

Association of Literacy Educators and Researchers Yearbook, Volume 41

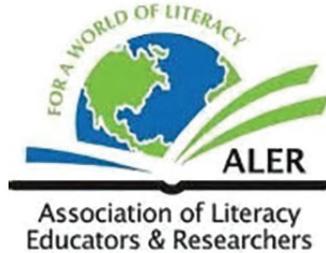
Educating for A Just Society



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EDUCATING FOR A JUST SOCIETY



The Forty-first Yearbook: A Double Blind Peer-Reviewed Publication of the Association of Literacy Educators and Researchers

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The editorial team of Alexandra Babino, Nedra Cossa, Juan Araujo, and Robin Johnson are in its third year of heading the publication of the Yearbook. It continues to be a humbling experience to read and curate the multidimensional work of the Association of Literacy Educators and Researcher friends and family. This year was especially sobering, as we reckon and reflect on how we might further leverage literacies and languages for social justice in and beyond the classroom.

First, we wish to thank all the authors whose research and practice add perspective and nuance to what counts as literacy for whom; they also illustrate how we can more fully realize our power as literacy educators. As you read, you will see how we center our students and their experiences, “the new mainstream,” (Enright, 2011), as we explore the strategies that may foster dynamic and critical literacies in K-12 classrooms and teacher preparation programs.

We also want to thank the keynote speakers and award winners for submitting their work for publication. We’re especially thankful to our editorial board members, who generously shared their expertise. We believe our joint collaboration added to the quality and impact of each piece in the Yearbook’s publication. Additionally, we are grateful to the members of the Board of Directors, who continually support the editorial team and the publication of the Yearbook, as well as Dr. Sheri Vasinda, the Publication Committee Chairperson.

Next, we’re delighted to share the inaugural Elizabeth G. Sturtevant Exemplary Article Award established to honor the legacy of Betty Sturtevant—a committed ALER member, an insightful scholar, a devoted mentor, and a kind friend. The Award recognizes an article that is accepted for publication in the *ALER Yearbook* that is exemplary in rigor and relevance. We thank the Sturtevant family for their support of her ongoing legacy as we honor its first award winners, Sarah Vander Zanden, Beth Buchholz, Nicholas E. Husbye, Julie Rust, and Christy Wessel Powell for their article “Failure *is* an Option: Making Room for Mistakes in Literacy Teacher Education”.

Finally, we are thankful for the support of our respective universities. At Texas A&M University-Commerce, we appreciate the support of Interim Dean Madeline Justice of the College of Education and Human Services, Dr. Jennifer Dyer, Department Head, and Dr. Laura Isbell, Assistant Department Head of Curriculum and Instruction, for providing support for this publication. We'd also like to acknowledge the contributions of Dr. Kathryn Dixon for her editorial assistance in this volume of the yearbook. At Texas A&M University-Corpus Christi, we appreciate the support of Dean Dr. David Scott of the College of Education and Human Development and Department Chair of Curriculum, Instruction, and Learning Sciences, Dr. Kathleen Lynch-Davis. We thank at Georgia Southern University Dean Dr. Amy Heaston of the College of Education and Department Chair of Elementary and Special Education Dr. Yasar Bodu.

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From the authors to the reviewers, university and personal support, this publication underscores each person's contribution towards understanding and enacting literacy for social justice.

—Alexandra Babino, Nedra Cossa, Juan J. Araujo, & Robin D. Johnson

INTRODUCTION

The theme for the 62nd annual conference of the Association of Literacy Educators and Researchers was Educating for a Just Society. Connie Briggs, previous Program Chair, reminded us that, “Education has always been the foundation of a democratic nation. It is important that our students understand the principles upon which our nation was founded and develop personal qualities that value and celebrate diversity and equality leading to critical and independent thinking. Individual and collective potential will only be realized when community concern, social responsibility, and moral commitment of social justice is actioned by and for all of society, particularly the marginalized of our nation.”

The indelible work we do as literacy professionals is reflected in this message and in the thinking that was shared as we gathered together in Louisville, Kentucky in 2018. From graduate students to senior scholars, the presentations and personal conversations all served as sites of opportunity to reflect on and enact this ambitious value. It’s continued to challenge us as editors through the process of conscientization (Friere, 1970), or continual reflexivity, in our multiple roles as editors, educators, researchers, advisors, administrators, and friends. In each context, we wondered how can we celebrate others that aren’t normally celebrated. Even more importantly, we’ve wrestled with how our teaching and research practices and policies might approximate greater justice for all of those we work with spanning the minoritized and majoritized spectrum (Sensoy & DiAngelo, 2017).

Throughout the conference and since this time, a quote from renown bilingual writer and artist, Sandra Cisneros, has pierced my (Ale’s) heart, ultimately taking up residence to stay. In doing so, it’s both motivated and haunted me in response to the question, “Why consider and teach literacy from a social justice lens?” It’s “because the world we live in is a house on fire and the people we love are burning” (Cisneros, 2018). While Cisneros shares this sentiment in relation to why she writes, this quote adjusts my theoretical lenses to clarify that literacy research is primarily about people, not acts or skills in and of themselves; it’s

about developing skills in people that allow them greater agency and human flourishing. We view our students as people we love first and then we value them as speakers, readers, writers, visual communicators, and change makers. To varying degrees, they utilize their literacies across time and space, but they are in danger. Often this danger occurs in the illegitimacy of their literacies; even more, this danger comes in the form of systemic, institutional, interpersonal, and internalized marginalization; but it's always about being in danger of a reified humanity: for the teacher and the student; for the historically minoritized and the historically majoritized. Thus, it's incumbent upon us, as literacy educators and researchers, to urgently see, feel, and respond to those who are in danger. In other words, we must teach and research with armed love (Freire, 1998).

Dr. Briggs' hope and Sandra Cisneros's quote substantially inform the editorial team's organization of this year's yearbook. The first section of the Yearbook begins with Dr. Tami Craft Al-Hazza's Presidential Address, titled "Uncomfortable Conversations: Offering Arab Culture: Arab Literature a Place in the American Classroom Conversation". She reminds us of how a pedagogy of discomfort (Boler, 1999) can lead to brave spaces (Arao & Clemens, 2013) for growth in understanding and respect in U.S. classrooms. She cautions us against essentializing and othering our students and urges us towards more critical conversations. Next, through their multiple cases studies, Drs. Sarah Vander Zanden, Beth Buchholz, Nicholas E. Husbye, Julie Rust, and Christy Wessel Powell describe the programmatic possibilities of productive failure in teacher preparation programs through their article "Failure *is* an Option: Making Room for Mistakes in Literacy Teacher Education" that won the inaugural Elizabeth G. Sturtevant Exemplary Article. Then, in "Exploring the Power of Languages and Literacies of Indigenous Hispanic ELs: A Case Study of Three Ixil Students", Dr. Luis Javier Pentón Herrera highlights the divergent language and literacy learning realities of students who are often positioned as deficient in U. S. classrooms in his winning dissertation. Finally, Kara Ness' "Sight Word Acquisition with Students with Speech and Language Impairments Using Integrated Picture Mnemonics" highlights yet another set of students who are essentialized and othered as part of new mainstream: students with dis/abilities through her master's thesis. Each of these pieces describe and center in multifaceted detail students' multiple literacies and how education can work towards creating more justice for them and others like them.

In section two, the authors include service award recipients who've been recognized for their continued armed love in literacy teaching and research. Drs. Peggy Lisenbee and Robin Johnson describe their respective work with marginalized communities that won them the 2016 and 2018 Judy Richardson Literacy

as a Living Legacy Award. Afterwards, Dr. Vicky Zygouris-Coe shares a heartfelt thank-you to her professional and personal communities that have supported her over a lifetime of service to the profession that has earned her the 2018 Albert J. Mazurkiewicz ALER Special Services Award.

Section three showcases the many literacies of the new mainstream, while section four describes how teacher educators strive toward preparing pre- and in-service teachers to meet the needs of the new mainstream. Section five then details specific reading, writing, and content strategies teachers might implement to foster greater dexterity in students' literacies.

All of the articles within this Yearbook represent a portion of the sessions presented at the conference. After a peer-review process for conference acceptance, the ensuing articles underwent an additional two rounds of double-blind peer review before acceptance in the Yearbook. It is our sincere hope that the articles reflect the theme and embolden our practice as literacy educators and researchers.

—AB, NC, JA, & RJ

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PRESIDENTIAL ADDRESS

UNCOMFORTABLE CONVERSATIONS: OFFERING ARAB CULTURE & ARAB LITERATURE A PLACE IN THE AMERICAN CLASSROOM CONVERSATION

Tami Craft Al-Hazza
Old Dominion University

*All of Dr. Al Hazza's professional interest rise from a unique collision of being the child of Western European parents in middle America and later formative experiences traveling and working across the globe. Dr. Tami Craft Al-Hazza, Associate Professor of Language, Literacy & Culture, specializes in the examination of the interplay between the early literary experiences of youngsters and their acquisition of literacy skills and inclinations which leads to broad reading interests. Given her interests in the impact of early literacy experiences of young people, Dr. Al-Hazza's research interests focus on the impact of representative works of world literature from many cultures, but she explores the particular features of Middle East literature as it occurs in this country. Her research endeavors are documented in such journals as *The Reading Teacher*, *Childhood Education*, *Middle School Journal*, *Preventing School Failure*, *Multicultural Perspectives*, and others.*



Dr. Al-Hazza has also received numerous teaching awards, including the Outstanding Teaching Award from Kuwait University and Most Inspirational Faculty Member Award from Old Dominion University. In addition, she has received the Provost Award twice for her work in professional organizations. She has delivered keynote addresses, such as the national conference at Georgetown University Center for Contemporary Arab Studies, Discovering the Middle East through Literature and Poetry at the University of Illinois, and the Kuwait Student Union Annual Conference. Finally, she has been a co-recipient of the Virginia Hamilton Award, which recognizes an article which makes a significant contribution to the professional literature concerning multicultural literary experiences for youth.

Abstract

My Presidential Address focuses on the oeuvre of my work in academia. Throughout history, Middle Easterners have made significant contributions in all areas of science, mathematics, and literature (Al-Khalili, 2011). However, unfortunately, in recent years, the Middle East has seen an unprecedented amount of violence, human suffering and unrest and that tumult has the potential to impact American young peoples' perceptions of this region and its citizens in negative ways. Through judicious choices, teachers of young people can find balance in the portraits of people of the Middle East (particularly those who are central to world affairs) by choosing literature from broader contexts of the globe. I make a plea for educators to be mindful of the potential for essentializing and othering of individuals from the Arab culture, to gain background knowledge about the Arab culture and to offer Arab culture and Arab literature a place in the classroom curriculum and in the classroom conversation.

Keywords: Middle East, Arab Literature, Culturally Responsive Teaching

Introduction

I thank you for the opportunity to serve as the President of the Association for Literacy Educators and Researchers. My research into Arab literature is the product of an intercultural marriage, of a background in sociological studies, of teaching in the Middle East, of living in a foreign country and forming hetero- and homo-cultural friendships, and of observing my bicultural child navigate the landscape of prejudice and cultural misunderstandings in the American school system.

The Middle East is often referred to as the cradle of civilization. During the Dark Ages in Europe, scholars in the Middle East kept the torch of knowledge alive by translating and supplementing ancient Greek, Persian, and Indian scientific learning. Throughout history, Middle Easterners have made

significant contributions in all areas of science, mathematics, and literature (Al-Khalili, 2011).

However, unfortunately, in recent years, the Middle East has seen an unprecedented amount of violence, human suffering, and unrest resulting in a tumult that has the potential to impact American young peoples' perceptions of this region and its citizens in negative ways. No other time in recent history has seen such a large portion of the globe caught up in religious and ethnic tensions, armed conflict, loathsome forms of terrorism, and the resultant fleeing of civilian populations such as those occurring at this moment in the Middle East. When nightly news broadcasts focus on the violent rampages of terrorists and the extreme behaviors of a select few from the Middle East, all people, including youngsters, have the potential to develop a flawed perspective of an entire region of the world. Human beings likely come to see themselves and their fellow human beings through the encounters they have with reflections of their world in daily speech, media images, and the literary narratives they hear from early experiences on.

Young people are impacted by these daily experiences that are not mitigated by literary selections which bring alternative perspectives on these regions and their peoples. Through judicious choices, teachers of young people can find balance in the portraits of people of the Middle East (particularly those who are central to world affairs) by choosing literature from broader contexts of the globe. Novels that portray Middle Eastern people with accurate and diverse narratives about this region's citizens offer a counterbalance to categorical cultural condemnations often occurring in America today.

Scholarship on prejudice indicates that predominately negative exposures to images of, in this case Middle East cultures, have the potential to leave young people with only the most primitive of views of an entire people. Given the tensions of contemporary world affairs, educators have a responsibility to shape and mold young people into future global citizens who embrace the diversity of all cultures.

I have narrowed the focus of this address specifically to the Arab culture, not because I want to be exclusive or because the other peoples who inhabit the Middle East are not important, they are, but because I do not have insider knowledge or expertise of the culture of Turkish, Iranian, and Armenian peoples and the many other peoples who reside in the Middle East.

My intention in this Presidential Address is to offer you a theoretical perspective in which to view Arab literature and culture as well as background knowledge about Arab people of the Middle East so that you can begin to consider the place of Arab culture and Arab literature in your classroom conversations.

Viewing the Arab Culture and Literature Through Theoretical Perspectives

Essentialism and Othering

The human inclination to separate people of the world into those like ourselves and those who are “other” has long been noted (Omi & Winant, 1994). Othering is simply the means which some people of all societies use to solidify their group identity; however, in this discussion, I will trace the scholarship which points to the mechanisms by which it is possible to define a particular group as inferior or at a minimum unworthy of full world status within a specific cultural and geographic context. In this case, this includes Westerners’ view of Arab people. This discussion will focus on the formation of attitudes which are likely remnants of centuries’ old religious wars and colonial world past now subject to revision in light of contemporary conflict within the Middle East. An anchoring point in this discussion requires the perspective of Edward Said, a Palestinian American intellectual and academic, who argued in his influential book, *Orientalism* (1978), that Western societies (the Occidental world) have never escaped the grip of colonialism in the shaping of their views of superiority over Eastern cultures (the Oriental world). Said defines Orientalism as the patronizing perceptions of Middle Eastern, Asian, and North African societies held by the West, which are comprised of “anti-Arab and anti-Islamic prejudice” (p. 20). Said concluded that the West has mapped upon the people of an entire region through the neo-Orientalism “designations of fundamentalism, terrorism and cultural stagnation” (p. 536).

This impulse to ascribe a reductionist set of characteristics is a form of what is known as essentialism, which Omi and Winant (1994) define as a “formulation which sees race as something objective and fixed, a biological datum” (p. 55). Essentialism flattens and homogenizes the varied qualities of a large group of people, and for Arabs, this often involves conflating Arab with Muslim and subsequent suggestions of “radical Islam” placed on the people of this region by media outlets. These practices often use skin color and regional boundaries to ascribe cultural qualities which justify the social inequalities that span substantial portions of the world. Essentialism is often tied to stereotyping and the shaping of prejudice which individuals use to justify the inequalities and on-going levels of suspicion (Bastian & Haslam, 2006). One measure that educators can use to prevent young people from developing essentializing and othering views towards people who are different from mainstream society is to engage in teaching that is culturally responsive.

Culturally Responsive Teaching

Teaching for a socially just society requires teaching about all cultures and engaging in the uncomfortable conversations. Culturally responsive teaching is a theoretical perspective that promotes instruction inclusive of multicultural literature representative of a large segment of the world's population into our classrooms (Hollins & Oliver, 1999; Ladson-Billings, 1995). Among the scholars of culturally responsive teaching, Gay (2002) articulates a call for teaching which acknowledges all cultures. In particular, she has identified five essential elements that are crucial for engaging in culturally responsive teaching: 1) cultivating a knowledge base about cultural diversity; 2) creating culturally relevant curricula; 3) building learning communities; 4) engaging in cross-cultural communications, and; 5) developing cultural congruity in classroom instruction. While Gay identifies these five elements, this discussion will address only the first two threads by focusing on the incorporation of ethnic and culturally diverse content in the curriculum. The initial stages of achieving culturally responsive teaching include teachers developing an awareness of "...ethnic groups' cultural values, traditions, communication, learning styles, contributions, and relational patterns" (Gay, 2002, p. 107). In addition, teachers must gain an understanding of factual information about specific ethnic groups to "...make schooling more interesting and stimulating for, representative of, and responsive to ethnically diverse students" (p. 107). Addressing Gay's last point requires teacher educators and classroom teachers to gain at least a basic understanding of the Arab world.

Middle Easterners, Arabs, and Muslims

To begin to lay the foundation for understanding matters in the Middle East, individuals must struggle with the particularly thorny issue of the raw complexity of the weave that constitutes the political, ethnographic, and religious fabric of the region. Even among well-read, knowledgeable adults, understanding the dynamics of this world region is daunting. The 385.3 million Arabs living in the world today reside in more than twenty countries of the Middle East and North Africa (World Bank Group, 2016). The vast expanse of the Arab world reaches from Morocco situated on the western edge of the African continent to Yemen positioned on the eastern bottom tip of the Arabian Peninsula. Arabs are united by a single language, Arabic (although each country has specific dialectical versions of the language), have Semitic roots, and practice a variety of religions with Islam claiming the largest following.

Arab life and literature are undoubtedly shaped by the predominant faith of the Middle East. A high percentage of Middle Easterners identify themselves

as Muslims (Pew, 2011); although, it should be noted that there are significant populations of Arabs who are adherents of other religions. Considerable danger lies in drawing generalizations about the exact impact of a belief system upon its adherents, and it must be recognized that members of a religious community are unique and that religious life varies considerably though cultural variations and geo/political circumstances in the exercise of personal lifestyles and the choices individuals make.

