
40 questions			4 passages			35 minutes		
PASSAGE 1: PROSE FICTION			PASSAGE 2: INFORMATIVE (Social Science)					
Date	# Correct	Percent	Date	# Correct	Percent			
PASSAGE 3: INFORMATIVE (Humanities)			PASSAGE 4: INFORMATIVE (Natural Science)					
Date	# Correct	Percent	Date	# Correct	Percent			
WHOLE TEST								
Date:	Raw:	Scale:	Date:	Raw:	Scale:	Date:	Raw:	Scale:

Passage Priority: _____

Appendix B

Table 2
ACT Results Tracker with Student Data

ACT Results Tracker								
40 questions			4 passages			35 minutes		
PASSAGE 1: PROSE FICTION								
Date	# Correct	Percent						
10/2/23	4/10	40%						
10/23/23	5/10	50%						
11/13/23	6/10	60%						
12/4/23	5/10	50%						
1/16/24	3/10	30%						
2/5/24	5/10	50%						
PASSAGE 2: SOCIAL SCIENCE								
Date	# Correct	Percent						
10/3/23	2/10	20%						
10/24/23	1/10	10%						
11/14/23	3/10	30%						
12/5/23	2/10	20%						
1/17/24	3/10	30%						
2/6/24	3/10	30%						
PASSAGE 3: HUMANITIES								
Date	# Correct	Percent						
10/5/23	5/10	50%						
10/26/23	4/10	40%						
11/16/23	3/10	30%						
12/6/23	3/10	30%						
1/18/24	3/10	30%						
2/7/24	5/10	50%						
PASSAGE 4: NATURAL SCIENCE								
Date	# Correct	Percent						
10/6/23	7/10	70%						
10/27/23	6/10	60%						
11/17/23	5/10	50%						
12/8/23	7/10	70%						
1/19/24	4/10	40%						
2/8/24	7/10	70%						
WHOLE TEST								
Date:	Raw:	Scale:	Date:	Raw:	Scale:	Date:	Raw:	Scale:
10/6	18/40	18	11/17	17/40	18	1/19	13/40	15
10/27	16/40	17	12/8	17/40	18	2/8	20/40	20

Passage Priority: 4, 1, 3, 2

Appendix C

Table 3 <i>Strategies to Increase Skill and Will</i>			
Component	Strategy	Purpose in Supporting Students	Examples of Implementation
Building Relationships	Personality Tests (Myers-Briggs or Enneagram)	<ul style="list-style-type: none"> • Builds communication between teacher and student • Allows for an inclusive classroom • Creates grouping based on student needs 	<ul style="list-style-type: none"> • Students take a personality test during the first week of school • Teacher tracks all personality types for classroom data • Teacher refers to the data when communicating with students, grouping, and differentiating instruction
Building Relationships	Data Chats	<ul style="list-style-type: none"> • Builds trust between teacher and student • Enables students to take responsibility for tracking their own data • Allows quick check-in for mental health, grades, attendance and performance 	<ul style="list-style-type: none"> • Teacher uploads Google or Microsoft Data Form with check-in questions to Canvas • Students complete the form every week • Teacher looks through responses for immediate needs • Teacher uses responses to guide conversations about classroom data
Building Relationships	Restorative Justice Practices	<ul style="list-style-type: none"> • Keeps students in the classroom • Creates a classroom culture of communication and empathy 	<ul style="list-style-type: none"> • Students contribute to creating classroom procedures at the beginning of the year • Students partner with the teacher to choose consequences for misbehaviors
Building Self-Efficacy	Speed Drills	<ul style="list-style-type: none"> • Allows students to become more comfortable with the 	<ul style="list-style-type: none"> • Students learn that the total amount of time for the test divided by

		fast-paced timing of the high-stakes test	<p>the number of passages or questions equals the time they should spend on each passage or question (e.g. ACT: 35 minutes divided by 4 passages equals 8 minutes and 45 seconds per passage)</p> <ul style="list-style-type: none"> • Students practice completing reading passages/questions in the given amount of time
Building Self-Efficacy	High Interest Reading Passages	<ul style="list-style-type: none"> • Provides engaging reading material based on students' interests 	<ul style="list-style-type: none"> • Teacher creates a survey at the beginning of the year to determine students' interests • Teacher uses interests to find reading passages from practice ACT and SAT exams
Building Self-Efficacy	ACT and SAT Data Tracking Sheets	<ul style="list-style-type: none"> • Enables students to take responsibility of their own data • Allows students to track their strengths and weaknesses based on passage types for ACT and question types for SAT 	<ul style="list-style-type: none"> • Teacher creates an ACT data tracking sheet that is split by passage type • Teacher creates a SAT data tracking sheet that is split by question type • Students complete practice tests and track their scores on the data tracker • Students prioritize their passage types on the ACT and question types on the SAT
Building Stamina	Independent Reading	<ul style="list-style-type: none"> • Assists students in finding books they are interested in reading 	<ul style="list-style-type: none"> • Students are provided choice in their reading materials instead of

		<ul style="list-style-type: none"> • Creates a flexible classroom environment 	<p>being assigned specific texts</p> <ul style="list-style-type: none"> • Teacher assists students in finding texts based on their interests • Teacher creates a classroom with flexible seating
Collaborative Learning	Four Corners	<ul style="list-style-type: none"> • Builds a positive classroom culture • Allows students to work together on critical thinking tasks • Provides differentiation 	<ul style="list-style-type: none"> • Students take a practice ACT or SAT Reading test • Teacher labels each corner of the room with a letter that corresponds to the multiple-choice answers on the test ACT (A/F, B/G, C/H, D/J) or SAT (A, B, C, D) • Teacher reads aloud a question • Students move to the corners that represent their answer choices • Students discuss the evidence they used to support their answers • Teacher calls on a student from each corner to defend the answer • Students can move corners if they realize they chose a wrong answer because they cannot find text evidence or if a peer shares proof for a different answer
Collaborative Learning	Numbered Heads Together	<ul style="list-style-type: none"> • Builds a positive classroom culture • Allows each student to be accountable for 	<ul style="list-style-type: none"> • Students read and annotate the same practice test passage independently

		learning the assigned material	<ul style="list-style-type: none">• Teacher places students into groups and assigns each student a standards-based question such as finding the main idea• Students within each group have a discussion based on their assigned question to ensure everyone in the group can answer the question• Teacher provides all students in each group with an assigned number• Teacher uses a spinner to randomly choose a number• Students with the assigned number share the group's answer to the question• Teacher moves on to a new question if all students answer correctly• Teacher asks students to return to their groups to reevaluate the question if they answer incorrectly
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Authors' Biographies

Lunetta Williams, a former elementary teacher, is currently a Professor at the University of North Florida. Her research focuses on minimizing the achievement gap among economically disadvantaged and economically advantaged children, motivating students to want to read, and the use of children's literature in the classroom. She teaches literacy methods courses to graduate and undergraduate students.

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Principals' Perceptions and Experiences with School Sustainability Programs

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Abstract

The purpose of this study was to examine possible causes of the gap in existing green school programs and to examine the perceptions of, and experiences with, green programs by Florida's Green County Public Schools principals. This was examined through the lens of the Expectancy-Value Theory. Based on an examination of the data collected, condensed methods and findings of this full-length study are shared in this article. This study determined:

- the perceptions a principal has on the value of a green program does not affect the implementation of a green program on their campus,
- many schools have minimal faculty and staff helping with green school programs, which seems to be a large reason why many schools do not have these programs, and
- different principals have different understandings of what sustainability and/or a green program is.

For access to the full version of this study, please contact the principal investigator. This article serves as a shortened version of the problem, purpose, participants, gap, research questions, and methods of the full study. The district name in this study is a pseudonym for confidentiality.

Keywords: sustainability, school sustainability programs, principals, experiences, perceptions

In today's world of reducing, reusing, and recycling, the current generation has realized, however marginally, that they need to start taking care of the planet before it becomes uninhabitable. Knowing that the future is headed in a very "eco-friendly" way, and that more and

more jobs are being created having to do with sustainability and the environment, it would make sense that United States schools and students are being prepared to enter the workforce educated and environmentally literate to be placed in these jobs and do well.

This might be true for higher education, but it is not true for K-12 schools; it is especially untrue for K-5 students. In fact, in 5% of the U.S. states, climate change is only mentioned in optional high school elective classes. In the 29% of the states that require climate change to be taught, they teach that mankind is not the leading cause (The Aspen Institute, 2020). While the general population of the United States might favor the idea that climate change is a reality, over 50% of those who do believe climate change is real do not believe that it exists because of human activity (Leiserowitz et al., 2010). Students from Kindergarten through high school are held to standards of learning set forth by their state's Department of Education, yet only three states - Oklahoma, New Jersey, and South Carolina - have sustainability standards (The Aspen Institute, 2020), and there are currently no states that require climate education in K-12 schools (The Campaign for Climate Literacy, 2021).

Environmental education is no longer something that *might* be thought of for today's students, but it is something that is an essential need for *all* students (Tibola da Rocha et al., 2020). If students begin learning about climate change and environmental issues at a young age, interest may be piqued, and many of these students may continue learning about the issues and eventually emerge be part of the solution. Many career path desires begin at a young age (Pulliam & Bartek, 2018); the same would be true for students interested in environmental topics as they strengthen their environmental literacy along their educational career.

Problem

Green County Public Schools (GCPS) in Florida is one of the nation's largest school districts with over 200 schools and over 200,000 students. The district became a United States Department of Education Green Ribbon School in 2014, a distinction that began in 2012. This federally designated award is designed to put a focus on districts and schools in the nation who have shown exemplary progress toward sustainability education (also known as "green" education) for their students, schools, and communities (U.S. Department of Education, n.d.). As of 2023, GCPS is a Green Ribbon district, and five schools within the district have been named Green Ribbon Schools.

GCPS's Sustainability Department encourages schools with a green program to apply for the district's Green School Recognition Program, which showcases and awards funding to schools for their efforts in six categories of sustainability practices: school grounds enhancement, school sustainability, health and well-being, curriculum integration, community involvement, and school-wide culture (Green County Public Schools, n.d.). The program culminates with a banquet each year where school representatives can network, share ideas, and speak with community partners to begin new projects and initiatives at their schools. Twenty-five schools applied to be official district level Green Schools with the Green School Recognition Program for the 2022-2023 school year.

A complex problem of professional practice within GCPS is the lack of schools with green programs; programs that integrate sustainability and environmental education. Of 210 GCPS schools, only 25 schools were awarded district Green School status for the 2022-2023 school year, and three were awarded national Green Ribbon status. These staggering statistics suggest that schools are either not teaching sustainability practices and environmental education, or not placing importance on these topics. Topics of sustainability are lacking in GCPS, and

while this might not seem like a huge problem, it is quite serious. If students are not being taught about climate change and all the other environmental issues that come with it, the next generation of activists will be severely unprepared to fix the problems the generations before it have created. Examining the small-scale problem of professional practice within GCPS could contribute to solutions that inform future practices globally.

The long-term goal of GCPS is in any given five-year period, 100% of the GCPS schools will have applied as a district Green School. At a minimum, every school would apply at least once every five years, if not more frequently. This goal was set by the GCPS Sustainability Department and is in support of the GCPS Sustainability Plan 2030 (Green County Public Schools, 2023). This goal is not articulated in this formal strategic document; however, this is a non-published goal set forth by the Environmental Compliance & Sustainability Director and shared with their department.

Table 1

Number of Schools Applying for District Green School Status by Year.

School Year	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
# of Schools	7	9	12	9	12	12	14	17	40	25

*Information provided by GCPS Sustainability Coordinator

Over the last five years, there have been 108 applications received. Of those 108 applications, many were duplicate schools. With the duplicate schools removed, 55 GCPS schools have applied to be a district Green School over the last 5 years, or 26% of the 210 schools. With the long term goal being 100%, this is a gap of 74%.

The short-term goal of GCPS is for at least 50% of principals to establish/maintain a green program on their campus over the next two school years. Currently, based on the 2022-

2023 applicants for Green School status through the Green School Recognition Program, 12% of schools in the district have a green program of some sort on their campus. This is a gap of 38%. We will assume, for the purposes of this study, that schools that did not apply for Green School status in the 2022-2023 school year are not maintaining their green programs.

Research Questions

Two research questions guided this study. The first is “What perceptions do principals have about implementing green programs at their school?” The hypothesis for this question is that principals who value green programs and see green programs as useful and important will have a high expectancy for what they can accomplish with a green program at their schools. Alternately, the hypothesis is also that principals who do not value green programs, think they are unimportant, and do not think they are useful will have a low expectancy for what they can accomplish with a green program at their school.

The second research question is “What challenges might principals face when trying to implement a green program at their school?” Finding out the experiences principals have had, if any, with green programs in their schools will give valuable data as to what challenges they might be facing, and how the district can help steer them to success and eliminate the problems they might not be able to troubleshoot on their own.

Method

Participants

All principals in GCPS regardless of school type – elementary, middle, high, or K-8 – were invited to participate in this study. The recruitment email went out to 210 principals. Of the 210 recruited principals, 44 chose to open the survey and answer at least the first part (consent questions), with 25 principals completing the full survey.