Throughout history, Arabs seeking better opportunities have immigrated to various countries taking their rich language, culture, and customs with them. The first significant wave of Arabs that immigrated to the United States began in the late 1800s and most of these early immigrants were Christian Lebanese who immigrated to seek their fortune often working as peddlers and later owners of dry goods shops. Other waves of immigrants followed, mostly Christian Arab immigrants who came from Syria and Egypt. Today considerable diversity exists within the Arab American community with individuals immigrating from more than twenty Arab countries. The Arab American Institute (2018) estimates that there are nearly 3.7 million Americans who have Arab ancestry.

Arab Literature in American Classrooms

With a significant population of Arab Americans living in the United States, it is vital that their culture and literature is represented in American classrooms. Most material read by American students in classrooms does not include literature about the Arab culture or the Arab people (David & Ayouby, 2005). The limited selection of Arab children's and young adult literature in classrooms in this country is not paying homage to American students of Arab ancestry and is contributing to a lack of understanding of these cultures. In talking with future educators over the past ten years, only one individual indicated that during her teacher preparation courses she had even been exposed to fiction which focused on the Arab culture. Not only had these educators been denied a view of this literature, they overwhelmingly talked about having seen only negative images of Arabs, Muslims, and Middle Easterners in general.

These future teachers had not been exposed to any narratives which offer authentic representations of the Arab culture including the daily lived experiences, hopes, dreams, and aspirations of this group of people. Even worse, many individuals had created negative and often frightening images of Arabs from the wash of negative media images in the repetition of a singular reductive narrative. Therefore, how could these teachers and future teachers be expected to introduce their students to Arab children's and young adult literature when they had no

personal exposure to this literature and had only negative exposures to the cultures of the Middle East. As Howard (2006) succinctly stated, “We can’t teach what we don’t know.” This speaks directly to many educators’ lack of knowledge of the Arab culture and Arab literature.

Engaging in culturally responsive teaching also calls for selecting literature that portrays Arab life which allows the reader to understand both the richness of a culture and the potential range of conflicts which give contemporary life its layers within that culture and give individuals choices as well as the rewards and challenges of pursuing the fruits of those choices. Offering young readers different perspectives, glimpses, and insights into the Arab culture holds the potential to avoid “othering” and “essentializing” of a large segment of the world’s population.

Representational Works of Arab Literature

While it is easy to admonish classroom teachers and teacher educators for not including representational works of Arab literature into the classroom, without recommended reading lists and specific guidelines for selecting this literature, the educator must depend upon publishers to publish high-quality authentic content. The Arab Center at Georgetown University, the Arab American Institute, and the American Arab Anti-Discrimination Committee are organizations that offer lists of quality Arab literature for youngsters. In addition, the *Reading Teacher*, *Multicultural Perspectives*, and *Middle School Journal*, as well as other educational journals, have published articles that provide specific guidelines for selecting high-quality Arab literature. I have included a list of some suggested readings for students in the appendix and well as the contact information for various organizations that offer Arab resources.

It should be noted that when lending an interpretation to the children’s and young adult novels in the resource section, these novels represent only a slice of rich diversity and “ways of being and doing” that exists within the Arab world. The conversations and situations that occur in these novels contribute to helping the reader understand that young people in the Arab world seek to fulfill their dreams and aspirations for a better life just like young people in all societies.

Conclusion

This address was intended to shed light on the struggles of Arabs to be fully recognized and valued in the American curriculum. I have made a plea for educators to be mindful of the potential for essentializing and othering of individuals from

the Arab culture, to gain background knowledge about the Arab culture, and to offer Arab culture and Arab literature a place in the classroom curriculum and in the classroom conversation. These uncomfortable conversations must begin with teacher educators.

Thank you.

Resources

This section offers novels written by Arabs, or individuals who have insider knowledge about Arab culture, to use in the classroom and educator resources that will help provide young adults a foundational understanding of the Arab culture.

Children's Literature

- Abdel Aal, G. (2010). *I just want to get married!* Austin, TX: University of Texas Center for Middle East Studies.
- Al-Windawi, T. (2004). *Thura's diary*. London: Penguin Group.
- Amir. (2011). *Zabra's paradise*. New York: First Second.
- Barakat, I. (2007). *Tasting the sky: A Palestinian childhood*. Canada: Douglas & McIntyre Ltd.
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- Bayoum, M. (2009). *How does it feel to be a problem? Being young and Arab in America*. New York: Penguin Books.
- Lesser, R. (2012). *A hand full of stars*. Northampton, MA: Interlink Books.
- Marston, E. (2008). *Santa Claus in Baghdad- and other stories about teens in the Arab world*. Bloomington, IN: Indiana University Press.
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- Sharafeddine, F. (2013). *The servant*. Toronto, Ontario: Greenwood Books.
- Tolan, S. (2015). *Children of the stone: The power of music in a hard land*. New York: Bloomsbury.

Suggested Resources for Educators

- Middle East Outreach Council (MEOC). www.meoc.us
- Nydell, M. (2012). *Understanding Arabs: A contemporary guide to Arab society* (5th Ed.). Boston: Intercultural Press.
- Al-Hazza, T.C. & Bucher, K.T. (2008). Building Arab Americans' cultural identity and acceptance with children's literature. *Reading Teacher*, 62(3), 210-219.
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- David, G. C., & Ayouby, K. K. (2005). Studying the exotic other in the classroom: The portrayal of Arab Americans in educational source materials. *Multicultural Perspectives*, 7(4), 13–20. Retrieved from http://dx.doi.org/10.1207/s15327892mcp0704_3
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- Howard, G. R. (2006). *We can't teach what we don't know: White teachers, multiracial schools*. New York: Teachers College Press.
- Ladson-Billings, G. (1995). But that's just good teaching! The case of culturally relevant pedagogy. *Theory Into Practice*, 34(3), 159–165.
- Omi, M., & Winant, H. (1994). *Racial formation in the United States: From the 1960s to the 1990s*. New York: Routledge.
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- Said, E. (1978). *Orientalism*. New York: Pantheon Books.
- Said, Edward W. (1999). *Out of Place*. New York: Random House.
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RESEARCH AWARDS

ELIZABETH G. STURTEVANT EXEMPLARY ARTICLE AWARD

FAILURE *IS* AN OPTION: MAKING ROOM FOR MISTAKES IN LITERACY TEACHER EDUCATION

Sarah Vander Zanden

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The Elizabeth G. Sturtevant Exemplary Article Award was established to honor the legacy of Betty Sturtevant—a committed ALER member, an insightful scholar, a devoted mentor, and a kind friend. The Award recognizes an article that is accepted for publication in the ALER Yearbook that is exemplary in rigor and relevance. The authors of this article are the inaugural winners of this award.

Abstract

Five literacy teacher educators discuss how their conceptual understanding of productive failure (Kapur, 2016) influences their work with teacher candidates. Examples drawn from three settings related to lesson planning, enactment of teaching, and reflection are described in connection to productive failure. Tensions around relationships and transfer of practice to settings outside of the campus-based teacher education setting are illustrated to provide insight into current dilemmas of practice.

Keywords: Productive failure, literacy teacher education, teacher candidates, practice

Introduction

Discussions around academic success and failure are littered with metaphors like helicopter, lawnmower, bulldozer support, and snowplow (Lum, 2006; Sharma & Sarna, 2018). These labels highlight the ways adults alter or linger near the path of students to ensure ultimate success in their endeavors. Recent scholarship calls the efficacy of these protective measures into question, suggesting that preventing failure might inhibit the ability of children to construct meaning, stunting the development of resilience and stick-to-it-iveness in the face of challenge (e.g. Duckworth, 2016; Mogel, 2011). As literacy and teacher education advocates, we see smoothing of the road ahead of learners as a reduction in expectations and reification of deficit-oriented teaching practices that maintain unjust educational opportunities. In this manuscript, we foreground risk and difficulty as generative challenges for teacher educators designing learning experiences for future teachers by asking, what opportunities can productive failure offer literacy teacher education?

The positive impact of educational challenge makes intuitive sense. Teachers are well aware of classroom management difficulties that stem from instruction failing to provide adequate challenge, leading to student boredom, limited learning opportunities, and stagnated progress (Blackburn, 2018; Parsons, Malloy, Parsons, & Burrowbridge, 2015; Pearson, 2007). Consider guided reading as an example: if a teacher limited their students to completely comprehensible or decodable texts, there would be few opportunities to construct meaning or engage in fix up strategies when encountering complex text or new words. Conversely, if a student is provided only grade-level text with many unknown words and structures, but limited instructional support, progress would also be minimal. Literacy educators understand that in order to develop proficiency and critical reader-thinkers that complex texts as well as responsive support are needed (Clay, 2014; Keene & Zimmermann, 1997).

Likewise, literacy teacher educators are faced with similar challenges fostering independence and scaffolding successful pedagogical decision making with teacher candidates (TCs). The examples discussed below illustrate the potential for *productive failure* (Kapur, 2016) in literacy teacher education (LTE) settings, where the potential that a failed attempt or engagement might provide an alternate answer to a different question or avenue for exploration with learners.

We assert that productive failure can provide a foundation of complexity for problem solving processes involved in LTE. By offering learning environments such as those highlighted below, LTEs can embolden pre-service educators to build similarly challenging engagements with their future students. We begin by exploring the role of failure in learning, specifically productive failure (PF). We then turn attention to productive failure examples of three common activities in LTE contexts: lesson planning, enacting teaching, and reflection. Finally, we consider potential future investigations into the role of failure in learning within literacy teacher education. In this vision of LTE contexts which foreground productive failure, we suggest relational failure and failure to transfer are areas to further explore.

Theoretical Framework and Related Literature

The role of failure in learning with its accompanying stances are discussed in the following sections. If we believe failure, as John Dewey (1933/2008) suggests, “is not *mere* failure. It is instructive” (p. 206; emphasis in original), there must be models for creating opportunities for students to fail and, as a result of that failure, learn. This is a substantial challenge to teachers and teacher educators, because failure is deeply rooted in education as something to be avoided (Atkinson, 1957; Elliot & Church, 1997). Failure needs to be uncoupled from punishment (McEvoy & Welker, 2000; McMahan, 2000; Maguin & Loeber, 1996) through the implementation of systematic opportunities for students to reclaim the instructive potential of failure. This is a particularly difficult task as there are few approaches to learning outside of design thinking (see Anderson & Shattuck, 2012), particularly those grounded in research, that foreground failure as valuable and viable sources of learning. There is dissonance between a purported belief in failure as learning opportunity and the enactment of such a belief structure in life.

As teacher educators, we have adapted Kapur’s conception of *productive failure* as a model to frame our thinking about educator preparation. We conceptualize failure as activity in which “students will typically not be able to generate or discover the correct solution(s) by themselves” (Kapur, 2016, p. 289),

deviating slightly from the notion of a *correct solution* to an *appropriate solution*. The role of prior knowledge comes heavily into play when thinking about PF; one of the challenges of teacher education has been disrupting patterns of experienced teaching, or teaching as one has been taught (Lortie, 1975). Literacy is a complex process and preparing novice teachers to engage in quality literacy instruction cannot depend upon content knowledge alone to enact such instruction as knowledge does not guarantee that one can teach. Rather, there needs to be an approach wherein TCs muck around, whether it be in lesson planning, the enactment of teaching, or reflecting upon teaching, and are expected to experience failure and leverage that experience for learning (Husbye, Rust, Wessel Powell, Vander Zanden, & Buchholz, 2019).

Failure does have a place within literacy teacher education, particularly within practice-based teacher education, though it is necessary to articulate the boundaries of the failures we anticipate students will encounter within the learning. As Grossman and MacDonald (2008) advocate, all teaching frameworks should have a relational component. Relational failure, a challenge embedded in PF that we identified, is teased out in our final section because of the human experience embedded in the presupposed relationship between teacher and student in educational situations (Dewey, 1923; Frelin, 2013). Further, transfer of learning continues to be studied in adult learning (Mezirow, 2000) and educator preparation contexts (Yang, 2012; Juarez & Purper, 2018). However, as Bransford and Schwartz (1999) suggest, the aim of transfer is not replication, rather preparation for future learning and relatedly new contexts. Our exploration of PF may offer new insights given educator preparation's constraints in particular linked to learning contexts and expectations for learning. Using a multiple-case study approach (Yin, 2013) with a practitioner inquiry lens (Cochran-Smith & Lytle, 2009), we examine common pedagogical routines from our literacy education courses to both frame the types of failures within those routines, and how we, as instructors, reframe those failures as kindling for learning about teaching.

Methodology

We are actively involved in LTE at different institutions. Our long-term collaboration has often centered on discussion about LTE and we frequently share our experiences in methods and content area courses to strengthen our practice and research (Husbye, Rust, Buchholz, Wessel Powell, & Vander Zanden, 2019). Here we offer examples from three cases using productive failure. Case study (Stake, 2005) is a match for our work because we serve diverse institutional

contexts, yet navigate similar complex phenomena. We seek insight, not generalization, across the local particulars (Dyson & Genishi, 2005; Erickson, 1986) to better understand the “factors that shape and the processes through which people, (in our cases LTE) interpret or make [their contexts] meaningful” (p. 3). Because we are showcasing examples from three distinct contexts within a larger case of LTE, we highlight variation within our “propositional generalizations” (i.e., context-specific assertions) (Stake, 1995). We explicitly frame these contexts categorically as private exchange (Beth), public enactment (Nicholas) and personal reflective practice (Sarah).

Importantly, the goal for our case study is not to make universal, generalizable claims *for* readers, but to offer opportunities for other LTEs, deeply situated within their own contexts and particulars, to engage in the process of making “naturalistic generalizations” (Stake & Trumball, 1982) from the particulars of our case. After presenting data and assertions from each context, the Discussion section situates case-specific findings within the literature and invites LTEs into conversation about how learning from this case might “be extended, modified, or complicated” (Dyson & Genishi, 2005, p. 116) across other contexts/cases, ultimately compelling alternate imaginings about the role of failure in teacher preparation. Focal data included audio excerpts of instructor feedback and students’ artifacts (Beth), observation notes and transcripts of an enactment (Nicholas), and reflections, memos and observation notes (Sarah).

Findings

Our findings traverse three distinct LTE settings in which TCs encountered moments of productive failure across three key phases of teaching: from lesson planning to enactment to reflection. First, we discuss Beth’s lesson planning script process and describe productive aspects of self-identified failures. Next, we explore the generativity of TCs encountering moments of failure while working with youth in Nicholas’s literacy clinic in a teaching enactment. Finally, an example drawn from a study of Sarah’s teaching explores challenges with developing critical reflective practices beyond the scope of teacher candidacy spaces.

Beth: Planning for Teaching

There are many quiet, but influential failures that often surface when TCs are asked to plan for instruction. Lesson planning is more than a checklist of activities, it is a rigorous mental activity in which TCs are asked to imagine possibilities within a series of teaching/learning moments. Critically, the kind of

feedback offered by LTE's in response to TCs initial, imperfect lesson plan drafts offers opportunities to (re)frame "failure" as a generative space for reimagining instructional interactions rather than positioning "failure" as a static, summative endpoint. In the vignette below, we describe how Beth invites her TCs to engage in planning for teaching, and then provides dialogical audio feedback to help foreground moments of missed opportunities.

Krista, a TC enrolled in Beth's course, developed and submitted a 3-day lesson plan focused on teaching first graders how to write personal narratives based on a recent field trip to a Christmas tree farm. Rather than traditional lesson plans (i.e. a blueprint for action), Beth's students engaged in the pedagogical routine of Lesson Play (Zazkis, Liljedahl, & Sinclair, 2009), a more theatrical, script-like approach to planning, shifting the focus to an imagined record of *interaction* of "what might or could happen" (Davis & Simmt, 2006, p. 147). In her lesson, Krista planned to engage in shared and modeled writing with children before sending them off to work independently. Krista developed an imagined dialogue where she and children brainstormed ideas for the first sentence. Then she took the lead and modeled/thought aloud about how to combine these ideas and create a sentence:

TC: *"I'm thinking that the first page should say, 'On Monday we went on a field trip to see Christmas trees' [teacher writes so children can see]. Everybody can write this sentence on the first page of their books now and draw a picture above it that goes with the words we wrote."*

When Beth read over Krista's lesson plans, she noted Krista's attention to orally composing the sentence, but was struck by missed opportunities to *teach* a constellation of writing practices and skills as part of a dialogic interaction. At this stage in the lesson plan development process, Beth recorded audio feedback for each student (10 to 20 minutes in length) as a kind of "conversation" with TCs plans that could help them revise or expand their thinking regarding particular parts of their lessons. This audio feedback was provided after a previous face-to-face meeting Beth held with each TC in the lesson development process. TCs were permitted to revise their plans until submitting at the end of the semester for a final grade.

In a central part of her feedback for Krista, Beth spent over five minutes offering instructional possibilities in relation to the following sentence in Krista's lesson play script: *"I'm thinking that the first page should say, 'On Monday we went on a field trip to see Christmas trees.' [teacher writes so children can see]."*

Beth's Audio Feedback: *"I do think that your script/lesson could use more development [here]. To me, this is the real heart of your lesson... The goal is that you're giving kids strategies that they can use when they go off to write by themselves. If you just compose a sentence out loud and then you write it without any trouble, without talking through anything, many kids aren't really learning much; they're watching you do it and they know that they came up with those words, but they're not learning the ins and outs of how to turn oral language into written language, which is what first graders are really trying to learn to do."*

Beth goes on in the audio feedback to model and think through how *she* imagines these student-teacher interactions might develop, weaving together instruction on concept of word, mechanics (capitalization, ending punctuation), and strategies for spelling (word walls, sight words, stretching out a word).