Theory, Instruments, and Data Collection Methods

The psychological theory chosen to explain the performance gap in this study is Eccles and Wigfield's Expectancy Value Theory. This theory of motivation describes the relationship between a person's expectancy for success at a task or achievement of a goal in relation to the value they assign to said task or goal (Wigfield & Eccles, 2000). Wigfield and Eccles' theory proposes that the higher the value assigned to the task or goal, the higher the person's expectancy for successful completion of the task or goal (Wigfield & Eccles, 2000).

To understand whether this theory explains the performance gap, it was imperative to understand the value principals assign to green programs in schools. This data was collected through a Qualtrics survey. The survey began with the consent and qualifying questions, and then went into the Likert-type questions that were adapted from the Expectancy-Value-Cost Scale (Kosovich et al., 2015). According to Kosovich et al. (2015), their study that created the Expectancy-Value-Cost Scale was part of a National Science Foundation grant, and a group of professionals assessed the survey items for validity. Questions for expectancy, value, and cost of having a green program at their school were asked of the principals and participants responded with either strongly disagree, disagree, slightly disagree, slightly agree, agree, or strongly agree (see Appendix A for the original and adapted surveys).

The Qualtrics survey then asked open-ended questions to gather the experiences of the principals. The questions focused on principals' experiences with sustainability, their school's current approach to a green program, what support they have been given by the district, and the

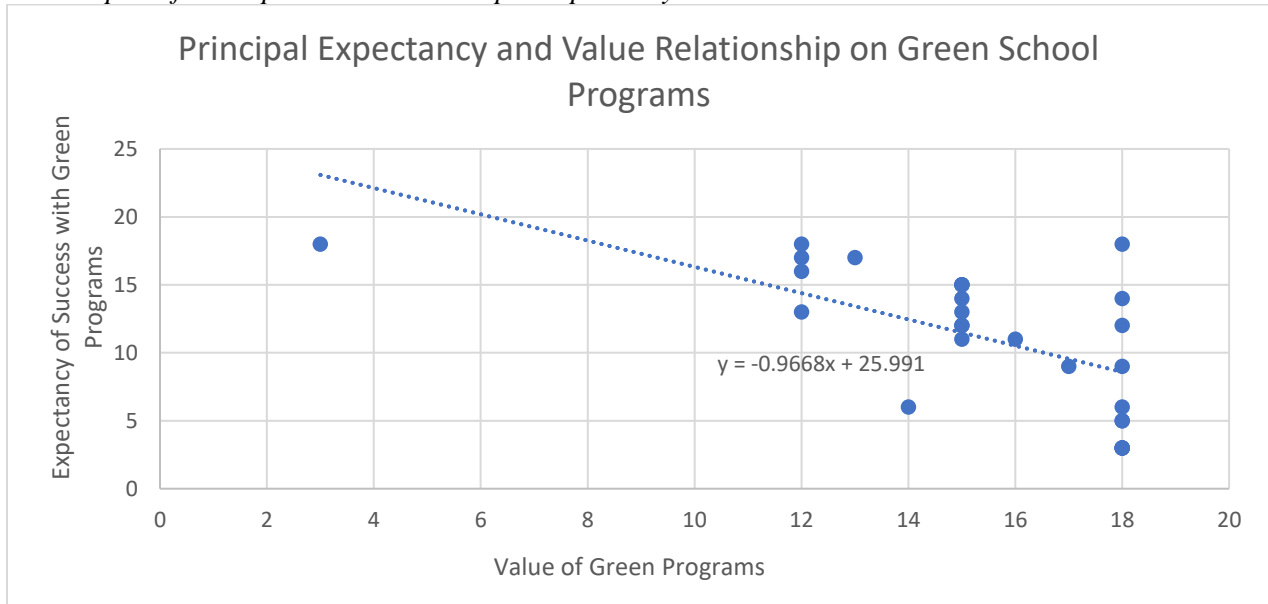
level of participation of their faculty and staff regarding the implementation of their green program.

Findings from Data Collected

The quantitative data collected to answer the research question “What perceptions do principals have about implementing green programs at their school?” showed a negative relationship between the value a principal gives to green programs and the expectancy they have of being able to successfully implement a green program at their own school. The perception a principal has of the value of a green program does not affect the implementation of a green program on their campus. This study also found that many schools have minimal faculty and staff helping with green programs, and the task of implementing a green program is rarely allocated from the principal to a member of his or her staff.

The findings of this research do not support the choice of the Expectancy Value Theory for this study because of the negative correlations between the value a principal places on green programs as it is related to the expectancy of success with implementing the green program. The hypothesis of the study was not correct. It was hypothesized that the more a principal values a green program, the more expectancy there is that a green program at his or her school will be successful. This is not true. The value placed on green programs seems to have no actual effect on the expectancy of success with these programs.

Figure 1
Scatterplot of Principal Value vs. Principal Expectancy



The qualitative data collected to answer the research question “What challenges might principals face when trying to implement a green program at their school?” showed that many schools have minimal faculty and staff helping with green programs, which seems to be a large reason why many schools do not have them. Fourteen of the 22 principals that answered the open-ended survey questions responded that there was anywhere from no participation to minimal participation. When asked to describe their school’s current approach to sustainability, many principals only reported their school did recycling programs.

Furthermore, principals in general appear to have different understandings of what sustainability and/or a green program is. For example, six of the 14 principals who indicated that their school did not have a green program also went on to describe recycling efforts or other initiatives of their faculty and staff. One principal even stated that 60% of his or her staff participates in their sustainability program, but then replied “no” to the question “Does your school have an already established green program?”

The answer to the research question is that one challenge principals face is lack of personnel willing to help with such a problem, which therefore leads to another question, “Why is there a lack of staff willing to help implement a sustainability program at their school?” Further research on the topic could help answer this new question.

Table 2

Categorized Responses to Participation Question.

Zero Faculty/Staff Participation	Minimal Faculty/Staff Participation	Moderate to School-Wide Participation
4/22	10/22	8/22

Because so many principals reported a lack of participation, or none at all, within their faculty and staff, the conclusion is made that these principals are not allocating the responsibilities to their employees. The reason for this lack of allocation is unknown from the data collected, but a hypothesis for this is teachers and staff already have too much on their plates, or even a lack of priority for a green program to exist. One principal even replied, “*There isn't one [a green program] as it does not appear to be a priority within the school culture.*”

In a study by Forman et al. (2009), it was concluded that there are many factors that contribute to the implementation and sustainability of programs within K-12 schools. Some of those factors were principal, administrator, and teacher support of the program, suitable training, adequate funding, and alignment with the school’s philosophy and goals. Looking at these findings through a green program lens, if faculty and staff do not support such a program, whether because of beliefs or inability to provide time to invest into it, the possibility to sustain the program is weak.

In another study by Machado and Chung (2015), principals indicated that teacher willingness and suitable professional development were the biggest barriers to successful

implementation of programs at their schools. According to Bolman and Deal's (2021) theory of division of labor, tasks must be allocated for efficiency to happen. However, Machado and Chung (2015) indicate that if a teacher is not willing to give up the time and effort to keep a program running, success of the program is unlikely.

Study Limitations

Gathering qualitative data through open-ended survey questions provided limited responses to questions. It would have been optimal to have been able to conduct interviews with multiple principals, however this was not possible due to the research constraints set forth by the district's research department. Also, it was found that participants do not provide the time, or find it worth their time, to answer open-ended questions. Two of the 44 participants simply responded to each question with nonsense words ("dsfas", "dasv", "davsd", etc") while 19 of the 44 stopped the survey after the Likert-type questions. These actions made it hard to get a good number of quality data.

Discussion

The study's findings suggest that the successful implementation of green programs in schools depends heavily on the attitudes, expectations, and actions of school principals. This has significant implications for both teachers and students, highlighting the need for strong leadership and clear communication in promoting environmental education (Schelly et al., 2012). It underscores the importance of fostering a school culture that values and supports green initiatives (Yli-Panula et al., 2022).

These results are important for school leaders. If principals do not expect to successfully implement green programs at their schools, they may not prioritize or place emphasis on these initiatives. This could mean that teachers are not given the necessary resources or support to

incorporate environmental education into their curriculum. Furthermore, when there is insufficient delegation of tasks by principals (Neil et al., 2001), teachers may feel unsure about who is accountable for leading and undertaking these initiatives. This could lead to uncertainty, confusion, and a lack of coordination or organization in implementing green programs.

These findings are also important for students. Students are the beneficiaries of these educational initiatives. If green programs are not successfully implemented, students may miss out on impactful learning opportunities about environmental stewardship. Additionally, if principals undervalue these programs, it could send a message to their scholars that environmental issues are not important, possibly influencing their behaviors, attitudes, and opinions towards the environment.

There is one main solution derived from the collected data to help eliminate the problems this study addresses. This is to assign a Green School mentor to each principal/school, who can help start schools on the right foot and assure that their first year with implementing a green culture through their own program is not overwhelming (Augustine-Shaw & Liang, 2016). Problems can arise if a principal starts with incorrect perceptions about how green programs run and how much work it is on those involved, and they may start in a way that is excessively time-consuming and difficult for the staff and students. A mentor could help with this.

Implications for ELA Teachers

There are many suggestions for implementing green programs in K-12 schools for teachers of English Language Arts (ELA). The research that has been done on teaching illustrates the importance of taking an interdisciplinary and transdisciplinary approach to green programs and how it is simultaneously important to acknowledge different perspectives on sustainability (Annan-Diab & Molinari, 2017). Integrating disciplines facilitates problem-solving

as it promotes better understanding of each part that comprises a problem and fosters solutions which blend concepts from different disciplines (Summers et al., 2005, p. 630). Since green programs typically include developing a solution to the problems that face the world, integration of disciplines is necessary and powerful for learners.

ELA teachers can integrate environmental and sustainable literacy into their lessons in many ways. Nature poetry, journaling, letter writing to companies and corporations, reading different genres about the environment, writing stories about animals and their habitats, research projects on topics such as pollinators or water conservation, comparing non-fiction and fiction genres about the same environmental topic, and planning a timeline for hands-on projects students can put into action on campus or in their community are just some of the ways ELA teachers can incorporate sustainability and environmental education into the state-mandated standards they are required to teach. In a case study by Redman (2013), it was found that “not only were the students more engaged in the content, but sustainability topics provided a great platform for integrating many of the standards targeted throughout the year” (p. 22).

When coupled with the suggested solution of mentorship for principals and schools, ELA teachers could find themselves with examples, guidance, and resources to successfully integrate sustainability curriculum into their lessons. Support from experienced mentors with expertise in establishing green programs in their schools which are founded on best practice can make a positive difference on principals wanting to establish green programs on their campus (Augustine-Shaw & Liang, 2016), and therefore impact teachers of many disciplines in similarly positive ways.

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Appendix A

Coding Tables for Interviews

This appendix consists of the Likert-type survey questions from the expectancy-value-cost scale by Kosovich et al. (2015), and the questions that were adapted for this study, as discussed in the methods section of this study.

Kosovich (2015):

1	2	3	4	5	6
<i>Strongly disagree</i>	<i>Disagree</i>	<i>Slightly disagree</i>	<i>Slightly agree</i>	<i>Agree</i>	<i>Strongly agree</i>
E1	I know I can learn the material in my [math or science] class.				
E2	I believe that I can be successful in my [math or science] class.				
E3	I am confident that I can understand the material in my [math or science] class.				
V1	I think my [math or science] class is important.				
V2	I value my [math or science] class.				
V3	I think my [math or science] class is useful.				
C1	My [math or science] classwork requires too much time.				
C2	Because of other things that I do, I don't have time to put into my [math or science] class.				
C3	I'm unable to put in the time needed to do well in my [math or science] class.				
C4	I have to give up too much to do well in my [math or science] class.				

Adapted Questions (2023):

Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree

-
- E1: I know I can learn what is necessary for my school to implement a school sustainability program.
 - E2: I believe that I can be successful in implementing our school sustainability program.
 - E3: I am confident that I can understand the content of our school sustainability program.
 - V1: I think having a school sustainability program is important.
 - V2: I value school sustainability programs.
 - V3: I think having a school sustainability program is useful.
 - C1: A school sustainability program requires too much time.
 - C2: Because of other things that I do, I don't have the time to put into a school sustainability program.
 - C3: I am unable to put in the time needed to do well with a school sustainability program.
 - C4: I have to give up too much to do well with a school sustainability program.

Author Biography

Amanda Ferguson has been an elementary teacher for 18 years. She has been working with her district's sustainability department while heading her school's sustainability program for several years as well. She completed her B.A. in English with a specialization in Children's Literature at the University of Florida, her M.A. in Elementary Education at the University of Central Florida and is currently pursuing her doctorate in Curriculum and Instruction at the University of Central Florida. She can be contacted at Amanda.Ferguson@ucf.edu.

The Art of Classroom Conversation: Building Productive and Purposeful Talk

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Abstract

We often ask students to participate with a partner, in small groups, or in whole group discussions without explicit structures and instructions to engage in a coherent and effective academic discourse, both as a speaker and as a listener, for progressive learning and thinking. This article provides effective support for teachers and students to understand and engage in the dynamics of a quality discussion and how it will enhance student understanding of a topic of study and build content knowledge.