Beth's Audio Feedback: *"And so that first word [in the sentence] is 'On,' so that's probably a word that's on the word wall, or maybe that's a sight word that kids just know... So you're going to walk through each word in the sentence and you're going to help kids decide, is this a word that's on the word wall? Is this a word I should just know how to spell? You're going to model how what to do for the words that aren't in the room. Like how [can writers] stretch out a word to hear the different sounds?... So that's what I'm missing in your current script/lesson, that's the writing instruction. That's where you're teaching kids the skills and practices and strategies that they need to go be successful independently."*

This PF example illustrates embedded evidence of LTE investment in supporting TCs as they learn about writing instruction and how to be teachers of writing. We argue that failures in lesson planning might better be understood not as "doing it wrong," but rather a failure to anticipate and plan for children's needs, and the affordances/limitations of a chunk of instructional time. We believe a developmental understanding of TCs accounts for the fact that a TC will have less experience to draw upon for this important forward-looking imagination, and as a result *will* miss opportunities in an initial lesson plan. In providing multiple layers of feedback, from in-person conferences to multiple attempts at producing a script, Beth approaches lesson planning as an iterative process whereby the expectation is the TCs will "typically not be able to generate or discover the [appropriate] solution(s) by themselves" (Kapur, 2016, p. 289). Even if instruction in a literacy methods course has been strong, TCs leap from 'knowing'

to ‘planning/imagining’ to ‘doing’ presents a gulf that necessitates space(s) and time(s) for welcoming PFs, and, consequently, the development of resiliency.

A TC’s perceived failure to lesson plan perfection certainly triggers generative possibilities in this example, but the eye-opening nature of failure also takes on another distinct shape: the ability to imagine potential *student* failures in a lesson is key for effective lesson planning. Across several layers of feedback, Beth notes misunderstandings about how writing instruction might be tailored, in its enactment, to address the specific and diverse needs of children in a particular classroom. Her feedback focuses on highlighting how shared writing is a deceptively complex instructional routine, one that is contingent on in-the-moment dialogic interactions with students. More experiences enacting this literacy routine offer practicing teachers ways to *imagine* possible trajectories (including failures). In order to *imagine* failure you have to imagine enactment.

In the dance of providing feedback on multiple lesson plan drafts, there are many stubbed toes (e.g., hurt feelings, concerns about grades, complaints of unfairness), indicating that while the exchange is lively, there are still moments of feeling flat-footed and stiff. The pressure to offer that just right and right now level of support TCs require paired with the TCs vulnerability in revealing a limited imaginary scope in a writing classroom leaves much room to explore and build upon. Beth recognizes that her role as faculty impacts how the feedback is taken up. She also notes the dilemma of a well written lesson play vs. a well-conducted lesson, considering the possibility of framing lesson planning/play around imagined problems/issues that may emerge during enactment. This form of planning and scripting would invite TCs to develop multiple dialogic, contingent trajectories rather than settling on a single successful pathway.

Nicholas: Enactment of Teaching

While failure at the lesson planning stage can often be experienced by TCs as a subtle, private interchange between themselves and their professor, failure during the teaching enactment is often a much more public affair, one that impacts both the TC’s grade on an instructional plan, and a child’s learning. Even so, we argue that with support, teaching enactment failures can result in minimal consequences for youth and immense learning for TCs.

The excerpt below is drawn from the second week of Nicholas’ literacy clinic. During this time, the TCs worked in instructional teams and designed literacy lessons supporting their students’ literacy development. They simultaneously developed an awareness of their own teaching competencies, both through the observation tools utilized by the other members of the instructional team as well as a reflection on a video of teaching. Marcy, a TC enrolled in the course,

carefully listened to the students in her small group of second graders reading independently, engaged in what TCs had dubbed *the sprinkler*: listening in to an individual student's students reading for just a moment before moving on to listen to the next. It was during the sprinkler that Marcy heard a student fall silent, save for a single sound: /b/, /b/, /b/...

Marcy shifted her attention to Shondra, who was working through the word *beautiful*. "Shondra," Marcy said, "I noticed you're having trouble with this word - let's sound it out." Shondra's eyes flashed toward Marcy before telling her, "That's what I'm doing."

"Okay, let me help. I heard the first sound, /b/, so let's look at this next sound. What's the next sound?"

"/e/"

"And what's the next one?"

"/a/"

"And this one?" Marcy asks, pointing to the u.

"/u/"

"Let's blend these together. Maybe it will help us figure out the word."

"/b/ /e/ /a/ /u/... that don't sound like nothing."

Marcy paused, Shondra's declaration hanging in the air for ten seconds before she asked, "what was happening in the book before you came to this word?" Shondra launched into a quick retelling of the book: a pair of siblings wanting to make a birthday cake for their mother. They are arguing over how it should look. "Great," Marcy says. "This word here, the one causing problems, that's *beautiful*. Go back to the beginning of the sentence and read it like you know it." Marcy looked up into the video camera, raises her eyebrows, and returns her attention to the readers in front of her.

Upon viewing her teaching retrospectively, Marcy later stated in her reflection:

I had no other strategies to help her read except for sound it out. I knew the minute it came out of my mouth that it wasn't going to help but I couldn't think of anything else to do so I went with it. It didn't work so I checked her understanding and gave her the word. I want to be able to help readers read on their own, but I obviously don't have those skills yet. (Reflection, February 2018).

Marcy's failure in coaching her student is not particularly remarkable; rather, it is indicative of the larger investment on *sound it out* as a strategy while coaching young readers (Compton-Lilly, 2005) to read texts independently. What is remarkable was Marcy's ability to distance herself from the deeply-ingrained command to sound the word out, recognizing the limitations of that particular strategy in this instance. *Beautiful* relies on several complex grapheme-phoneme patterns Marcy would need to be aware of in order to make *sound it out* viable as a coaching option (Clark, 2004). Recognizing her own limitations in supporting Shondra as a reader, she took the path of least resistance, telling her word and allowing Shondra to continue with her reading after assessing comprehension of the story.

This instance of failure also proved to be motivational as Marcy sought ways to support her development of strategies for coaching students' independent reading. To revisit our framing of productive failures, Marcy sought appropriate solutions to what she had experienced in her teaching. In her mid-semester conference, Marcy arrived prepared to talk with Nicholas about how she was conceptualizing this work: "There is an article on coaching [Clark, 2004] that helped me and Jennifer's [Serravallo, 2015] book has helped, too. I can't keep them with me while I'm teaching so I'm trying to figure out which strategies might help my readers but I think I get I might not pick the right one" (Interview, March 2018). Providing opportunities for TCs to experience and then analyze the entanglements of things that went well and things that could have gone better in every single teaching act is central toward producing reflective, resilient practitioners.

Sarah: Reflecting Upon Teaching

Whether private or publicly enacted, teacher preparation is personal and tied to reflective practice. Developing reflective practitioners is a standard expectation upheld across teacher education settings. For example, INTASC Principle #9 states: "The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professionals in the learning community) (ILA Research Advisory, 2017) and who actively seeks out opportunities to grow professionally. Reflection and "continual evaluation" imply that TCs notice and correct particular micro-failures to grow as teachers. In this example, we describe productive failure for Sarah as she navigated supporting multiple supervisors who were working with TCs in reflective small groups presenting their practice to one another. Failure works productively for LTEs to reconsider how critical reflective practices are introduced, supported, and extended.

Sarah's identified challenges are drawn from a literacy course she coordinates and teaches that is connected to a school-based clinical experience with undergraduate students and a constant rotation of supervisors. TCs are enrolled in a capstone style course that includes embedded fieldwork for a series of 30 hours of closely supervised lessons with K-8 students. The demand for the course, paired with tight budgets, has resulted in frequent shifting of course delivery, particularly supervising personnel—graduate students support through a practicum, temporary instructors vary by semester, as do the TCs and the school age students. However, one constant component of the course is a small group seminar where TCs present instructional video clips through a modified practical argument framework (Fenstermacher & Richardson, 1993; Vásquez-Levy, 1998), a critical reflective dialogue among informed colleagues. Each semester, TCs frequently comment on the benefit of the small group seminar (“seminar was the best part of the whole class”, reflection) and supervisors celebrate the growth TCs have demonstrated over the semester. However, Sarah often experiences tensions as examples about what was great or how progress was observed are shared with her because they frequently reflect a kind-hearted supported network and idea sharing session, rather than the critical and rigorous expectations laid out in the beginning of the semester.

For example, the seminar protocol is delivered with the whole group of TCs and several supervisors. Sarah provides a written process and discusses it, shares an example from one of her supervision groups and works through a live example of her video practice with students. Layering the content is Sarah's attempt to reinforce the process and the benefit of the practice. In a practice round, using her own teaching video she provides peer coaching questions drawn from Stanfield (2013) to support moving from objective questions (e.g. What were the major goals of your lesson? What are some strategies you used?) to decisional questions (e.g. What might you do to improve student engagement? What supports will you need to continue to work on those areas of concern to you?) Sarah reflected after modeling the video presentation of her practice, “I tried to put myself in the hot seat and draw out more critical conversation, even offered some stems to help reluctant TCs engage and it doesn't seem to be enough—need to cut the power deference somehow! Raise expectations?” (Reflective memo).

Once instruction begins in the field, students and supervisors establish seminar norms in their respective groups and agree to a common protocol. Regardless, the criticality embedded in small group sessions varies by supervisor. Some supervisors are contracted for a portion of the semester which does not require participation in introductory preparation and therefore miss the shared preparation for seminar, leaving it to students to take the lead. Supervisors, some

of whom are long-standing, may participate in the preparatory classes but this has not established consistency. Frequent meetings as a collaborative team have revealed that some supervisors “love the chance to give advice” (supervisor A, notes) and others begin to “table out even with the coaching questions handy—sometimes, I am at a loss for what to say” (supervisor B, notes). Yet, the pressing contribution of the small group seminar is intended to propel professional dialogue and guide critical self-reflection (Zeichner & Liston, 1996). Neither asking supervisors to refrain from giving advice, nor suggestions about posing critical questions seemed to right the path back to dialogic critical self-reflection.

Without the conditions described regarding consistent attention to critical reflection during seminar sessions, Sarah’s renewed emphasis on how reflection is focused and why would not have been possible. Sugar-coated reflective sessions seemed inevitable in light of contextual constraints such as new supervisors or collaborating with six supervisors simultaneously. However, with renewed attention to critical reflection, potential changes were imagined, much like Beth’s scripting process shifted the writing instruction shared above.

Leveraging PF in her coordinating role, Sarah’s acceptance of potential new directions in supporting supervisors and students generated additional inquiry into faculty resources to redesign professional development materials for supervisors and continued conversation across institutions for alternatives. Although she already used a highly scaffolded process (examples, a guided narrative showing how to unpack video, and time for Q&A), and many supervisors were supportive, it appeared that they were not invested in promoting critical professional dialogue. Some of the challenge may lurk in a philosophical mismatch in approaches to learning/teaching with a more top down or empty vessel approach to learning and TCs teaching developmental progression.

Sarah’s lawn mower approach with extensive scaffolding did not demonstrate how to navigate the pitfalls inherent in dialogic critical reflection contingent upon trusting relationships. The supervisors had positive comments about the seminar process as did their TCs and all perceived the sessions to be extremely helpful. Sarah’s PF enabled her to reimagine how preparation and extended support might be conceptualized differently, perhaps with a coaching institute or an instructive video module to better support all supervisors.

Discussion

The first two case studies in Beth and Nicholas’s classrooms reveal how TCs’ productive failures in planning and enactment revealed their need of/desire for further professional development due, in part, to the scaffolding and feedback

provided by their LTEs. In Sarah's example, a LTE's productive failure described challenges in supporting critical reflection which shifted decision making and practice. The durable good that both teacher candidates and teacher educators derived from engaging with PF is reflected in all three examples, a compelling urgency to prepare TCs for the complex demands of in-the-moment decision making that defines the work of teaching and learning.

Productive failures are tools for change and we end here with two aspects of failure that can begin a renewed effort in examining how LTEs work with TCs to enact literacy practices: *relational failure* and *failure to transfer*. In all three examples extended relationships and expectations of transfer were valued practices we uphold and simultaneously mull over, often in distress when things go awry in the process of TCs fledgling independence. We imagine that LTEs in other contexts may connect with these challenges and through our inquiry here, we encourage the extension of inquiry into PF beyond the three settings for future LTE research.

Relational Failure

Relational failure is a mismatch in accurately connecting the dots when thinking across and about the students, setting, and/or expectations. As we engage in strengths-based LTE, we also invite TCs to imagine K-12 student mistakes and misconceptions (within parts of the lesson) and expect TCs to think through how to teach/model/respond to this failure. LTEs have the opportunity to consider potential student confusion and how they will respond. This focus on modeling response(s) to failure in teaching and learning is what Beth's lesson planning example illustrates so well: she provides feedback on lessons, noting miscalculation and missteps, keeping possibility of failure open so that TCs begin to view failure not as a static evaluation of them or identity as educator-to-be, but rather a productive next step. Long term engagement in various settings, shifting supervision teams, shifting community contexts, and a need for enough or more space/time to unpack dilemmas with TCs and colleagues, all revolve around relationships among educators at all levels and positions. Further, there is also a relationship *between expectations*, in that TCs are often engaged in planning, enactment, and reflection as part of coursework, which inherently carries the relationship between grades and failure. We note that "A" lesson plans can fail when implemented while "F" lesson plans can be successful. LTEs may miss the potential to highlight the relationship of the child and instructional setting as essential components of the decision making involved in literacy teacher education.

Failure to Transfer

While LTEs approach teacher education with great intentions, thoughtful planning, and clear demonstrations, we understand these tools do not ensure TCs have a repertoire of strategies and pedagogical moves for the unexpected situations that classrooms, schools, and communities present. The boundary around how pedagogical tools develop, where they are developed and with whom, as well as with attention to tensions in doing so, should be permeable and expansive to provide greater opportunity for exchange of teaching/learning. In Sarah's discussion of critical reflection, her explicit, yet limited engagement illustrates that frontloading is not enough. Foregrounding PF shifted her inquiry from "why aren't my students and supervising groups engaging with more rigor" to "how can supervision shift to generate more rigor in critical reflection?" In Nicholas's word study example, TCs recognized that the prompt to "sound out" /beautiful/ would not work, but needed additional, familiar, strategic prompts to repair the situation in the moment. In Beth's feedback she notes "...that's what I'm missing your current script/lesson, [it's] that writing instruction [piece]...where you're teaching kids the skills and practices and strategies that they need to go be successful independently." More explicit modeling and teaching of teachers with conflicting emphasis on what matters as the take away may increase failure with potential expanded transfer of knowledge and practices. We are not just rehearsing procedural engagement when we ask TCs to plan, enact and reflect; rather, we aim to reveal the possibilities of other next steps. When the LTE see instructional decisions unfolding in one way, and TCs see otherwise, that discussion may be a crucial aspect of the interaction to focus upon.

A Challenge

We are committed to "educating for a just society" (the theme of this volume), therefore we must be willing to make space for future teachers to encounter challenges that mirror the messiness of real classrooms. Yet, we must also be careful with the ways in which our embrace of productive failure in teacher education might impact the K-12 youth our TCs engage with in field-based settings. It is essential our TCs demonstrate expertise in public teaching engagements with youth. Given this, the challenge for teacher educators resides in creating opportunities for TCs to envision and enact teaching, and in that activity, be willing to entertain and wrestle with failure. How do we support their development as teachers in preparing them to communicate content and also to attend to the ways that content is being delivered for student learning? LTEs can evaluate how we are supporting opportunities for our TCs to fail, and fail productively, while

still supporting the students they are working with. How might we, as teacher educators, utilize failure as a generative conduit to new inquiries and understandings? How might such reconfigurations shift how we think about preparedness? Carving out sometimes risky spaces for TCs to try on the complicated, often-unpredictable world of teaching while they are surrounded by the support of peers and professors is a crucial practice, one that will pay great dividends as TCs enter the profession.

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2018 OUTSTANDING DISSERTATION AWARD WINNER

LEARNING, LANGUAGE, AND LITERACY AS ENTITIES FOR EMPOWERMENT AND EQUALITY: A CASE STUDY OF THREE ADOLESCENT INDIGENOUS IXIL ELS

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Abstract

The purpose of this case study is to understand the language and literacy experiences of adolescent immigrant Ixil students in the United States. For this, two questions focusing on language transference and literacy skills of participants were researched. Findings reflect the divergent language and literacy learning realities of Ixil participants and their non-Indigenous Latinx EL counterparts. These findings offer new insights of how Ixil students understand formal schooling and sets a foundation for future research addressing the literacy and language experiences and realities of Indigenous Latinx ELs in U.S. classrooms.

Keywords: Ixil, Indigenous education, ESOL, Spanish, Literacy, Latinx students, SLA

Introduction

Latinxs account for 17.6% of the total U.S. population—56.6 million people—and their community is projected to more than double by the year 2060 (United States Census Bureau, 2016). Moreover, latest reports show that states such as North and South Dakota, Alabama, Georgia, and Louisiana are experiencing a drastic Latinx population growth rate that is quickly changing their heterogeneous English-speaking communities (Krogstad, 2016). These statistics reflect current classroom demographics, where many Latinx immigrant students are becoming a majority within the English learner population. In fact, Latinx students currently represent 77% of the entire population of English learners (ELs) in U.S. classrooms (NCES, 2018) and Spanish is the second most spoken and taught language in the United States after English.