Keywords: collaborative conversations, quality talk, productive dialogue, purposeful talk comprehension, knowledge building, listening, and speaking

Engaging in meaningful conversations is a vital tool for fostering understanding, both within the classroom and in broader contexts. Such discussions serve as catalysts for nurturing curiosity among learners. In classrooms where students collaborate to interpret texts and collectively construct knowledge, the depth of their engagement is heightened as they openly exchange and grapple with their ideas (Beck & Sandora, 2016; Mercer, 2016; Resnick et al., 2015). These dialogues and exchanges not only facilitate empathy but also aid in clarifying thoughts and resolving misunderstandings.

Intentional and purposeful dialogue plays a crucial role in equipping children with a strong vocabulary for better reading comprehension, effective communication, and a nuanced grasp of other perspectives (Cabell & Zucker, 2024; Silverman et al., 2020). This understanding

also reinforces learning endeavors, fostering students' ability to recognize, articulate, and expand their knowledge through linguistic exchanges. As such, educators can anticipate students honing their language proficiency, enhancing reading comprehension, elaborating on their thoughts, and embracing alternative viewpoints to construct knowledge when provided with ample opportunities for meaningful and reciprocal interactions (Resnick et al., 2010; Webb et al., 2014). Mercer states (2016) that there is "...convincing evidence for the educational value of providing structured opportunities for collective thinking" (para. 27).

Learning experiences without scaffolds and the gradual release of responsibility can often be tiresome and unproductive experiences for both the teacher and the students. Intentional, guided interactions require a More Knowledgeable Other (MKO), or a more experienced member of society (Vygotsky, 1930-1934/1978) to alleviate ineffective discussions. In the classroom, the MKO may be the teacher or a peer. Classrooms must prepare students for productive and purposeful discussions and model how to build on other ideas, with phrases like, "Let's pause and think about this for a moment," after asking some questions, providing more time for some learners.

Think of teacher guidance as the Goldilocks Zone or the Zone of Proximal Development (ZPD) for finding the balance for learners to grapple through a task. For collaborative conversations, too much direction puts the expert, the teacher, at the helm and disables students from co-constructing knowledge. Too little guidance hinders the development of a meaningful discussion from building thinking and learning.

Attentive Listening for Productive Talk

For students to actively participate in meaningful discussions, it's crucial for them to cultivate a mindset of respect, attentiveness, and empathic listening. This foundation enables

them to effectively engage in group conversations where they can pose insightful questions, contribute to evolving ideas, seek clarification, and even summarize key points. To achieve genuine attention, learners must maintain both mental and physical focus, including facing the speaker, offering appropriate eye contact, and utilizing body language like nodding to signal understanding or agreement (Mercer & Dawes, 2018).

By highlighting those points as guidelines, students can internalize them and apply them during discussions. This approach fosters an environment conducive to stimulating, interactive, and well-reasoned exchanges, allowing students to absorb knowledge and perspectives like sponges. Table 1 suggests guidelines for building a community of listeners in K-12.

Table 1

Guidelines for Listening

K-5	6-12
Be Attentive: <ul style="list-style-type: none">• Engage your mind• Be ready to interact with others Engage Your Body: <ul style="list-style-type: none">• Be alert• Face the speaker• Use gestures to enhance the conversation• Be aware of your behavior	Level up your listening game with these top tips: <ul style="list-style-type: none">• Focus on being an attentive listener• Dive into conversations with full-on enthusiasm• Be aware of positive body language• Stay sharp and super focused• Glue your eyes and ears to the speaker• Sprinkle in some gestures for that extra pizzazz• Be aware of your behavior

Note: Modified from Mercer, N. & Dawes, L. (2018).

Once students have an understanding and practice in low-stakes discussions using the guidelines, students can then begin to participate in more high-stakes knowledge and comprehension-building discussions.

Conversations to Support Comprehension and Knowledge Construction

Collaborative Conversations

Collaborative conversations build ideas, promote understanding of a text, and clarify students' thinking. They allow students to elaborate, agree, disagree, justify their claims, and ask questions. Furthermore, collaborative conversations help students form connections between words and integrate meaning and context through questioning, which is needed for all learners in all disciplines (Graves, August, & Manuela-Martinez, 2013).

Mercer notes (2019), there is "the reciprocal developmental relationship between individual and collective thinking: we learn to reason as individuals by taking part in collective reasoning, but we also influence collective reasoning (and its knowledge outputs) through our individual contributions to communal activities" (para. 34). When students are provided deliberate and purposeful time to talk through content and develop ideas, they reach a better understanding, or consensus, extending and deepening their knowledge.

In collaborative conversations, students develop a voice and solve ideas and incongruities within the text and their world. Conversations help promote understanding in the classroom and clarify students' thinking. Teachers need to clarify the high expectations during conversations to ensure as many students are focused as possible.

Navigating these conversations can be complex, with classroom discussions becoming unproductive because one to two students take control, potentially go off-topic, or even dominate the conversation. Simply informing students that a discussion will take place on a certain topic without offering modeling and guidance on techniques such as allowing wait time, agreeing or respectfully challenging ideas, and providing reasons or evidence to support a claim often leads

to discussions falling flat. This typically results in a scenario where the teacher asks questions, students respond, and the teacher evaluates, as highlighted by Frey and Fisher (2011) and Reznitskaya et al. (2008).

These types of discussions support vocabulary development, reasoning, and argumentation and support learners with engaging in complex texts (Fisher & Frey, 2014). As Snow and O'Conner (2013) note, to participate successfully in collaborative conversations, teachers must have structures and routines in place to support learners. McKeown et al. (2009) found advantages of discussions because students made better connections and elaborated on their thoughts and ideas for students' reading comprehension. A recent study in England by Burgess et al. (2022) found that when students engaged in discussions with their peers, they made achievement gains on their General Certificate of Secondary Education (GCSE) exams.

Effective communication about a topic requires a solid foundation of knowledge and language skills. Learners can benefit greatly from background information and language support tools like discussion prompts and vocabulary charts. These aids foster meaningful, respectful, and high-quality academic discussions. Encouraging students to experiment with new vocabulary in authentic contexts allows them to showcase their comprehension effectively. Furthermore, repeated exposure to and practice with new words through scaffolded conversations is crucial for developing proficiency (Beck et al., 2002; Graves et al., 2013).

Planning and Preparing for Purposeful Talk

The purpose and the objective are important parts of any lesson and equally crucial in collaborative conversations. Students should be aware of the purpose, and there should be process checkpoints related to guidelines for effective communication, for example, respectfully

disagreeing, not shutting anyone down, and outcome goals. Tables 2 and 3 are examples of guidelines you may want to use in your classroom for K-5 and 6-12.

Table 2

K-5 Guidelines

Guidelines are essential, so everyone knows what is expected.