Many of the Latinx ELs arriving in the United States from Latin America, specifically from Central American countries, have interrupted or no formal education (Custodio & O’Loughlin, 2017; Pentón Herrera & Duany, 2016). Furthermore, some of them speak Spanish as their second language because they were born and raised in Indigenous populations that speak Indigenous languages as their native language (L1). When they arrive to the United States, many are still emergent learners in their L1 (Indigenous languages), and in Spanish, which negatively impacts their abilities to learn and comprehend English (Pentón Herrera, 2018). Thus, the existent literacy gap becomes an additional barrier that these immigrant students need to overcome in the U.S. society and that may lead to heritage language loss in children and future family members. For this reason, the purpose of this case study is to explore the language and literacy learning realities of three adolescent Ixil students from their perspectives. Furthermore, this research is interested in exploring how the process of transferring language occurs for these participants who have emergent literacy skills in their L1, in Spanish—their second language (L2), and are now learning English as a third language (L3) in the United States.

Background of the Study

The history of English for speakers of other languages (ESOL) in the United States dates back to the XVIII century where German, Dutch, French, Swedish, and Polish were all commonly taught and spoken languages (Olsen, 2015). Due to political and social circumstances in the 1930s, ESOL education became a service only offered to foreign diplomats and university students who did not speak English. In the 1960s and 1970s, ESOL education gained momentum after the Supreme Court’s ruling in *Lau v. Nichols* where ELs were considered

an important part of the education system and schools were required to offer ESOL services to all ELs in public schools. During this crucial time for ESOL education, researchers began to identify pockets of populations within ELs and Latinxs became a relevant population of study. Throughout the years, research of Latinx ELs has evolved and its focus has shifted from Mexican American ELs (Nieto, 2009) to a broader term that acknowledges other ethnic groups, known as Spanish-speaking population or Hispanics (Adkins, 1969; Nieto, 2009). However, throughout this time, research on the Hispanic/Latinx EL population has yet to place a spotlight on a minority group within its population: the Indigenous Latinx EL population. There is currently little to no research about the academic language and literacy realities of Indigenous Latinx ELs in U.S. K-12 classrooms.

One of the Indigenous Latinx populations of ELs present in U.S. schools is the Ixil (also spelled *Ixbil*). The Ixil are an Indigenous Mayan population that was nearly exterminated in Guatemala after dictator José Efraín Ríos Montt targeted them for 36 years—1960 to 1996—for being Indigenous. During this period, commonly referred to as *La Violencia* (The Violence), the Ixil region suffered 114 documented massacres. Data from the 1989 Census indicates that there was a total of 2,642 widows and 4,186 orphans (one in six children lost a parent), and that more were located in hiding or refugee camps and unaccounted for (Place, 2013). During these 36 years of turmoil and bloodshed, some refugees moved to Mexico and the United States. The National Commission for the Development of Indigenous Peoples reported that there were 224 Ixil-speakers in Mexico in 2006 (CDI, 2006). This represents the smallest ethnolinguistic group in that country. Currently, data and statistics on the Ixil people in the United States is not collected or provided. It is known, however, that Ixil people are part of student bodies in different schools across the United States (see Barillas-Chón, 2010; Casanova, 2019; Pentón Herrera, 2018).

Immigrant Ixil ELs are an unvoiced population of students with specific literacy and language needs. For the average Spanish-speaking Latinx student, language transferability is a seemingly smoother process because students use the literacy knowledge acquired in their native language to learn English (Krashen, 1984). The process of learning a language is generally easier when learners have background knowledge to draw from and compare the newly acquired information with prior content. However, for Ixil ELs—and other Indigenous learners in a similar situation—language transferability may be a rather challenging process because, many times, their literacy skill is emergent in their native language and have emergent or no proficiency in Spanish (their second language). The broken language and literacy links between Ixil, Spanish, and English present a dilemma

that must be attended to and solved for the benefit of these students and the school systems where they belong.

Problem Statement and Significance of the Study

In the United States, the Ixil population is not acknowledged and there are currently no statistics regarding this population in the United States Census. Studies tell us that the Ixil population has been migrating to the United States since the Guatemalan Civil War in the hopes of a better future (Jonas & Rodríguez, 2014; Jenner & Konkel, 2018) but, for many, the Ixil people remain unknown. The challenge with remaining an unknown population within the Latinx diaspora is that teachers cannot provide adequate academic support to the arriving student population. The Ixil ELs, often identified as Spanish speakers because they are from Guatemala, are usually clustered with non-Indigenous Spanish-speaking Latinx students and are taught English using Spanish as linguistic support. However, the reality is that Ixil ELs do not speak Spanish as a first language and many of them may not know how to speak, read, or write Spanish at all.

The current literature agrees that Indigenous students who become literate in their L1 experience a positive emotional, mental, cultural, social, and academic development (Ball & McIvor, 2013; Georgiyeva, 2015; Scull, 2016). In addition, Scull (2016) asserts that for effective literacy teaching of Indigenous children, there must be a clear understanding of the social and communication function of those Indigenous languages, and their lexical and grammatical structures. However, there are currently no programs in the United States that acknowledge, talk about, or teach educators about the Ixil culture, language, or traditions. The Ixil, and other Indigenous populations from Latin America, need to be addressed and acknowledged in the Teaching English for speakers of other languages (TESOL) field because they are a growing population in the United States who deserve quality education tailored to their needs. New statistics from the U.S. Department of Justice show that three Mayan languages—Mam, Quiche, and Kanjobal—are currently among the top languages used for translation in immigration courts (United States Department of Justice, 2017). These statistics are an indication that not all Latinx students arriving to the United States are native Spanish speakers and that, perhaps, it is time for ESOL educators to become aware of best practices for teaching Indigenous populations of students.

Purpose Statement

The purpose of this qualitative case study inquiry is to understand the literacy and language experiences of three adolescent Ixil ELs who are literacy-emergent

in their L1 and L2 and are now learning an L3 in the United States. More specifically, this research looks at how language transferability behaves in Ixil ELs who are literacy-emergent in their native language (Ixil), have emergent proficiency in their second language (Spanish), and are learning a third language (English). Furthermore, this study poses a hypothesis for the process of how Ixil students learn and acquire English, which is different from the non-Indigenous Latinx student population who speaks Spanish as L1. Through the process of exploring the linguistic characteristics of this population, this study provides knowledge about Ixil students, and perhaps other Indigenous populations, with the vision of making a positive distinction between Latinx Indigenous ELs and their Spanish-speaking Latinx EL counterparts.

Research Questions

The focus of this inquiry is how language transferability behaves for adolescent students who are literacy-emergent in their L1 and have emergent language literacy skills in their L2 and are learning an L3. In addition, this study also focuses on the learning experiences of Ixil students in a U.S. high school. As such, the research questions of this study are:

- RQ1:** What are the language and learning experiences of the adolescent Ixil ELs who have emergent literacy skills in their L1 and L2 and are now learning an L3 in the United States?
- SQ1:** How do Ixil students describe their own language learning experience in their new school in the United States?
- RQ2:** How does the process of transferring language occur in adolescent Ixil ELs who have emergent literacy skills in their L1 and L2 and are now learning an L3 in the United States?

Theoretical Foundations

This study draws on Stephen Krashen's second language acquisition (SLA) theory for understanding the language, learning gaps, and experiences of Ixil ELs in the United States. The SLA theory presents five hypotheses, namely: (1) the acquisition-learning hypothesis; (2) the natural order hypothesis; (3) the monitor hypothesis; (4) the input hypothesis; and (5) the affective filter hypothesis (Krashen, 1984), shown in *Figure 1*. The acquisition-learning hypothesis holds that language acquisition is a subconscious process where, sometimes, the learner may only use that knowledge to communicate, but may not explain the

grammatical rules behind that knowledge (Krashen, 1984). Similarly, language learning is thought as a process in which the learner profits from explicit presentation of rules and error correction. On the other hand, the natural order hypothesis proposes that language is acquired—not learned—through a predictable order. This means that for any given language certain grammatical rules are acquired early while others are acquired later in the process. The third hypothesis, the monitor hypothesis, explains that as students learn grammatical rules, their brain automatically corrects the output to produce grammatically-coherent speech. This is consistent with the input hypothesis which describes that language is acquired through understanding input communication, and speech emerges based on those assumptions made by prior inputs. Lastly, the affective filter hypothesis states that the more students feel anxious, stressed, and nervous, the less they will learn and acquire a language (Krashen, 1984).

Although this study identifies Ixil students as students learning English as a third language, Krashen's theory is applicable because SLA can also incorporate the learning of third, fourth, or subsequent languages (Gass & Selinker, 2008). The third language acquisition approach was not selected as the doctrine for the theoretical framework because it is a nascent area of study and it has yet many opportunities for expansion and development (Molnár, 2008). The SLA theory best aligns with this work because it explains the need for creating a welcoming and culturally-conscious environment in schools for language-minority students.

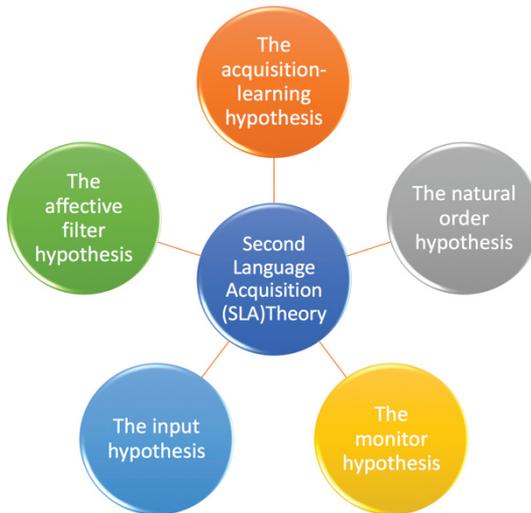


Figure 1. Krashen's Second Language Acquisition Theory

Methods

Setting

This inquiry was conducted in a public school, Newberry High School (pseudonym), in a northeastern state of the United States of America. Data collection was conducted primarily in the ESOL classrooms where two of the participants were taking an ESOL Newcomer course, and the other participant was taking an ESOL Beginner course in a separate ESOL classroom. These classrooms are considered learning cottages, or temporary classrooms, and were located outside of the school's two main buildings.

Participants

A total of three adolescent Ixil ELs participated in this inquiry. The primary reason only three student-participants were asked to participate is that only three Ixil students attended the school, which was considered a convenience sampling (Merriam & Tisdell, 2016). These students were also chosen based on the assumption that I wanted to discover, understand, and gain insight about these participants specifically, which is considered purposive sampling (Merriam

TABLE 1
Information about participants

Name	Age	Formal Education in Guatemala	Proficiency in Ixil	Proficiency in Spanish	Proficiency in English
Aparicio	17	3 years (Interrupted Ed.)	Can speak & listen proficiently. <i>Cannot</i> read and write	Challenges reading, writing, listening, and speaking	Newcomer proficiency
Benito	18	6 years (Interrupted Ed.)	Emergent proficiency in reading, writing, listening and speaking	Challenges reading, writing, listening, and speaking	Newcomer proficiency
Donancio	18	9 years (No significant interrupted Ed.)	Can speak & listen proficiently. <i>Cannot</i> read and write	Proficient in reading, writing, listening, and speaking	Beginner proficiency

& Tisdell, 2016). Hence, the sampling used for this study was a combination between convenience and purposive sampling.

All three participants were Ixil ELs who recently arrived to the United States. Their ages ranged between 17 to 18 years old. All three participants were male students who spoke Ixil as a first language and who came from Guatemala's *El Quiché* region. *Table 1* shares additional information for each participant. All names are pseudonyms.

Data Collection

The data collection process of this inquiry was guided primarily by three different methods: (1) interviews with a photo elicitation component; (2) observations; and (3) artifacts. All three of these methods of data collection are qualitative in nature and align with the inquiry's intent of learning more about the participants' real-life experiences. In addition, the selected qualitative data collection methods (interviews, observations, and artifacts) were useful for understanding the inquiry's setting, contextualizing findings, and diversifying the opportunities to gather relevant data about the participants' reality (Harper, 2002; Merriam, 2009).

Interviews

A total of five interviews per student were conducted throughout the study. All were conducted in Spanish and audio recorded. Two out of the five interviews (the initial and final interviews) lasted approximately 50 to 60 minutes; three interviews were post-observation interviews lasting approximately 30-40 minutes and are discussed below in the observations section. The initial interview focused on the participants' personal and educational background and the language and learning experiences they had in their native country. This first interview also included a visual elicitation component where participants explained their language and learning experiences in the United States (see the next section for visual elicitation information). Overall, the first interview focused on learning about the participants' background and learning experiences in their native country.

The final interview took place after the three post-observation interviews (see Observations section below); this interview was the final interview and concluded the data collection process. During this final interview, participants were asked about what they identified as their needs to succeed in their future as ELs and any question that emerged from the data analysis processes. In a sense, the final interview sought to uncover the participants' self-perceived needs for

language learning in their academic future. In addition, during the final interview, students were asked to have ready a drawing portraying their experiences as Ixil ELs in the United States. The purpose for asking questions about the participants' experiences as students in U.S. classrooms was to learn about their individual and unique perspectives as Ixil ELs, which was a topic that had yet to be realized.

Post-Observation Interviews

There were a total of three short post-observation interviews per participant each lasting no more than 30–40 minutes. All of the post-observation interviews took place in my classroom because it was a familiar, private, and comfortable place for the participants. The purpose of the post-observation interviews was to address specific behaviors, interactions, and learning experiences each participant had encountered during that particular observation session. As such, the post-observation interview questions were crafted after each observation was conducted and focused on a particular event or series of events that occurred during that observation. These post-observation interviews were used to better compartmentalize the participants' literacy and language learning experiences as they developed in each observation. The post-observation interviews also sought to open a dialogue with the participants about specific behaviors, interactions, and learning experiences that may not be addressed in observations without an interview component. These post-observation interviews also enabled me to address questions that emerged from this data in the final interview.

Visual Elicitation

Visual elicitation was used to create an opportunity to harness the participants' artistic nature while collecting data that reflects their own reality (Harper, 2002). Visual elicitation in this inquiry took the form of participant drawings. The participants were asked to draw a visual representation of their experiences learning English in the United States. Because a couple of the participants had difficulty speaking Spanish (the language that was used for the interview questions), participants were able to use the visuals as tools to complete their answers or show a representation of what they meant to say. In addition, the drawings provided a tangible description of how participants felt at the moment they made those drawings. Furthermore, the drawings served as an opportunity to ask additional questions using them as visual support for communication (Harper, 2002). In this way, the data collected added insight into the participants' reality and feelings towards their experiences as ELs in a more authentic manner.

Observations

For this study, the observations took place in the participants' ESOL classrooms as they interacted with their classmates and teachers. Each participant was observed a total of three times, each observation lasting 90 minutes. One observation took place in the ESOL classroom, one in the science classroom, and one in the mathematics classroom for each participant. The rationale for choosing these specific subjects is that English, mathematics, and science are considered relevant courses in high school and beyond (Green, Martin, & Marsh, 2007; Lim, 2008). The purpose of each observation was to observe the participants interact with their teacher and classmates in their natural setting as they would do in their daily teaching-learning environment. Furthermore, the observations sought to gather data on the development, interaction, type of language used, and behavior of the participants in their ESOL classroom.

Artifacts

For this inquiry, the artifacts used took the form of drawings, physical materials, researcher's journal, and physical objects. Anthropologists typically refer to physical materials as "tools, implements, utensils, and instruments of everyday living" (Merriam & Tisdell, 2016, p. 171). In the context of this study, physical objects encompassed all instructional materials the participants used during the observations. These instructional materials were collected and used in the post-observation interviews as an elicitation tool to facilitate the question and answer process. The use of artifacts in post-observation interviews served as probes to go deeper into a particular topic. Similarly, participants had the opportunity to use artifacts to remember their experiences in class and to better answer the questions during the post-observation interviews.

Findings

The most relevant findings for each research question are addressed below in bullet points and explained below in the discussion section.

RQ1: What are the language and learning experiences of the adolescent Ixil ELs who have emergent literacy skills in their L1 and L2 and are now learning an L3 in the United States?

- Participants understand language domains as separate identities.
- Participants were taught to use Ixil for speaking and listening in Guatemala.

- Participants were taught to use Spanish for writing and reading in Guatemala.
- As a result, participants use Spanish to learn English for three reasons:
 1. **Power:** Spanish is seen as “more powerful” than Ixil.
 2. **Skills:** Text literacy (writing and reading) was only taught in Spanish.
 3. **Resources:** In the form of academic and human (people who speak Ixil) resources.

SQ1: How do Ixil students describe their own language learning experience in their new school in the United States?

- Participants describe their own language learning experience in their new school as both an academic and a social experience.

Figure 2 represents a visual hierarchy of what participants identified to be their social perception and *Figure 3* represents the participants’ academic perception.

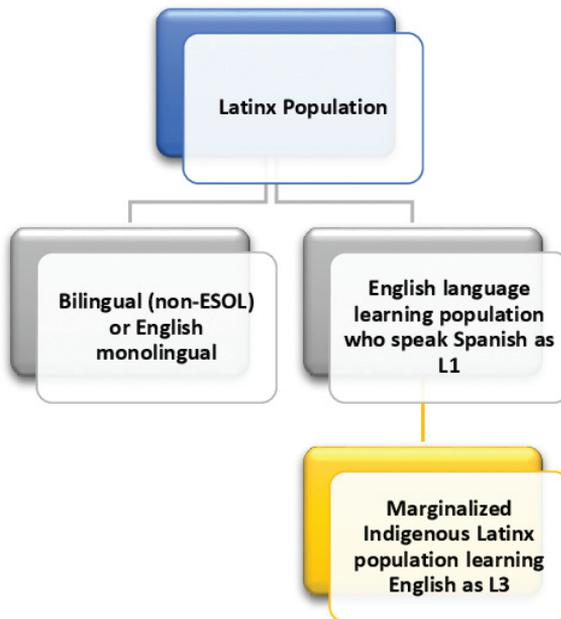


Figure 2. Social Perception of Participants

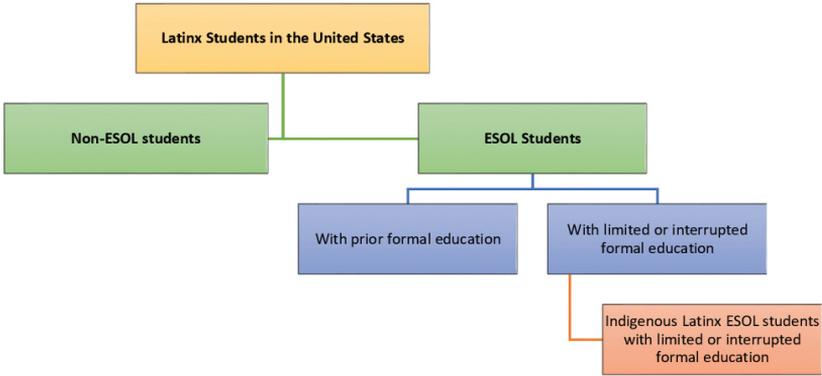


Figure 3. Academic Perception of Participants

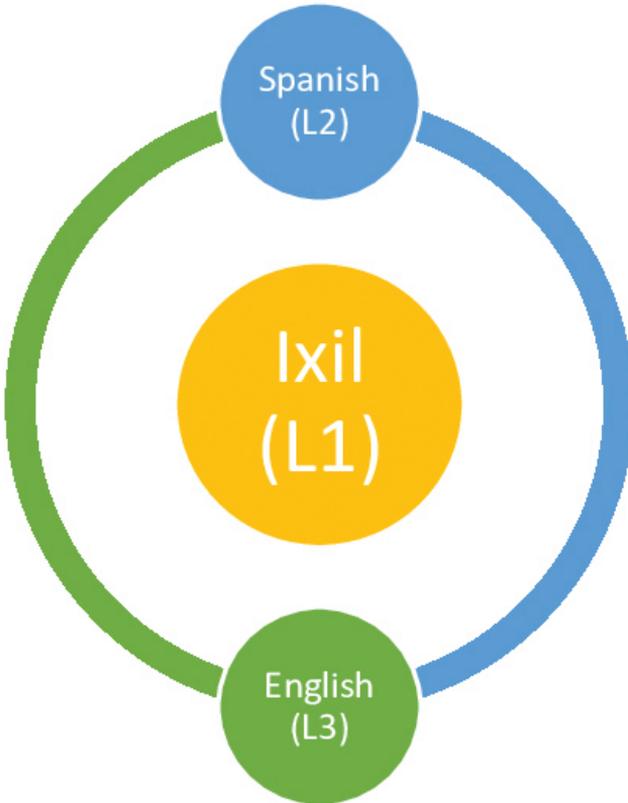


Figure 4. The process of transferring language for Ixil participants

RQ2: How does the process of transferring language occur in adolescent Ixil ELs who have emergent literacy skills in their L1 and L2 and are now learning an L3 in the United States?

- L1 and L2 literacy practices were never clearly defined in their native countries. Include instruction that develops 4 language domains, not that expects proficiency in them.
- Use Spanish as linguistic support to learn English, not Ixil. *Figure 4* represents the process of transferring language identified by all participants.
- Use a small-group approach to reach them.
- Use teacher-led instruction and gradually teach them to take ownership of their learning.
- Teach by doing : teach/learn skills that are applicable and relevant to their immediate lives.
- Using visual forms of meaning-making are important.

Discussion

The findings shared and explained in this study have major implications for the teaching field, especially when looking into the reality of education as an entity for change and advocacy. In this section, I identify six main implications that emerged from the findings.

Non-Indigenous vs. Indigenous Latinx EL education

The findings revealed that generalizing student populations based on their country of origin is dangerous and puts vulnerable learners at academic risk. Within the context of this study, it was found that the participants—Indigenous ELs—are, in fact, linguistically, culturally, and academically different from their non-Indigenous Latinx EL counterparts. This means that effective instructional practices and settings for the Indigenous Latinx population needs to be different than their non-Indigenous counterparts and resources need to be tailored to their academic reality, not the academic expectations of schools in the United States. For teachers, it is important to seek knowledge of Indigenous education models in Latin America and the realities Indigenous students face in their native countries and in the United States. For researchers, it is necessary to continue expanding on the topic of Indigenous education within the Latinx EL population in U.S. classrooms.

Social, Emotional, and Academic Realities of Indigenous Latinx ELs

The emerging findings of this study revealed that the participants experience different social, emotional, and academic realities than their non-Indigenous Latinx EL counterparts. Indigenous Latinx ELs may arrive to U.S. classrooms with lived experiences that differ from Spanish-speaking Latinxs because of how society in their native countries perceive and treat Indigenous and non-Indigenous peoples. Indigenous peoples are often discriminated against, have fewer opportunities for advancement, and have—as a consequence—lower literacy skills. As a result, when Indigenous Latinx ELs arrive to U.S. classrooms, they bring an emotional baggage that reflects their unique prior lived experiences in their native countries. It is important for educators to learn more about their Indigenous students' unique social, emotional, and academic realities before generalizing their identities based on their country of origin. Furthermore, it is germane for researchers to further inquiry on the social, emotional, and academic realities of Indigenous Latinx ELs in U.S. classrooms as an opportunity to better understand their perspectives and provide appropriate resources.

Language Learning and Transference

Data uncovered that participants understand language domains as separate identities. Because they come from a culture that values oral traditions, the Ixil language has been used throughout their lives for speaking and listening. On the other hand, because Spanish was seen as the language of opportunities and academics, they were taught to write and read in Spanish in schools back in Guatemala but speaking and listening to Spanish was not a common practice in their daily lives. As a result, all participants developed listening and speaking proficiencies in Ixil (their L1) and writing and reading proficiencies (at different levels for each participant) in Spanish (their L2). However, participants did not develop fluent proficiency in all four language domains in neither their L1 nor L2. In the United States, participants are expected to perform at grade level in all four language domains and, for the first time in their lives, they are navigating through the process of discovering how to become literate and fluent in all four domains of one language (English). This finding, in particular, sheds light on the many dimensions of language and literacy learning and adds an additional consideration to the expectations ELs are subjected to once they arrived to the United States.

Learning, Language, and Literacy as Entities for Empowerment and Equality

One of the most distinct findings throughout this study is how learning (formal education), language, and literacy serve as entities for the empowerment and equality of the participants. Aparicio, Benito, and Donancio came to the United States from a country where formal education, language, and literacy were seen as barriers for personal, social, economic, and professional improvement. Because they spoke Ixil as a first language, they were seen as inferior in their native country and they had to learn Spanish to be considered equal. Thus, they migrated to the United States in the search of better opportunities and equality. However, upon their arrival, formal education, language, and literacy continued to be barriers for their personal, social, economic, and professional improvement. Not only do they have to learn and survive in the Spanish-speaking Latinx sub-community within their community, but they also have to perform at grade level, learn how to survive in a new educational system, and learn English in order to be successful and graduate high school. For teachers, it is important to seek continuous knowledge on how to best serve this underserved population. For researchers, it is necessary to continue inquiring on the best approaches to empower the Indigenous Latinx ESOL population through learning, language, and literacy in their native languages, Spanish, and English in the United States.

Advocacy for Indigenous Latinx ELs in the Classroom and Beyond

Indigenous Latinx ELs are a student population that is unique, ethnically diverse, and linguistically different from their non-Indigenous EL counterparts. This student population continues to be widely unaddressed in the literature surrounding Latinx ELs in U.S. schools. As a consequence, there are scant linguistic and didactic resources ESOL educators can use to advocate for this vulnerable population inside the classroom. However, the vision of this study was to contribute to the current literature by making Indigenous Latinx ELs a visible population, one that is different from their non-Indigenous counterparts. The majority of students within the Indigenous Latinx EL population need substantial literacy instruction due to their limited, interrupted, or atypical educational background (Ruiz & Barajas, 2012). As such, this study offers findings about the Ixil that educators can use to better understand their cultures, modify their instructional materials, and provide support in their L1. The topic of advocacy—inside and outside of the classroom—for Indigenous Latinx ELs is a completely fertile field

of study. Nonetheless, this study hopes to provide visibility and start conversations about future plans of actions to support this unacknowledged and vibrant student population. To read more about advocating for Indigenous Latinx populations in the United States, see Pentón Herrera (2019).

SLA to Third Language Acquisition

An important finding in this study is that participants used their L2 (Spanish), not their L1 (Ixil), as academic and literacy resource for learning their L3 (English). As explained in Krashen's (1984) SLA, the stronger the literacy skills of previous languages are, the better and faster students will learn a new language. According to Krashen's (1984) SLA, students use all of their prior knowledge to learn a new language. However, it was found in this study that students did not use their L1 skills to learn English. In fact, students only relied in Spanish to learn English. Thus, this study's findings align best with the Third Language Acquisition (TLA) theory than with the SLA. According to the TLA, the acquisition of an L3 can take as a source language the L1 or L2, "by source language or language supplier it is understood that a learner activates one of the previously acquired language systems he/she has access to and passes this knowledge to the language he/she is currently acquiring" (Duhalde Solís, 2015, pp. 10-11). This means that students learning an L3 do not necessarily use all previously-learned languages as support, but they focus on one of the previously-learned languages as supplier and support to learn the new language. Because the TLA is a nascent field of study, this theory does not explain or identify which language is used by the learner or why. As a result, it is important for future studies to delve deeper into the implications of language learning for Indigenous Latinx ESOL populations in U.S. classrooms from a TLA perspective.

Conclusions

In the U.S. educational context, Aparicio, Benito, and Donancio are exposed to a new social hierarchy where language represents power. They rarely speak Ixil, even among themselves to avoid drawing attention to their ethnicity. Instead, they prefer to "blend in" with the Spanish-speaking Latinx ESOL population in their classrooms to gain social status. However, their oral proficiency in Spanish quickly reveals that they are not native Spanish speakers, which prompts Latinx students to ask personal questions such as country of origin and native language. Once identified as Indigenous, it is not uncommon for some of their Spanish-speaking peers to reproduce cultural habits of discrimination and elitism from their native countries in the United States. For that reason, English becomes the

language that emancipates these Indigenous students' realities and empowers them to find equality in this new society.

Future research addressing similar student populations (Indigenous, minority, ELs) in the ESOL classrooms should focus on language learning as an entity for empowerment and social change. Research should expand its focus beyond the benefits of learning a new language and should delve into the personal metamorphosis minority and vulnerable Indigenous ELs go through as language learners. Furthermore, based on this study's findings regarding how the participants approach the use and learning of each of the three languages (Ixil, Spanish, and English), the author recommends that future studies address the layers of multilingualism in the Indigenous Latinx EL population and what their native language, Spanish, and English represent to them in their native countries and once they arrive to the United States.

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MASTER'S AWARD WINNER

SIGHT WORD ACQUISITION WITH STUDENTS WITH SPEECH AND LANGUAGE IMPAIRMENTS USING INTEGRATED PICTURE MNEMONICS

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Abstract

An integrated picture mnemonic flashcard intervention was used for the sight word acquisition of three kindergarten students who have Individualized Education Plans (IEPs) for speech and language impairments. For each flashcard, the researcher embedded a sight word within a picture that the students agreed represented the word. For the intervention, the researcher used the integrated picture mnemonic flashcards with each student individually to learn the unknown sight words embedded in the pictures. An ABAB alternating treatment single subject design was used to collect data for sight word accuracy and fluency. After analyzing the percentage of nonoverlapping data (PND), all three participants had a sight word accuracy PND score of 100 from the baseline cycle (A) to the first cycle of intervention (B). These results indicate that the integrated picture mnemonic sight word intervention was effective in increasing each participant's sight word accuracy.

Keywords: Mnemonics, speech and language, sight words, special education, early childhood

Introduction

Mnemonics, which refer to memory strategies or devices that provide recall cues, can be used to enhance memory across all content areas and classroom disciplines (Lee et al., 2006; Mastropieri & Scruggs, 1998). Mnemonics facilitate retrieval by using meaningful contexts and connections to tie existing knowledge to new information (Scruggs & Mastropieri, 1990). Years of research have shown positive effects of mnemonic strategies with students receiving special education services (Scruggs, Mastropieri, Berkeley, & Marshak, 2010) by providing new academic information in meaningful ways to meet their intellectual and developmental needs (Lee et al., 2006; Mastropieri & Scruggs, 1988).

Scruggs and Mastropieri (1990) have studied several different mnemonic strategies. Integrated (also embedded) picture mnemonics requires the target stimulus to be embedded into an image. For example, Coleman and Morris (1978) created an integrated picture mnemonic of an owl that had two defined eyes to represent the digraph “OO”; Ehri, Deffner, and Wilce (1984) created a picture of a flower with the consonant “F” embedded into the stem.

Several studies have shown elementary students’ academic success in general and special education settings with integrated picture mnemonics. Specifically, integrated picture mnemonics have increased primary students’ letter-sound associations (Ehri, Deffner, & Wilce, 1984), first graders’ letter-sound acquisition and letter recognition (Fulk, Lohman, & Belfiore, 1997), kindergarteners’ production of consonant sounds (Agramonte & Belfiore, 2002), and kindergarteners’ letter-sound knowledge (de Graaff, Verhoeven, Bosman, & Hasselman, 2007). However, searches of research databases yielded no studies on integrated picture mnemonics with students with speech or language impairments.

Speech and language impairments include communication disorders (e.g., stuttering), and articulation, language, or voice impairments that adversely affect a student’s academic performance (Individuals with Disabilities Education Act, 2004; IDEA). Students with speech and language impairments are at risk for reading failure, specifically with comprehension and vocabulary (Hayiou-Thomas, Carroll, Leavett, Hukme, & Snowling, 2017; McLeod & Apel, 2015). Without an adequate repertoire of sight words, early readers spend a great deal of time and effort decoding words. Because of this, readers miss the meaning of the text. Without the ability to quickly recognize and read sight words, students will not be able to comprehend texts (Ehri, 1995; Ravitch, 2007). Recognizing sight words quickly and automatically allows readers to recognize vocabulary words and their meaning without using cognitive resources on decoding. Because sight words serve as a foundation for several reading skills, sight word instruction

is a prominent component in special education students' reading instruction (Alberto, Waugh, Fredrick, & Davis, 2013; Browder, Wakeman, Spooner, Ahlgrim-Dezell, & Algozzine, 2006).

Research shows mnemonic's positive effects on students' academics, positive effects of integrated picture mnemonics with literacy skills, and the importance of sight words as a foundation for reading. However, there is a gap in research connecting integrated picture mnemonics to students with speech and language impairments who struggle with sight word recognition. Specifically, this study aimed to discover the effects of an integrated picture mnemonic sight word intervention with kindergarten students with speech and language impairments., targeting new language content that could be related to prior knowledge.

Literature Review

Mnemonics are strategies used to better encode new information for faster and easier retrieval (Mastropieri & Scruggs, 1998) by providing a meaningful way for students to tie new skills to their already learned skills (Scruggs & Mastropieri, 1990; Scruggs, Mastropieri, Berkeley, & Marshak, 2010). Implementing these memory-enhancing strategies can facilitate recall of information across grade level, academic content, and disability conditions (Scruggs, Mastropieri, Berkeley, & Marshak, 2010; Wolgemuth & Cobb, 2008). Specifically, research has shown that mnemonic strategies can be very effective in increasing academic success with students with mild disabilities (Scruggs, Mastropieri, Berkeley, & Marshak, 2010).

Integrated picture mnemonics have been successfully used as a memory-enhancing and facilitation strategy for literacy skills (Agramonte & Belfiore, 2002; de Graaff, Verhoeven, Bosman, & Hasselman, 2007 et al., 2007; Ehri, Deffner, & Wilce, 1984; Fulk, Lohman, & Belfiore, 1997; Howard, DaDeppo, & De La Paz, 2008). When comparing the effects of integrated picture mnemonics to other mnemonic strategies, McNamara (2012) found that integrated picture mnemonics better increased letter recognition and letter-sound knowledge for some preschool students. By including the letter in the shape of a visual representation that begins with the letter (e.g., embedding the letter "f" in the stem of a flower), Ehri and colleagues (1984) increased low-reading first graders' letter-sound associations. They believed the intervention's effectiveness was attributed to its incorporation of both letter form and letter sound, allowing students to connect these two skills in their memory. This theory was backed up by Scruggs, Mastropieri, Berkeley, and Marshak (2010), who stated that mnemonic strategies require content transfer from prior learning to new learning.

Replicating Ehri and colleagues' (1984) study, Fulk, Lohman, and Belfiore (1997) found similar results with at-risk transitional first graders identified as eligible to receive special education services. The intervention showed generalization and maintenance even two weeks after intervention. Researchers believe the mnemonic strategy success was due to the fact that students were able to form a strong link between the integrated picture mnemonic (i.e., a visual stimulus) and their verbal response, allowing them to make a meaningful connection between already known stimuli (i.e., common pictures) and a new stimulus (i.e., letter-sound knowledge). Furthermore, this intervention strategy linked two unrelated items into a meaningful concept, increasing students' memory of the new skill as well as retrieval of the skill. In other words, subjects could transfer their previous knowledge to their new knowledge through the mnemonic intervention (Scruggs & Mastropieri, 1990; Scruggs, Mastropieri, Berkeley, & Marshak, 2010).