- Practice listening with attention.
- Fully listen to others and think about what we hear.
- Give reasons for what we say.
- Take risks and experiment and or explore.
- Understand there are no mistakes.
- We are all in it together to attain a goal.
- Multiple points of view wanted to expand the conversation.
- Build ideas off each other to progress.
- Everyone is important.
- Allow for pauses or wait time.
- Stay aware of your energy

Note: Modified from Mercer, N. & Dawes, L. (2018).

Table 3

6-12 Guidelines

Establishing essential guidelines is crucial for clear expectations:

- Practice attentive listening.
 - Bring a positive attitude, as everyone is equal. No exceptions!
 - Everyone has a voice, so don't be shy and jump right in.
 - Don't be afraid to take risks, you'll be surprised by the result.
 - Understand that mistakes are just hidden opportunities.
 - Other ideas may be better and may challenge you, so be prepared to change your mind.
-

- Be ready to back up your words with reason. It'll happen.
 - Shared ideas should be agreed upon if a collective decision is the goal.
 - Emphasize a group effort towards achieving a common goal.
 - Welcome multiple viewpoints to broaden perspectives.
 - Collaborate and build upon each other's ideas during discussions.
 - Incorporate pauses and allow for wait time to foster thoughtful discussions.
 - Everyone wins when the whole team agrees as one!
-

Note: Modified from Mercer, N. & Dawes, L. (2018).

Benefits of Collaborative Conversations

When students are engaged in collaborative conversations, their thinking expands through exposure to new ideas and perspectives (Reznitskaya et al., 2009), ideas are clarified, academic vocabulary is promoted (Frey & Fisher, 2013; Wasik & Iannoe-Campbell, 2012), and comprehension is improved (Applebee, Langer, Nystrand, & Gamoran, 2003). Some student motivation may increase as their voice is being heard. Other students may engage in a productive struggle as they work through their thoughts on the reading and how to contribute to the conversation meaningfully. As teachers, we want to ensure that the ideas are linked and salient, staying on track and matching the purpose of the discussion.

Ample opportunities provide students with deliberate and purposeful time to talk, contribute their thoughts and ideas, and negotiate meaning with others by building perspectives about a text or concept. Students should be encouraged to provide evidence and justify their reasoning, and expressing contrasting views is a feature of quality discussions that create better results. Additionally, collaborative conversations help students develop a voice, which is especially important for introverted, or ELL students.

Fostering Student Questions

Questioning is part of any discussion and the foundation of inquiry. Questioning supports higher-level thinking and provides opportunities for students to explain, clarify, probe, make connections, analyze, and evaluate. Having students generate questions is difficult, but essential, and this task takes time and needs nurturing. To foster student questions, teachers will need to model the use of questions during a collaborative conversation, provide discussion stems, and give feedback on the types of questions and how they contribute to the goals of the conversation.

Intentional questions in collaborative conversations allow teachers to scaffold a complex text so that students acquire meaning and stay involved in the text. Furthermore, when teachers provide these opportunities and scaffolds for struggling readers to read and discuss complex texts, they acquire positive experiences and productive struggle within their literacy learning (Fisher & Frey, 2013; Learned, 2016). Following questions, teachers may allow thinking or wait time for students to have a chance to develop more complex ideas (Michaels et al., 2008).

Not only do learners need discussion stems during conversations to construct meaning, but they also need to have a growing understanding of how conversations build, including wait time, ensuring that everyone's voice is heard, and how to probe and politely challenge ideas without a tone of aggression. Scaffolds for time management, such as those from Gaunt & Stott (2018, p. 33), support students in learning how to use language to navigate a discussion.

- We're about halfway through our time. Who hasn't had a chance to speak yet?
- We only have 5 minutes left. Can someone summarize the main points so far?
- It seems we all agree on ...so shall we move on to talk about...?
- If feels like we are stuck on ... Let's put it to one side for a moment and talk about...
- I've noticed Y hasn't spoken yet. Would you like to add something?

Different types of discussion protocols in the classroom allow time for introverted students to talk and all students to actively listen. Discussion frames bear a similarity to sentence frames for writing. The teacher provides a portion of the sentence, and the students fill in the rest with their own dialogue and thoughts. Discussion frames support students' thinking, use of academic language, and sentence structure (Frey & Fisher, 2011). The discussion stems will vary by the level of proficiency of the speaker, as well as the discipline. The stems within Table 4 may be used as prompts and cues for students to think and how to respond during the conversation if needed.

Table 4

Discussion Stems

Agreeing and Building on Ideas	Challenging Ideas
I agree with...	I partially agree with Y, in that... but I'd like to add ...
I agree with Y's point	I have a very different opinion than Y because...
I have a similar opinion to Y	I like what you said about ..., but I disagree with ...
Y said ... which I agree/disagree with because	I understand what you're saying, but the way I see it...
I'd like to support Y's point because...	I don't support Y's point because...
Yes, and maybe...	Y said..., but maybe...
Yes, and furthermore...	I read it differently...
I agree with Y, here's why...	I disagree with Y, here's why...
The author's claim...I agree because	While ... is important, we also have to consider...
On page #, in paragraph #... the author states...	However, the author states...on page #...

Adding to what Y said...	The evidence states... and this is counter to what Y said.
I am inclined to agree that...because...	We see things differently, because ...
I love what you said about...have you thought about...	I understand what you're saying, but I think it has a deeper/different meaning...
I like what you said about ..., but have you also thought about ...	I respect your opinion, but...

Clarifying	Paraphrasing
Can I clarify, did you mean...?	So, you're saying...
Can you confirm what you just said?	Is it your position that...
I understand ..., but can you expand on ...	Let me see if I got this right...
I'm confused when you say ... please elaborate/expand on that?	What I'm hearing you say is...
I'm intrigued when you say ... can you elaborate/expand on that?	I've been listening to X, Y and Z, and they seem to be saying...
Can you tell me more about...	We've been talking about...
Could you please... explain that again.	If I'm hearing you correctly...
I'm curious, what did you mean by...	The key points mentioned so far are...

Expressing Opinion/ Ideas on the Table	Asking Questions
I believe...	Why do you think that?
I wonder...	How do you know that?
I think...	What evidence do you have to support your claim?
In my opinion...	Y, do you agree with X, or disagree?

Expressing Opinion/ Ideas on the Table	Asking Questions
Here's a thought...	What's your opinion of...?
A question I have now is...	What am I stuck on? What do I need to know?
I used to think... but now I think...	What do I know about that is like this?

Note: Modified from Mercer, N. & Dawes, L. (2018).

To foster a climate where students ask high-quality questions, it's crucial to greet their inquiries with genuine enthusiasm and devote time and attention.