Expanding Fulk colleagues' study (1997), Agramonte and Belfiore (2002) found that integrated picture mnemonic flashcards increased low-performing, at-risk kindergarten students' phonemic awareness even three weeks after intervention. However, although the repeated opportunities and corrective feedback with the flashcards allowed students to transfer the known picture stimuli to the unknown letter stimuli, there was no way to determine whether the students' increase in phonemic skills was due to the repeated exposure and practice, or due to the integrated picture mnemonic intervention. To answer this question, researchers suggested that future research use an alternating treatment design, to analyze intervention facilitated acquisition.

White (2006) found similar effects of integrated picture mnemonics on letter recognition and letter-sound acquisition. Results showed a mnemonic intervention had a positive effect on at-risk kindergarten students' long-term memory of letter-naming knowledge. These results further support Fulk and colleagues' (1997) hypothesis that integrated picture mnemonics are effective because they connect an abstract, unknown stimulus to a concrete, known stimulus.

Moving from phonics to whole words, sight words are defined as high frequency words that should be recognized as a whole; they should be automatically identified in print without having to stop to decode (Ravitch, 2007). Because sight words make up a large percentage of the words used in primary print material, sight word automaticity will greatly increase students' reading abilities (Kear & Gladhart, 1983). Nevertheless, reaching automaticity with sight word recognition requires a powerful mnemonic system, as it demands a lot from one's memory (Ehri, 2005). Howard, DaDeppo, and De La Paz (2008) found that third grade students receiving special education services improved the spelling of sight words after an integrated picture mnemonic strategy. However,

results showed a ceiling effect of a maximum gain in correctly spelled words, and students were still performing below grade level.

It is important to note that mnemonics can bring out areas of cognitive strength for students with disabilities. Specifically, they can help students make connections personally meaningful, use pictures to learn letters/words, and to put less emphasis on cognitive weaknesses (Mastropieri, Scruggs, & Levin, 1985; Scruggs, Mastropieri, Levin, & Morrison, 1987). Fulk and colleagues (1997) argued that students with learning disabilities are less able to independently achieve mastery of content, providing merit for the use of integrated picture mnemonic interventions. Similarly, mnemonics can allow students to more effectively teach themselves, allowing students with disabilities to reach greater achievement with the general education curriculum (Lee et al., 2006).

Students with speech and language impairments are likely to experience reading and spelling difficulties, and students with functional speech disorder and childhood apraxia of speech are likely to remain at risk for reading failure even after their speech and language impairments have appeared to resolve (Zipoli & Merritt, 2017). Several studies reveal the importance of sight words as a foundation for reading (Alberto, Waugh, Fredrick, & Davis, 2013; Browder et al., 2006; Ehri, 2005), and students with speech and language impairments, specifically, need strategies to enhance their ability to identify sight words. Although there is research showing positive results with integrated picture mnemonics for general education and select students with learning disabilities, there is a gap in the research connecting integrated picture mnemonic strategies to sight words. Similarly, there is a research gap connecting integrated picture mnemonics to students with speech and language impairments. Given the positive results of integrated picture mnemonics (Agramonte & Belfiore, 2002; de Graaff, Verhoeven, Bosman, & Hasselman, 2007; Ehri, Deffner, & Wilce, 1984; Fulk, Lohman, & Belfiore, 1997; Howard, DaDeppo, & De La Paz, 2008), combined with the design flaws in previous studies (Agramonte & Belfiore, 2002) and the gap in research connecting mnemonics, sight words, and students with speech and language impairments, the purpose of this study is to investigate the impact of using integrated picture mnemonics as a sight word intervention with kindergarten students with speech and language impairments.

Methodology

This study used an ABAB alternating treatment, single subject design (Engle & Schutt, 2016; Horner, 2005;). Data was collected over the course of 25 school

days. Baseline data was collected for five consecutive school days for a total of five baseline data points during Phase A. During the baseline phase, students received traditional sight word instruction. Then, the intervention was implemented and data was collected for another five consecutive school days for a total of five intervention points during Phase B. This was repeated for the ABAB design. An alternating treatment procedure allowed the researcher to isolate the effects of the intervention versus traditional instruction on students' accuracy and fluency reading sight words.

Participants

Three participants were selected based on their eligibility for speech and language impairment under the Individuals with Disabilities Education Act (IDEA, 2004). All three participants were male and were enrolled in an inclusive kindergarten classroom. Students were selected through convenience and purposeful sampling, since this was a school where the researcher was completing student teaching. The school is a Title 1 school in a suburban area in the northeast, with approximately 50% free and reduced lunch. All participants received push-in and pull-out special education services in the general education and special education classrooms through the provisions in their Individualized Education Plans (IEPs).

Materials

Assent and consent forms. All participants and their parents were provided with assent and consent forms respectively prior to the study. Participants were orally read the assent forms if parents gave consent.

Sight word list. Sight words were chosen from the county's kindergarten list of 24 sight words aligning with the pacing of the curriculum. To collect sight word accuracy and fluency data, students were individually presented with 12 sight words on a sight word list (Figure 1). There were three lists in which the same 12 sight words were arranged in random order. This list was used for data collection during both the baseline and intervention procedures.

Traditional sight word instruction. During baseline and intervention cycles, participants received traditional sight word instruction in the classroom. This included whole-class direct instruction with sight words, introducing one word at a time. The teacher implemented multiple methods of practice for students, including but not limited to search and sort activities, writing and

Randomized List 1	Randomized List 2	Randomized List 3
play	this	come
this	am	get
with	look	this
you	play	am
have	good	have
like	with	good
am	get	look
good	what	what
what	you	play
get	come	you
come	have	like
look	like	with

Figure 1. Sight word list for data collection.

repeating activities, and hands-on game-based activities. After the sight words were introduced in whole-class instruction, the teacher further exposed the students to the words during reading groups, where students were grouped based on reading ability. This allowed for further scaffolding and differentiation.

Data recording sheet. The researcher used data recording sheets to record the accuracy and fluency of students' sight word acquisition. The researcher recorded each student's data on a separate sheet, but all sheets were identical.

Measures

Two sources of quantitative data were collected for each of the three participants' sight word acquisition. Because the integrated picture mnemonics were made by the researcher, there was no established validity or reliability for measuring its effectiveness. However, the researcher collected data on students' accuracy and fluency in orally reciting sight words. Accuracy was measured by how many words the student recited correctly out of the total amount of words (12) on the sight word list. Fluency was measured by how many total words the student recited in three minutes. Even if the student recited a word incorrectly, it still counted towards their words recited in three minutes.

Procedures

Baseline. Baseline data was collected once a day during a five-day cycle. Students were individually presented with 12 sight words on a sight word list (Figure 1) and were asked to recite the words in order from the top of the list to the bottom. They were told that if they could not recite a word, skip it and move on to the next word on the list. The researcher recorded accuracy and fluency data on the data recording sheet.

Intervention. The intervention was implemented with each student once a day during a five-day cycle. Integrated picture mnemonics were used for sight word intervention. The sight word was embedded into a picture to form the mnemonic used to teach sight words. To create the picture, the researcher had a group discussion with the students. Students were asked to explain what they thought of when they heard each sight word. If students did not agree on one image for a sight word, majority ruled and the researcher facilitated the discussion as necessary. For example, for the word "have" students stated they thought of having a TV and having a dog. After discussion, the group decided on the picture "TV" for the word "have," because not all students had a dog, but all students had a TV. Once the image was decided upon, the researcher created a picture by using clipart or Google images (Ehri, Deffner, & Wilce, 1984) and using photo editing software to embed the corresponding sight word. These pictures were printed out and glued onto flashcards, using one 4x5 flashcard per sight word.

For intervention implementation, the sight word integrated picture mnemonic flashcards were presented to the students individually in random order. Of the 12 mnemonic flashcards, six were randomly presented each day. The first half was presented the first day, the second half was presented the next day, and so on. The researcher followed a script and its corresponding steps (Agramonte &

Belfiore, 2002; Fulk, Lohman, & Belfiore, 1997) which included stating the sight word, spelling the sight word, and naming the corresponding picture. Students were then asked to repeat the information. This process happened twice for each of the six mnemonic flash cards presented each day.

The integrated picture mnemonic intervention was implemented in the morning and data was collected later in the afternoon on each intervention day. To collect data after intervention, the baseline sight word list was used. The researcher followed the same procedure as baseline, asking individual students to recite the sight words in order from the top of the list to the bottom.

Findings

This study used an ABAB alternating treatment design; because this is a single-subject study, the percentage of nonoverlapping data (PND) was calculated for both intervention cycles of all three participants' fluency and accuracy. This percentage represents the effectiveness of integrated picture mnemonics as an intervention for learning sight words. To calculate PND, the number of non-overlapping data points was divided by the total number of data points (Scruggs & Mastropieri, 2001).

Figure 2 details the results of Student A. For the first B cycle of intervention, Student A had a PND score of 100 for both accuracy and fluency; the

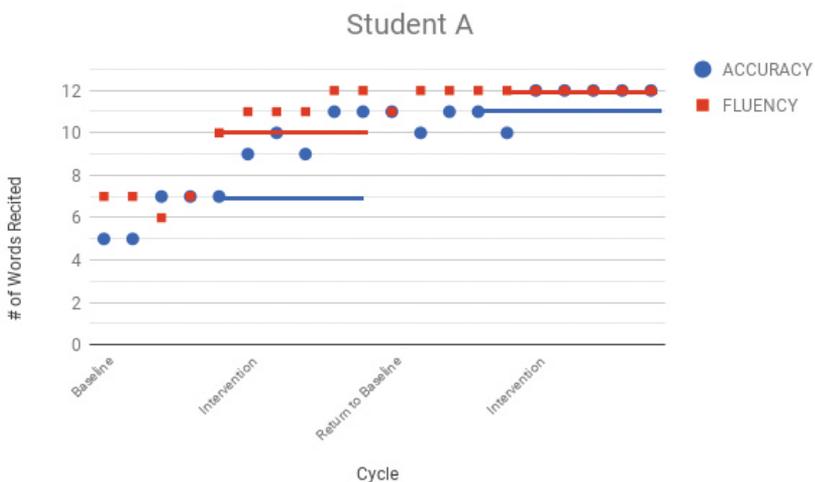


Figure 2. Sight word acquisition for Student A with integrated picture mnemonic intervention.

As shown in Figure 3, Student B, who had a PND score of 100 for accuracy and 60 for fluency for the first B cycle of intervention; the second intervention cycle after the second A cycle (return to baseline) had 0% of nonoverlapping data for both accuracy and fluency, as Student B reached the maximum number of words recited during the return to baseline cycle.

Finally, Figure 4 details the results of Student C. In the first B cycle of intervention, Student C had a PND score of 100 for accuracy and 0 for fluency, as Student C recited all 12 words in 3 minutes during baseline (words for fluency counted whether recited correctly or incorrectly); the second intervention cycle after the second A cycle (return to baseline) had 0% of nonoverlapping data for both accuracy and fluency, as Student C reached the maximum number of words recited during the return to baseline cycle.

Discussion

According to Mastropieri and Scruggs (1986), PND scores have shown to be strongly correlated with effective treatment results, and interventions with PND scores above 90 have been regarded as very effective. Because fluency did not take the correctness of student answers into account, the PND scores of fluency data do not have much merit with the effectiveness of the intervention. Therefore, this discussion will focus on the PND scores of the accuracy data.

All three participants had 100% of nonoverlapping data from the first baseline cycle and the first intervention cycle with accuracy; all participants showed improvement with sight word accuracy after receiving the integrated picture mnemonic sight word intervention. This data suggests that the integrated picture mnemonic intervention was highly effective for all three participants.

After the students returned to baseline, the PND scores were much lower, probably because the first intervention was so effective. This left minimal room for participants to improve, giving a ceiling effect. During the second cycle of intervention, Student A had a PND score of 80 for accuracy, reciting more correct words on four out of the five days of intervention data collection. However, both Students B and C reached a perfect accuracy score (12/12 correct words recited) during the return to baseline phase, which automatically gave them PND scores of 0, as there was no room to improve their perfect score.

While all three participants received services for speech and language impairments, Student A was the only participant with childhood apraxia. Childhood apraxia is a speech sound disorder that adversely affects speech production because of a miscommunication between the brain and the muscles in the mouth (ASHA, 2007; Zipoli & Merritt, 2017). Studies show that students

with apraxia are at greater risk for reading failure later in their educational career than other students with speech and language impairments (Zipoli & Merritt, 2017). However, the results of this study show extremely positive results with student A's sight word accuracy and fluency. This gives merit to using integrated picture mnemonics as a sight word intervention for students specifically with childhood apraxia. Perhaps this intervention could help students with apraxia not only to learn new sight words, but to retain and use them later in life to help with both reading and comprehension.

While Student C had a PND score of 100 for accuracy during the first intervention cycle, Student C had 0% of nonoverlapping data for the second intervention cycle. The PND score of 0 for the second intervention cycle was a result of mastering the maximum amount of correct words in the first intervention cycle, return to baseline cycle, and second intervention cycle. This is a limitation of this study, but one that the researcher did not anticipate given previous achievement data on the student. Although the intervention showed to be strongly effective according to the 100% of nonoverlapping data in the first cycle, there was no room for Student C to improve after the return to baseline cycle. The significant increase in Student C's sight word accuracy during the first cycle is probably because of the integrated picture mnemonic intervention facilitating memory retrieval; however, the decrease in effectiveness, since the student reached the maximum accuracy scores, may be because Student C's speech and language IEP is for comprehension and responding to questions, not rote memorization. Student C has a very difficult time comprehending passages or answering someone's question, but does not have problems with recall. Like Scruggs and colleagues (2010) and Wogelmuth and Cob (2008) found, mnemonic interventions can be effective with facilitating information recall, and Student C's results support that.

The effectiveness of the integrated picture mnemonic sight word intervention for all three students may be because the flashcards were meaningful to the students. Before making the flashcards, the students had a discussion led by the researcher about what they thought of when they heard each of the sight words. According to previous studies, integrated picture mnemonics can allow students to use pictures to learn words, taking emphasis away from their cognitive weaknesses, which, in this case, may be learning and retaining language (Mastropieri, Scruggs, & Levin, 1985; Scruggs, Mastropieri, Levin, & Morrison, 1987). The positive results of this study support the idea that this learning strategy helps students with speech and language impairments to rely on their strengths, and to make meaningful connections with academic content.

Future Research

Although this study shows the effectiveness of integrated picture mnemonics as a sight word intervention for students with speech and language impairments, future research should investigate the maintenance of learning. If students can retain the sight word knowledge weeks, months, or years after the completion of the intervention, perhaps students would show a great increase in their reading abilities as well. Future research should focus on how integrated picture mnemonic sight word interventions could impact the reading abilities of students with speech and language impairments.

Furthermore, it would be interesting to better understand how integrated picture mnemonics allow students with speech and language impairments to achieve sight word mastery independently. Because studies show that mnemonic strategies can allow students to effectively teach themselves (Fulk, Lohman, & Belfiore, 1997; Lee et al., 2006), future research should explore the effects of an integrated picture mnemonic sight word intervention that is more student-based. Instead of the researcher using a script to explicitly teach the flashcards, a follow up study could allow students to use the flashcards to learn the sight words themselves. However, a study like this would require the student to be able to sound out the sight words phonetically (which is impossible for many sight words due to the discrepancy between the spelling and the pronunciation of the words), or it would require the first cycle of intervention to be explicitly taught by the researcher and any subsequent intervention cycles to be independently studied by the students.

Conclusion

This study's integrated picture mnemonic sight word intervention shows positive effects of sight word acquisition for students with speech and language impairments. Although sight word accuracy improved much more than sight word fluency, there was less room for fluency to improve with all three participants as their fluency scores were high during the first baseline cycle. Because this intervention allowed students to make meaningful connections between unknown sight words and familiar images, the data shows positive results of sight word acquisition. While future research could be done to follow up this study, this study helps close a gap in research. In short, this integrated picture mnemonic sight word intervention with kindergarten students with speech and language impairments shows positive results on sight word acquisition.

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JERRY JOHNS PROMISING RESEARCHER AWARD WINNER

SUPPORTING LANGUAGE LEARNERS' WRITING IN SCIENCE CLASSES: A REVIEW OF RESEARCH AND METHODOLOGY

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Dr. Katherine L. Wright is the winner of the 2018 Jerry Johns Promising Research Award, which recognizes research that addresses significant questions for reading/literacy and extends understanding of its development, assessment, and/or instruction from early childhood to adult level. Dr. Wright is an Assistant Professor in the Department of Literacy, Language, and Culture at Boise State University. Her previous experiences working with both native-speaking and language learning students in the classroom motivate her research focused on developing strategies for engaging and supporting readers and writers. The objective of her research is to deepen our understanding of literacy development, specifically how helping students read, write, speak, and think like field experts can increase access and close achievement gaps. This review represents an initial step in expanding her previous research, which examined writing-to-learn interventions in science classes, to support the language and scientific knowledge acquisition of language learners.

Abstract

English Language Learners are a growing population in the United States and every teacher is responsible for providing equitable instruction that serves the needs of these students. In science classes, this type of instruction must include explicit instruction in

scientific writing. Research has demonstrated that specific instructional strategies can produce both writing and scientific content-area gains. However, research specific to supporting middle and high school language learners' remains sparse. The following review is a step in filling this research gap by providing an overview of what is known about language learners' scientific writing development, as well as how we may be able to quantify their growth.

Keywords: English Language Learners; writing instruction; science instruction; writing assessment

Introduction

English Language Learners are a growing population in the United States (Thompson, 2011) and every teacher is responsible for providing equitable instruction that serves the needs of these students (Taylor & Sobel, 2001). In science classes, this type of instruction should help students acquire content knowledge while simultaneously developing their disciplinary-specific language skills. Unfortunately, the most common literacy tasks integrated into secondary science classes (e.g., short answer and fill-in-the-blank questions; Drew, Olinghouse, Faggella-Luby, & Welsh, 2017) require little higher order thinking and fall short of engaging students in authentic scientific discourse (Moje, 2008).

In order to communicate complex concepts and ideas, scientists must use language in unique ways. For instance, Wright and Eslami's (2015) analysis of English and science texts used in an English as a Foreign Language setting demonstrated that sentences in science textbooks tended to have nearly double the number of words before the main verb. Science teachers, therefore, must integrate literacy into their instruction to support students' ability to read and write like scientists. Furthermore, research has shown that language learners whose science instruction embeds language development demonstrate significant growth in both science content and language acquisition (de Oliveira & Lan, 2014; Shaw, Lyon, Stoddart, Mosqueda, & Menon, 2014).

Integrating language in science classes must include explicit instruction in writing. While studies examining writing interventions with general populations have drawn mixed conclusions, the prevalence of positive effect sizes is too great to be attributed simply to sampling bias (Bangert-Drowns, Hurley, & Wilkinson, 2004). In science classes, research has demonstrated that specific instructional strategies (e.g., writing for authentic audiences, engaging in scientific argumentation, providing multiple opportunities to write; see Wright, 2017), can produce both writing and content-area gains. However, research specific to supporting middle and high school language learners' remains sparse.

The following review is a step in filling this research gap by providing an overview of what is known about language learners' scientific writing development, as well as how we may be able to quantify their growth. The first section describes the discipline-specific challenges language learners may face when writing and communicating in science classes. The second part identifies methods for measuring this growth and the factors contributing to and confounding language learners' development of scientific writing skills.

Discipline-Specific Demands of Writing in Science

The goal of science education should be to create a scientifically literate populace, but "science literacy" can have multiple definitions. According to Norris and Phillips (2003), we can think of science literacy in either the *derived* or the *fundamental* sense. The *derived sense of science literacy* refers to an individual's general knowledge about science, and their ability to apply that knowledge to the world. For example, a student with a strong derived sense of science literacy would be able to apply his or her knowledge of chemistry and biology to understand why yeasted dough rises. The *fundamental sense of science literacy*, by contrast, is focused on students' ability to read, write, and communicate in the professional discourse. Thus, a student with a strong fundamental sense of science literacy will be able to construct meaning from science texts and communicate their own findings to other scientists. These two skills are reciprocal, as learning more science content gives students the background knowledge they need to understand text, and being able to read and write as scientists provides students with access to scientific content.

When a scientist approaches a text, his or her goal is to gain a full understanding of what he or she reads, which requires "them to think about the phenomenon being presented in prose, to visualize it, and to manipulate it in formulas and equations" (Shanahan & Shanahan, 2008, p. 51). Likewise, when creating scientific text authors must be able to employ language in a way that will allow future audiences to visualize and manipulate the information being presented. Successful completion of this type of writing is also the product of transcription, text generation, and executive processes (Babygit & Stainthorp, 2011). Transcription involves spelling accuracy and writing fluency, text generation is the process of translating ideas into language, and executive processes include the self-regulation and attention necessary to complete the writing task. All three of these processes require working memory, and adolescent children have a limit to the pieces of information they can store in their working memory at a given time (Banikowski & Mehring, 1999). This makes writing especially

difficult for adolescent language learners, who often lack automaticity in many of these areas.

Because science texts serve a unique purpose, it is no surprise that scientific texts use language in unique ways. De Oliveira (2010) identified language demands that all students, including language learners, must learn in order to read and write in science. Namely, science writing utilizes technical terms, connectors with specific roles, everyday words with specific definitions, and noun groups. Science also has a habit of *nominalization*, or changing verbs to nouns, such as describing a “process of dissolution” rather than saying something dissolved (Shanahan & Shanahan, 2008, p. 52). These challenges have led many researchers to suggest that science and language instruction need to be integrated in early grades to prepare students for the demands of later science coursework (Tong, Irby, Lara-Alcio, & Koch, 2014).

Language Learners and Science Writing

Learning the language of science closely mirrors the process of learning English. All science students must negotiate between their home language (common discourse used with friends and family), instructional language (the phrasing used by teachers to explain concepts), and science language (the sophisticated language used by field experts) (Yore & Treagust, 2006). Language learners, who are already burdened with the complexities of a new language, will inevitably struggle to master science literacy without sufficient scaffolding.

According to Kintsch (1986), texts can help a reader develop either a textbase or a situation model. The former is focused on the semantic content of the text, and a strong textbase representation reflects a general coherence of the text. The situation model, by contrast, is the mental representation that develops because of reading a text (Kintsch, 1986). Creating a situation model is especially critical in science education, where texts describe experiments and cause/effect relationships essential to understanding science content (Shanahan & Shanahan, 2008). While Kintsch’s work focused primarily on the cognitive model a reader builds when reading a text, it can also be used to describe the types of writing that should be valued in science classes. While most writing in secondary science currently consists of short answers (Drew et al., 2017), ideally disciplinary writing should mirror that of field professionals (Warren, 2012). Thus, students’ writing should facilitate the creation of a situation model. The cognitive demands of reading and writing in a new language make it even more difficult for language learners to create an effective situation model. Therefore, researchers and

practitioners must make different considerations when implementing writing activities with language learners.

Huang (2004) takes a sociocultural perspective to argue that writing in science also allows language learners to be socialized in the world of science. This socialization involves acquiring content knowledge and learning the written discourses used to share that constructed knowledge. More specifically, language learners must understand both:

- (1) the message content presented in a discourse as opposed to the language code (or linguistic forms) in which the discourse is expressed;
- (2) the scientific principles to be employed when a variety of discourses are produced in the context of school science (Huang, 2004, p. 105).

However, language learners must master many language and linguistic skills before they will be prepared to successfully tackle higher order content knowledge.

Learning the word-level discourse demands is one of the first steps in engaging in a discourse (WIDA, 2014) and vocabulary development has long been accepted as one of the strongest predictors of language learners' academic performance (Saville-Troike, 1984). Shanahan and Shanahan's (2008) think-aloud study demonstrated that scientific vocabulary is particularly challenging as many words have both general language and domain specific meanings. This focus on vocabulary is mirrored in practitioner literature, where a large proportion of recommendations for integrating science and literacy instruction emphasize vocabulary development (Wright, Franks, Kuo, McTigue, & Serrano, 2016).

However, writing in science is more than just vocabulary, and some researchers argue that teachers' hyper focus on vocabulary is actually detrimental to the overarching goal of engaging language learners in authentic scientific rhetoric (Bruna, Vann, & Escudero, 2007). As researchers have established (de Oliveira, 2010; Shanahan & Shanahan, 2008; Wright & Eslami, 2015), scientists communicate with a specialized discourse that must be explicitly taught and modeled. This has led some to describe science students as "ScLLs" – Science language learners (Yore & Treagust, 2006).

Instructional Strategies for Supporting Language Learners' Science Writing

Just like their native speaking peers, language learners require direct instruction of writing strategies, hopefully leading to automaticity of writing and

freeing working memory to focus on science content and higher order thinking (Harris & Graham, 2013). Many of the accommodations that support language learners' writing are strategies that will support all learners. For instance, Merino and Hammond's (2001) qualitative study investigated how teachers in a successful bilingual program "provide access for language minority students in writing about their conceptual understandings of science concepts" (Merino & Hammond, 2001, p. 1). In order to act like scientists, the students needed to record in detail what happened in lessons. Teachers purposefully structured lessons into "mini modules" on each concept so the students understood what needed to be recorded (p. 10). Students were also provided with a structured worksheet for taking lab notes that would later be used to structure written lab reports.

Another intervention approach that has potential for both language learning and native speaking students is the Science Writing Heuristic (SWH). The SWH is an inquiry-based approach to science education that fosters science learning through laboratory activities and the use of written and oral argumentation (Nam, Choi, & Hand, 2010). Students are encouraged to ask questions, make claims, and provide evidence to learn science content (Hand, Wallace, & Yang, 2010) – in short, they engage in more authentic science practices in order to read, write, and think like scientists (Warren, 2012).

While few studies have tested the effectiveness of the SWH specifically with language learners, some evidence exists to suggest this would be an effective strategy. Hand, Norton-Meier, Gunel, and Akkus (2016) conducted a three-year mixed-methods study implementing SWH with over 700 students from diverse backgrounds, 23% of whom received free or reduced lunch. Their results demonstrated growth in both science and language, regardless of the students' backgrounds: the more important factor was the level of teacher implementation fidelity. This finding suggests that researchers need to focus not only on developing strategies for teaching language learners to write in science classes, but also how to best prepare science teachers to be effective instructors.

Evaluating Language Learners' Scientific Writing

While debates regarding the best way to support language learner's disciplinary literacy acquisition abound, one thing is clear: literacy development takes time. This truism is supported both by well-accepted theories, such as Cummins's (1981) explanation that it takes five to seven years to acquire Cognitive Academic Language Proficiency, as well as recent research, such as Maerten-Rivera, Ahn,

Lanier, Diaz, and Lee's (2016) study which did not show effects of a multiyear science intervention on language learners until year two. Thus, the field requires valid and reliable tools to evaluate language learners' discipline-specific growth in writing in order to monitor progress over time and guide intervention and instruction.

Models for evaluating students' writing in science class do exist, and many highlight the essential characteristics of an effective scientific writing measure. For example, in addition to quantitative outcome measures, Gunel, Hand, and McDermott (2009) created a standardized worksheet for teachers to evaluate writing and provide their students feedback. Rather than giving students numerical scores, teachers answered questions such as "Which parts of the explanation were especially easy to understand or helpful?" and "After reading this paper, what is your understanding of the goal and jobs of the circulatory and respiratory systems in humans" (Gunel et al., 2009, p. 365). This type of feedback provides some consequential validity necessary for classroom instruction, but may not provide language learners the explicit feedback they need to improve on a subsequent writing assignment.

Other measures are too broad to capture the nature of scientific writing. Rivard (2004), for example, created a rubric to qualitatively evaluate students' science writing. Scores ranged from 0 to 4 and two research assistants were able to reach relatively high interrater reliability (.89). Responses earning low scores were described as lacking "clarity" or being "difficult to understand", whereas high-scoring responses were "elaborate, complete", and demonstrated "a well-structured conceptual understanding" (Rivard, 2004, p. 429). This rubric could likely be used with other grade levels and content-areas; however, the criterion of "clarity" and demonstrating understanding appear to measure general writing quality more so than the specific characteristics of quality science writing.

When writing in science classes, language learners must "simultaneously cope with increasingly abstract content that uses increasingly complex academic language, while doing so in a second language" (Buxton et al., 2013, p. 348). Assessments of these students' scientific writing should be just as complex, honoring the unique challenges faced by language learners while providing feedback that will support both their *derived* and *fundamental* senses of science literacy (Norris & Phillips, 2003). In the following sections, I describe the variables that an effective assessment of language learners' scientific writing should evaluate, as well as identify factors specific to language learners that may confound their writing production.

Writing Variables to Measure

In lay terms, writing “consists of the ability to say things correctly, to say them well, and to say them in a way that makes sense” (National Commission on Writing, 2004, p. 19). Evaluating writing, regardless of the author’s language learning status, must attend to all aspects of writing. In scientific writing, this includes both general writing skills (i.e., the ability to say things correctly and well) as well as adherence to discipline-specific writing expectations (i.e., the ability to say them in a way that makes sense). While these variables are not specific to language learners, they warrant attention as many content-area teachers feel unprepared to teach and evaluate writing (Morgan, & Pytash, 2014). Strong measures of writing will not only provide students with the feedback they need to improve, but may also help combat content-area teachers’ historic avoidance of writing (see O’Brien, Stewart, & Moje, 1995) by offering support for assessment and guidance for future instruction.

General Writing Skills. Writing for effective communication requires knowledge of and adherence to specific forms and conventions. At the younger grades, teachers spend nearly half of time allotted for writing practice directly instructing basic writing skills (Graham & Harris, 2012). As these basic skills are essential to later written communication, they must be measured as confounding factors in writing interventions. That is, a lack of proficient writing skills will necessarily hinder the effectiveness of content-area composition.

The debate regarding best practices for assessing writing ability extends beyond the field of disciplinary literacy. Often times students’ writing skills are evaluated via a single piece of writing, with many researchers requiring students to complete the writing task in a single sitting (rather than engaging in the writing process). While the scores from such assessments generally have psychometric reliability, or consistency, they lack construct validity as the skills required for direct writing assessments bear little resemblance to those needed for real-world writing (Behizadeh, 2014). Furthermore, one piece of writing will rarely represent a child’s true writing ability (National Commission on Writing, 2003), as it does not allow students to engage in the writing process.

Klein and Rose (2010) took a different approach and measured students’ writing knowledge with traditional short answer test. This measure asked students general questions about explanatory and argumentative writing (the genres of interest in this study) as a measure of writing skills. While this approach might be useful for teachers hoping to identify areas for instruction, it would provide little explicitly feedback to students to develop their writing skills.

One example of a rubric designed for evaluating language learners comes from Serrano and Howard (2007). These researchers modified a rubric used by local language immersion teachers that examined the sub-components of composition (topic development, sentence formation, supporting details, and descriptive language), grammar (verbs, agreement, placement, and prepositions), and mechanics (spelling, punctuation, capitalization, and paragraph formation). While these researchers focused on elementary school populations, their rubric was detailed enough to identify and track the writing growth of language learners over the course of three years.

Disciplinary writing skills. Just as there are general skills that promote writing fluency across genres, there are also discipline specific writing conventions that must be learned. Within the field of science, students must be able to create sound connections between questions, evidence, and claims (Akkus, Gunel, & Hand, 2013)—skills that are not often addressed in English/language arts class.

Rubrics can be used to evaluate disciplinary writing skills, providing clear descriptions of expectations allows students to identify characteristics of writing in this genre. For instance, Hand, Hohenshell, and Prain (2004) used a rubric with 10 content-area categories, including providing definitions, explaining processes, and weighing the ethics of the topic. Such a tool would provide discipline-specific feedback to students and offer guidance for how to better engage in scientific discourse.

Christenson, Rundgren, and Høglund (2012) developed a model to evaluate student writing specifically about socioscientific issues (i.e., problems that include both social and scientific topics). These authors identified six socioscientific subject areas (sociology/culture, environment, economy, science, ethics/morality, and policy) which can be expressed using personal knowledge, values, and experiences. These variables were combined to make 18 categories (e.g., Environment/Value, Policy/Knowledge, etc.) to holistically evaluate students' construction of scientific argument. These authors found evidence of all 18 categories in student writing, supporting this model as a valid measure of student writing (Christenson Rundgren, & Høglund, 2012). This sort of feedback would support the development of students' *fundamental* sense of science literacy, as they would be learning how to apply their knowledge from science class to explain real world problems.

Strategies for evaluating language learners' scientific writing. Due to the diverse influencing factors, it is no surprise that the field lacks comprehensive measures of language learners' scientific writing. However, some researchers have

taken steps to honor these complexities. For instance, Lee, Mahotiere, Salinas, Penfeld, and Maerten-Rivera's (2009) divided the assessment of language learners' writing into separate rubrics, labeled "form" and "content" (Lee et al., 2009, p. 159). The form rubric evaluated conventions, organization, style, and voice whereas the content rubric was concerned with how well the student demonstrated knowledge and understanding of the target content. These two rubrics allowed researchers to demonstrate that a professional development intervention improved both students' general and discipline specific writing skills. More recently, Shaw, Lyon, Stoddart, and Mosqueda (2014) evaluated language learners' scientific writing using three analytic rubrics aimed at evaluating scientific argumentation, clarity, and use of scientific vocabulary.

In a similar approach, Huerta, Lara-Alecio, Tong and Irby (2014) developed a rubric for assessing the science journals of non-mainstream students, particularly ELLs. This rubric quantifies the academic language and conceptual understandings demonstrated in students' writing. These researchers first conducted a content validity study to ensure the rubrics measured the intended constructs. This process led to some refinement of the rubric, and later reliability estimates yielded sufficient results. Considered with the success of other similar rubrics (see Lee et al., 2009), these findings indicate that the content and language of language learners' writing must be considered and evaluated separately.

Sociocultural and Cognitive Influences

While general and discipline-specific writing skills may be at the forefront of most science teachers' minds, there are other variables worthy of consideration when working with language learners. Graham's (2018) model of writing blends sociocultural and cognitive perspectives to describe the development of writers and writing communities. As we continue to consider how to engage language learners in scientific discourse through writing, we must keep the sociocultural (e.g., native language and educational context) and cognitive (e.g., content knowledge and motivational) factors in mind

Sociocultural Variables. Writing in a second or subsequent language is highly dependent upon first language proficiency (Smith, 2004), and when students have the opportunity to read and write in their first language they are more likely to understand content when it is translated to English. Escamilla and Hopewell (2011) dispel myths that learning two languages simultaneously lead to language confusion. Furthermore, they argue that these students should be supported so that they may be both bilingual and biliterate. Research shows that children who are fluent in their native language acquire English at a greater

rate. In addition, being bilingual and biliterate results in economic and social advantages (Escamilla & Hopewell, 2011).