When the discussion concludes, students could offer feedback on each other's technique during the discussion (Hattie, 2009; Mercer & Dawes, 2019). Learners first provide a compliment and then a constructive comment for improvement, if warranted. For example,

Student A compliments Student B, "Student B, you explained your reasons with evidence very well."

Student B responds to Student A, "Thank you."

Student A gives Student constructive feedback, "I think it would help to make more eye contact with each other."

Student B responds, "Okay, thank you."

James Britton wrote in 1976, "Reading and writing float on a sea of talk," (p. 11). It is through talk that we extend our knowledge, clarify our thoughts, build, and strengthen vocabulary, and engage in perspective-taking and understanding. We learn new words by hearing others use them in context, and then use and explore these new words in subsequent conversations.

Academic conversations are fundamental to learning, communicating, growing, and connecting with others. Creating robust, meaningful language experiences to retrieve and

practice specific language structures consolidates into long-term memory. These opportunities help students form connections between words, integrate meaning and context through questioning, and build word representations, which all learners need (Graves, August, & Manuela-Martinez, 2013). Language is a tool for students to develop higher mental functions with greater fluidity in reasoning, increased memory retention, and a deeper understanding and capacity for new learning. These instructional practices and collaborative conversations help students find their voice as well as share and build knowledge.

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The Relationship Between the Degrees of Reading Power Test and the Stanford

Achievement Test – Tenth Edition

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Abstract

Many state departments of education require schools to measure reading fluency to identify students requiring remedial reading instruction and to forecast future performance of overall reading achievement on standardized tests. However, the ability of reading fluency to predict reading comprehension may not be strong for some segments of the student population. This study investigated the correlations between students' reading comprehension achievement on the Degrees of Reading Power Test (DRP) and the Stanford Achievement Test – Tenth Edition (SAT-10). Participants were 129 high- and low-income third graders. Results indicated statistically significant positive correlations between third-grade DRP and SAT-10 reading comprehension scores for both high-income ($r=.847$) and low-income ($r=.737$) students.

Over the past decade, educational systems at the federal, state, and local levels have increasingly emphasized the importance of early literacy. Federal organizations, including the National Institute for Literacy (NIFL), have produced documents such as *Put Reading First* (2001) in an attempt to work with researchers, educators, parents, and policy makers to ascertain the critical components of beginning reading and determine best practices in reading education. Equally important to teaching beginning reading is the accurate assessment of both prerequisite literacy skills and reading comprehension.

Most, if not all, state departments of education in the United States require public schools to administer standardized tests of students' progress in reading. This testing often begins at the second or third grade, and results are commonly used to establish whether or not individual schools are adequately teaching beginning reading. Furthermore, many states then use this data to decide if an individual school requires state intervention to ensure adequate instruction and student reading outcomes. For these reasons, many schools have begun to assess beginning reading skills such as phoneme awareness and reading fluency in the first through third grades to better predict how children will perform on more high-stakes tests of reading comprehension.

Due to the requirement of the No Child Left Behind Act (2001) to utilize scientifically-based measures of reading progress, more than half of the states decided to employ the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) to evaluate reading skills in the early grades (Buskist, 2008). Many studies have shown DIBELS Oral Reading Fluency (ORF) measures as reliable predictors of reading achievement on standardized tests (Elliot, Lee, & Tollefson, 2001; Hintze, Ryan, & Stoner, 2002; Speece, Mills, Ritchey, & Hillman, 2003). For this reason, DIBELS ORF results are used to assess students who are making adequate reading progress, as well as, identify students who may require additional remedial instruction prior to standardized testing.

Currently the researcher's home state begins to formally evaluate the effectiveness of schools' reading instruction in the third grade with the Stanford Achievement Test – Tenth Edition (SAT-10), a high-stakes achievement test that determines a schools' probational status. Additionally, beginning in the 2003-2004 school year, schools were required to utilize the DIBELS ORF assessment for students in first through third grades to identify children whose

reading achievement was insufficient and thus, would be likely to perform poorly on the SAT-10 assessment of reading comprehension. This practice seems reasonable since there appears to be a strong connection between reading fluency and reading comprehension. The 1992 National Assessment of Educational Progress (NAEP) found a relationship between the ability to read fluently and overall comprehension (Pinnell, Pikulski, Wixson, Campbell, Gough, & Beatty, 1995; Rasinski, 2000). This relationship exists because children with automatic and accurate word recognition are better able to gain meaning from written text than those who struggle to decode individual words (Armbruster, Lehr, & Osborn, 2001).

The current study was driven by the first author's experience as a remedial reading teacher and school-wide reading coordinator at a low-income rural school. Due to reading achievement scores for grades K-6 averaging below the 30th percentile on standardized tests, the school system made a commitment to implement a structured and intensive systematic reading program within the school. Teachers were trained on implementation of the reading program and provided ongoing, daily feedback and advice from the reading coordinators. Students were grouped at their appropriate instructional levels and instruction focused primarily on decoding skill and fluency. The teacher's hard work paid off and over the next four years average reading achievement scores steadily increased to over the 50th percentile. However, over the subsequent three years, test scores appeared to reach a ceiling.

This experience led the researchers to wonder why some of these lower-income students who were reading with tremendous fluency were unable to achieve similar comprehension to their wealthier peers. It appeared that students' reading comprehension was no longer improving in relation to reading fluency. If so, then as a reading coordinator, the first author could no longer rely on DIBLES ORF as a measure of reading fluency to predict how this

particular demographic of students would perform on SAT-10 standardized test of reading comprehension.

Further research confirmed first author's hypothesis that reading fluency may not always be predictive of reading comprehension for students of poorer backgrounds. In 2003, Buck and Torgesen reported statistically significant positive correlations between third-grade DIBELS ORF scores and the Florida Comprehensive Assessment Test (FCAT). However, in the same year Cook (2003) did find socioeconomic status to have an impact on reading fluency's ability to predict reading comprehension. Further supporting Cook's results, correlations between DIBELS ORF and the SAT-10 were found to differ at a statistically significant level between fluent high-income ($r=.600, p<.001$) and fluent low-income ($r=.229, p<.001$) children (Paleologos & Brabham, in press).

Due to these findings, teachers and administrators cannot be certain that monitoring the reading fluency of low-income children is adequate enough to predict reading comprehension outcomes on standardized tests. If not, then educators must consider utilizing valid and reliable measures of reading comprehension in the first through third grades. One possibility for teachers may be the Degrees of Reading Power (DRP) test, which has been found to have positive correlations of .77 to .84 in the third through sixth grades with the California Achievement Test (Margolis, 2001) and correlations of .70 to .80 in the third through sixth grades with the FCAT (Baldwin, Porter-Smith, & Landers, 2003). The purpose of the current study was to determine if DRP test scores could be utilized to accurately predict SAT-10 reading comprehension scores for both high- and low-income third-grade children.

Method

Participants

The participants consisted of 129 third-grade students. Analyses included all participants, as well as those categorized receiving free or reduced lunch ($n=62$) and not receiving free or reduced lunch ($n=36$). Free or reduced lunch status was unavailable for 31 participants, who were not included in analyses investigating students by income level. Participants labeled as high-income, lived in areas with median incomes over \$100,000; whereas, participants labeled as low-income received free or reduced lunch within schools where at least 90% of the student population received free or reduced lunch.

Instruments

Two instruments were utilized to measure the participants' reading comprehension achievement for this study.

Degrees of Reading Power. The Degrees of Reading Power (DRP) employs a modified cloze format that requires students to construct meaning across an entire paragraph or passage to assess third-grade students' ability to comprehend written material (Green, 2001). Students work independently under no time constraint to identify the appropriate answer that best supports the meaning of passages containing missing words. Kuder-Richardson (K-R-20) internal reliability coefficients of .92 with a standard deviation of 2.7 were found for the third-grade DRP (Green, 2001; Margolis, 2001). It has been reported that the DRP has withstood extensive tests of content, construct, and criterion-related reliability (Touchstone, 1995). Only raw scores for reading comprehension were used in this study.

The Stanford Achievement Test – Tenth Edition. SAT-10 served as one measure of third-grade students' reading comprehension. The SAT-10 is a group-administered exam using only multiple-choice questions. The third-grade spring SAT-10 test of reading comprehension yielded a Kuder-Richardson reliability coefficient of .93 (Harcourt, 2003). The test was developed after

reviewing and analyzing popular textbooks in major subject areas, state instructional standards, and “important educational trends and directions as expressed by the national professional organizations” (Harcourt, 2003, p. 8). Additionally, item pools were developed by trained writers and content area specialist, which were then reviewed by editorial, measurement, and area specialists. Items were intended to measure both basic knowledge and critical thinking skills.

Design

To examine the relationship between SAT-10 reading comprehension scores and DRP comprehension scores, bivariate correlations were used. Then, data was disaggregated to determine if that relationship was consistent for both high- and low- income students. The correlational coefficient, known as Pearson’s product-moment correlation (r), was the principal statistical measure used in this study. This coefficient was used to determine the strength and direction of the relationships between independent and dependent variables. The SAT-10 served as the independent variable while the DRP served as the dependent variable.

Results

All analyses utilized raw scores provided by the researcher’s state department of education and cooperating schools. Means and standard deviations are presented in Table 1.

Pearson product moment correlation coefficients between third-grade SAT-10 and DRP reading comprehension scores for all participants ($n=129$) were obtained. Statistically significant positive correlations between third-grade SAT-10 and DRP reading comprehension scores were found ($r=.781$).

Pearson product moment correlation coefficients between third-grade SAT-10 and DRP reading comprehension scores for high-income ($n=36$) and low-income ($n=62$) students were obtained. Statistically significant positive correlations between third-grade SAT-10 and DRP

reading comprehension scores were found for both high-income ($r=.847$) and low-income ($r=.737$) were found.

Discussion

This research was conducted because both practical experience of the researchers and empirical data suggest that reading fluency, as measured by DIBELS ORF may not accurately predict outcomes of reading comprehension for students of low-income families, as measured by standardized tests. The creators of DIBELS clearly state that the DIBELS measures are designed to measure subset reading skills that can help teachers identify students who may require additional skills instruction and “are not intended to be exhaustive of all important skill areas for young children” (Kaminski & Good, 1996, p. 216). Furthermore, DIBELS’ authors do not appear to contend that DIBELS ORF measures are predictive of reading comprehension outcomes for all students. Instead, practitioners choose to rely on this measure of reading speed and accuracy to help predict reading comprehension outcomes since the relationship between these two skills is strongly related. Although this may be true for most children, it appears that variables such as vocabulary knowledge and background experiences may hinder this relationship for children of poorer backgrounds (Moskovitch, 2004; Paleologos & Brabham, in press).

If schools desire a more accurate predictor of reading comprehension achievement on standardized tests, particularly for low-income children, then the DRP may serve this purpose. The results of this study are consistent with other studies showing a strong relationship between the DRP and standardized tests of reading comprehension (Margolis, 2001; Baldwin, Porter-Smith, & Landers, 2003). Moreover, the results of this study suggest that this relationship remains strong regardless of a student’s family income. Chilla, Waff, and Cook (2007) report the successful use of the DRP for monitoring the reading progress of diverse students in the

Washington D.C. school system. In 1998, The Connecticut State Department of Education investigated the testing practices of its schools and found that seven of the 10 most improved school districts in the 1996-1997 school year utilized the DRP to measure the ongoing reading comprehension achievement of students (Baron, 1999). In addition to monitoring comprehension progress, the effectiveness of the DRP is in the fact that it helps teachers determine the appropriate text difficulty for the material students read, as well as, “characterizes student reading ability in terms of performance on a set of criterion-referenced tests” (Dreyfus, 2003, p.1).

It is important for teachers and administrators to understand the utility and limitations associated with any early literacy assessment. The testing and progress monitoring of student achievement must reach beyond administrative reporting purposes. Rather, teachers need to fully understand the skills they are measuring and how to utilize assessment data to make informed decisions relating to student grouping, academic materials, and instruction. Further research is needed to determine how “effective schools” use the information gained from the DRP to guide future reading instructional strategies.

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Table 1
Means and Standard Deviations for Student SAT-10 and DRP Scores

	SAT-10		DRP	
	Mean	SD	Mean	SD
All Participants	29.72	11.08	23.60	9.30
High-Income	35.61	9.94	28.67	10.26
Low-Income	26.27	10.77	21.05	8.47

Authors' Biographies

Dr. Timon Paleologos enjoyed seven years as the Reading Coordinator and Job Coach in a low-income rural school in Alabama. During this time, he taught five years as the At-Risk Reading/Math/Language Teacher and two years as the Gifted Education Teacher. He earned his Ph.D. in Reading Education from Auburn University in 2005 and since then, has taught undergraduate and graduate courses for Troy University as well as served as the Traditional Elementary Master's Program Coordinator.

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Dr. Edna Brabham started teaching as a paraprofessional while finishing a Bachelor's in Child Psychology. She worked as teaching/research assistant at Minnesota's Institute of Child Development and completed a Master's and Doctorate in Reading and Early Childhood at Florida State University. She taught all subjects and served as Reading Specialist for K-12 students then taught undergraduate and graduate classes at Auburn University for 17 years. She is now Professor Emerita with Auburn University.

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