While often treated as such in research and literature, English Language Learners are hardly a homogenous group (Escamilla & Hopewell, 2011), therefore evaluating language learners' writing should vary, not only depending upon their length of residence, but also on their native language literacy skills and writing symbols. When learning a new language, many of the cognitive skills learned for first language writing transfer to composition in the new language (Perez, 1998). Therefore, a child who is literate in his or her first language will develop new language writing skills more quickly. Furthermore, if a student's primary language uses the Roman alphabet, he or she will have less difficulty writing in English as existing writing fluency will transfer to writing in English. Children who are learning an entirely new set of symbols, such as those whose first language is Chinese or Russian, will find writing in English much more labor intensive (Perez, 1998).

Cognitive Variables. As established by Graham (2006), an author's knowledge of the content to be described in writing greatly affects the overall quality of writing. Furthermore, the critical thinking required for writing is domain specific; writing skills without content knowledge will not contribute to learning (Willingham, 2007). Researchers have used general background knowledge as both predictor and confounding variables when measuring student writing. In addition, pre- and post-intervention information is essential to measure the success of writing-to-learn on increasing content knowledge. Both existing grades (Gunel et al., 2009) and researcher-developed tests (Cross, 2009) have precedent serving as quantitative measures of students' content knowledge. However, the format, scoring, and composition of these tests vary.

Not only must students have the skills and background knowledge to write, they must also have some sort of intrinsic or extrinsic force driving them to complete the task. A child's motivation to write can vary based upon the topic and situation, and therefore affective measures need to be utilized to help determine whether poor writing is a result of underdeveloped skills, lack of background knowledge, or poor affect.

Expectancy value theory helps to explain the components that make up motivation. This theory posits that students who expect they will succeed at the task at hand (e.g., *If I work hard, I will produce a good piece of writing*) and recognize the value of the task (e.g., *If I write this, I will learn more about science*), will be more motivated to complete the task (Eccles & Wigfield, 2002). As research has demonstrated that motivation can help students persevere through other

difficult literacy activities (Fulmer & Frijters, 2011), it follows that motivation is likely a key factor in language learners' writing achievement.

Conclusions

In a recent review of the role of writing in science education research over the past 25 years, Hand (2017) posits that while science educators now recognize the contribution of language, we still lack a strong understanding of its value in the process of learning science. This argument resonates even more strongly when we consider our language learning students. Ensuring that science education for language learners is equitable requires that we provide opportunities for them to learn to engage in authentic science discourse, which includes learning to write and communicate like scientists.

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SERVICE AWARDS

THE 2016 JUDY RICHARDSON LITERACY AS A LIVING LEGACY AWARD

THE STARS @ NIGHT FAMILIES SHINE BRIGHTLY: THE RESULTS FROM A FAMILY INVOLVEMENT LITERACY PROGRAM

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The Judy Richardson Literacy as a Living Legacy Award (begun in 2003) is awarded annually to an ALER member to support a literacy-related project related to an existing need in a community or school that typically is not supported by other public or private funds. The award supports projects and work in early childhood through adult literacy. Dr. Peggy S. Lisenbee won the award in 2016 based on her work described in this article.

Abstract

My experience working with families participating in the STARS @ Night Family Involvement Literacy Program illustrated what a difference parental participation can make for a child struggling to read. Parents attending as their child practices literacy skills using a Computer Assisted Instruction (CAI) reading program seem to increase children's motivation, confidence, and offer a better understanding of why their child needs to practice reading skills at home. In this article, experiences generated by offering parents of pre-K to 2nd grade children an opportunity to attend their child's Summer Tutoring and Reading Scholars (STARS) practice in a computer lab

using iRead (CAI) is shared. Additionally, themes identified from post-participation surveys of parents and children in this program will be discussed.

Keywords: Parental support, computer assisted instruction, iRead, motivation to read, struggling readers

Introduction

Children participating in an eight-week supplemental summer literacy program received free books from their teacher for their attendance and then asked her if they could have an ice cream celebration. too. After the teacher agreed to bring ice cream the next day, a boy asked her hesitantly, “Can I ask my mom to come to the celebration?” When the teacher replied, “Of course!”, the boy leapt into the air and exclaimed “All right!” This boy’s enthusiastic response to the teacher’s agreement was not only heartwarming, but also inspired the teacher to create the family involvement literacy program for these children and their parents.

Children in my Summer Tutoring and Reading Scholars (STARS) research were struggling readers practicing literacy skills during an after-school program on iRead. iRead is a Computer Assisted Instruction (CAI) reading platform created by Scholastic, Inc., which offer teachers additional instruction which supports children needing more practice to improve their reading skills. Many school districts are using CAI to support teachers, children, and families with opportunities to engage in supplemental literacy instruction in class and at home, especially for children struggling to read on grade level (Applegate & Applegate, 2006; Gu, Wang, & Mason, 2017; Reeves, Gunter, & Lacey, 2017).

The experiences generated by offering STARS to pre-K through grade 2 were positive. Since parents are children’s first and most important teacher, they are an important element of a child’s reading success. The intent of this article is to share research on the STARS @ Night program which was created for Pre-K to 2nd grade parents and children that participated in previous STARS research.

Literature Review

Research on family characteristics (Aikens & Barbarin, 2008), specifically parental support and involvement, showed a positive influence on struggling readers’ comprehension levels (Baker, 2010) and reading skills (Senechal & Young, 2008). Motivating factors (El Nokali, Bachman, & Votruba-Drzal, 2010; Reeves, Gunter, & Lacey, 2017) also revealed an overall “higher children achievement” (Henderson & Mapp, 2002, p. 25). Additional research on parents’ use of specific literacy interventions while helping their children learn to read found that this

type of tutoring supported larger gains in children's reading skills (Drummond & Stipek, 2003; Senechal & Young, 2008). Overall, children were more successful in school when their families are actively engaged and understood how to support the development of their child's literacy skills (Epstein, 2010; Drummond & Stipek, 2003; Gu, Wang, & Mason, 2017). When teachers provide reading assignments to complete at home with parents (Epstein, 2010) children were more successful in schools.

Some of the more popular CAI programs focused on literacy skills available for parents and teachers to use for supplemental literacy instruction (Applegate & Applegate, 2006; Gibson, Cartledge & Keyes, 2011; Houghton Mifflin Harcourt, 2019) are ABC Mouse, Starfall, Voyager Passport, LightSail, or iRead. CAI programs offer literacy skill practice that is engaging, interactive, and targeted on the five essential components of reading: phonemic awareness, phonics, vocabulary, fluency, and comprehension (NELP, 2008). CAI programs are also adept at making modifications based on the changing needs of each child as the child works on improving specific literacy skills, for example whether a child needs to continue practicing CVC words or they are ready to move on to practicing CVCe words. Houghton Mifflin Harcourt (2019) offers iRead as an engaging and interactive reading program for children to practice differentiated skills using the five essential components of reading both in their classroom and at home.

Houghton Mifflin Harcourt (2019) describes the design of iRead as a game-like learning environment for pre-K through grade 2 children to engage in supplemental literacy instruction. iRead uses formative and summative assessments embedded in the literacy instruction to utilize a K-2 reading skill progression aligned with grade level expectations (Houghton Mifflin Harcourt, 2019). The formative assessments evaluate a child's mastery (or lack of mastery) within each iRead topic to determine which reading skills each child still needs to practice. The differentiated reading instruction implemented through formative assessments continues until iRead determines that a child is ready to take a summative assessment. The summative assessments are aligned with iRead's K-2 reading skill progression to advance children to the next iRead topic (Houghton Mifflin Harcourt, 2019). A child's dashboard provides a visual display of the badges earned during reading practice, a visual list of the books read, a progression chart of a child's reading skill to date, and an avatar designed by each child to represent them in iRead's virtual world, Beastie Hall.

Beastie Hall introduces children to the faculty they will interact with virtually by aligning each faculty member with a reading skill. Ms. A and Coach Z instruct children on phonological awareness and alphabetic skills. Mr. Sounders provides instruction on decoding sounds in words. Mr. Seemore instructs children

on recognizing sight words while Mrs. Wordy provides instruction on strategies children can use to decipher patterns in words. Finally, Professor Readwell provides children with information and content books to read based on each child's K-2 reading skill level (Houghton Mifflin Harcourt, 2019). Beastie Hall and the faculty provide a framework for creating meaningful interactions with children as they practice reading skills.

Methodology

In the beginning of this article, I shared an experience completing research with struggling readers which gave me the idea to include parents in my STARS research. The STARS @ Night program offered parents of pre- K to 2nd grade children not reading at grade level at the end of the 2015-2016 school year an opportunity to not only attend their child's STARS practice but interact with their child and observe their child struggle and master reading skills during their iRead practice. iRead is a required supplemental reading skill practice in the midwestern school district where STARS @ Night was implemented for all pre-K through grade 2 children for 20 minutes every day.

The purpose of the STARS @ Night family involvement literacy program was to involve parents with their child as the child practiced reading skills on iRead to assess if parent participation improved their child's reading skills. STARS @ Night children were required to be previous participants in the Summer Tutoring and Reading Scholars (STARS) program at this same elementary school (apart from new pre-K children). Initially, STARS @ Night was planned to be offered once a month at the elementary school in the evening so parents could attend after work. However, the after-school director informed me that as parents turned in the consent forms to participate in STARS @ Night they stated that they wanted the time to be moved to when they picked up their child from after-school care. So, STARS @ Night kept the name but was held during the afternoon. The objectives of the STARS @ Night family involvement literacy program were to (1) engage parents in supporting their child's practice of reading skills using iRead, (2) increase struggling readers' literacy skills, and (3) determine the effectiveness of parental support for children struggling to read.

Participants

In spring 2017, four of the six children participating in STARS @ Night attended with a parent. Two mothers attended with their daughters, one mother attended with her son, and one father attended with his daughter. Two of the four parent-child dyads participating were Caucasian (mother-son and father-daughter) and

two parent-child dyads were Hispanic families (mother-daughter). All parents attending STARS @ Night understood English. The Caucasian parents also spoke English, but the Hispanic parents did not speak English instead letting their children translate and communicate for them. The additional two children participating were STARS children that requested to participate without their parents. Who can say no to children wanting to practice reading? One of the children was African American and the other child was Hispanic.

Research Methods

The STARS @ Night research was conducted through observations, parental surveys, children surveys, and structured interviews with both parents and children separately. For those parents unable to read or speak English, there was an undergraduate student researcher fluent in Spanish aiding these parents. The iRead topics were monitored using the dashboard to gather data about their current reading skill level over the course of their participation in the program.

Procedure

STARS @ Night was offered once a month for five months. Each session lasted approximately an hour and was held in an elementary school computer lab. Each hour of the STARS @ Night program began with a read aloud of a book the families would take home at the end of the hour. Both parents and children were invited and attended the read aloud at the beginning of each session each month. The books read at the five sessions were selected to expose families to a variety of genres. The books read and given to families were: an informational book, a biography, a graphic novel, a book written in Spanish, and *If You Give A Mouse A Cookie* by Laura Numeroff, an easy reader translated and written in Spanish.

In order to make all the families comfortable with not knowing how to sound out words accurately when attempting to read a book, I conducted the first read-aloud by reading a book written in Spanish. An important aside, I have never taken a Spanish class in my life. At the beginning of the read-aloud, I asked parents to correct me if I mispronounced any words in Spanish. My modeling of how to sound out words in a non-native language book went well since the parents corrected me politely, but directly, when I was not successfully sounding out a Spanish word accurately. This read-aloud set the stage for the next four read-aloud sessions since parents asked how to sound out English words when they were not sure how to say them accurately. The purpose of this modeling activity during the read-aloud was to assist parents and children with practicing how to sound out words so they could do this when they read books at home together.

After the read aloud and practice of sounding out words, which took approximately 10-20 minutes, children were asked to lead their parents to the computer lab to begin their 20 minutes of iRead practice. Parents were asked to let their child use iRead independently without assistance from the parent (which parents did most of the time) so any improvement in reading skills was the result of the child's effort. The STARS @ Night program created an opportunity for parents and their children to engage with iRead at the same time using two headphones and a headphone splitter. Headphone splitters were attached to the headphone jack on a computer which allowed both parents and children to use a set of headphones to listen to the iRead instruction at the same time. Parents heard the iRead faculty's directions and saw how their child answered. This experience was created to not only help parents understand their child's progress or lack of progress but also to assist parents with understanding how they can help tutor their child at home.

During the 20 minutes of iRead instruction, I monitored the students and implemented some tasks which had provided previous success to STARS children. I used my phone to begin a 20-minute timer but only announced that the timer had started after all the children were logged into iRead (this process takes a little less than two minutes). I also watched as each child's dashboard was displayed to record their current reading topic. After completing these two tasks, I walked around and silently offered each child a piece of gum. I continually walked around to observe children's screens so that when a formative or summative assessment began (a clock would display on the screen), I could point to the clock and without saying a word the children knew that how well they did during that timer determined if they would continue to practice the same skill again or move on to a new iRead topic. The last task was to give a five-minute, two-minute, and one-minute warning before the 20 minutes of time ended so children could attempt to finish a section, if they wanted to try. At the end of the 20 minutes, the children checked their dashboard and documented any changes in their iRead topic on a graph which showed their progress over time. Finally, before children and their parents went home at the end of our 45 minutes together, they were given the book read during the read-aloud that day so they could read it again at home.

Findings

The STARS @ Night program was analyzed both quantitatively and qualitatively. The quantitative analysis was derived from the change in each child's graph of iRead topics over the five weeks of the program (Figure 1). The increase in



Figure 1. Overall change in iRead reading skills for parent-child dyads participating in the STARS @ Night program with the number of days they attended the program listed after their identification code.

children’s reading skill based on the number of topics mastered in iRead ranged from an increase of three iRead topics after attending one day of STARS @ Night with a parent (20 minutes) to an increase of 11 topics in iRead after attending four days with a parent (80 minutes). The children attending with a parent increased more topics in iRead than the two children choosing to attend without a parent. Overall, the families with the highest attendance rates (four and five days out of five days offered) during the STARS @ Night program had children with the greatest gains in reading skill levels.

An undergraduate student fluent in English and Spanish interviewed all the parents and children after the STARS @ Night program concluded to gather the qualitative data.

Transcriptions of the parents’ comments resulted with the identification of themes relating to levels of confidence in a child’s reading skills and in motivational items which were identified as affecting a child’s interest in engaging in additional iRead practice.

Parental Motivating Factors

The parental surveys completed at the end of the program provided qualitative data about why parents chose to attend and engage in the STARS @ Night program. Parents comments such as “Because that way she feels more confident” and “Because it is more support for my child and me” suggest a need to instill confidence in their child while the child is learning to read. Parental interest with increasing their child’s confidence was the most common motivating factor

found among the parental surveys. Another common statement from parents was they were motivated to come in order to take home free books each week. Parents commented that they didn't have many books at home and were glad to have some for their child to read to them at home. An interesting motivating factor identified in the surveys was that parents thought that participating might also help them learn to read and speak English. Overall, comments about the program from parents revealed a perspective that parental involvement in their child's academic success was important to these parents, "It is a very good program", and "I see what he is doing at school".

Children's Motivating Factors

The post-participation survey responses from the children attending the STARS @ Night program shared similar thoughts to their parents, with a unique twist on what motivated them to attend. The most common factors identified from the surveys were the children wanted to become more confident in their reading skills and their parent forced them to participate in the program. These are two strong reasons which would motivate most children to participate. The children commented that they wanted to take free books home as well and, like their parents, they thought it might be possible for their parent to learn to read English while they were learning to read English. A social factor was identified which is developmentally appropriate for this age of child. These children were motivated to participate in the program to gain time and attention from their parent and/ or a friend attending the program. Children's comments which support this theme are, "Because I can learn how to read", "I like to read and it makes me know more words", "Because it's fun to read", and "Because I like reading". These are strong voices of children that really wanted to master the skill of reading and realized that this program offered them the opportunity to practice and improved their reading skills.

Discussion

The results, although limited by the extremely small sample size, support the effectiveness of parental participation when using CAI reading platforms to provide the literacy instruction for children struggling to read. Research showed that improvement in reading skills were more dramatic and effective when the school and home collaborated on reading interventions (Baker, 2010; Drummond & Stipek, 2003; Epstein, 2010; Gu, Wang, & Mason, 2017). Teachers typically encourage parents to read to their children and listen to their children read, but teachers could also share with parents the ability to access iRead (or any other CAI) from any computer whether at school, home, or a library (Houghton

Mifflin Harcourt, 2019). Listening to the voices of the families participating in this program, when combined with the quantitative data, seems to provide strength for teachers to share ways which motivate parents to participate in supplemental reading skill practice with their children outside of class time through the use of CAI platforms (Applegate & Applegate, 2006; El Nokali, Bachman, & Votruba-Drzal, 2010; Gibson, Cartledge & Keyes, 2011; Houghton Mifflin Harcourt, 2019; Reeves, Gunter, & Lacey, 2017).

An unexpected motivating factor and possible benefit for the Hispanic, non-English speaking parents participating in STARS @ Night was a possibility of learning how to read and speak some English by listening to computer assisted literacy instruction through headphones. This thought was shared by both the parents and children participating in the program. This presents a non-invasive and non-threatening method for teaching parents of young children a second language while providing support for children to practice and master reading skills with the support of both their parents and their teacher.

Since this is an extremely small sample, these results cannot be generalized. An implication from completing the STARS @ Night family literacy program is an understanding that this research needs to be replicated with larger populations for reliability and validity. Yet, the fact that four families were affected in a positive way by participating in a family involvement literacy program needs to be a consideration for possibly adding it to after-school or family support programs offered in the school. Whether the results can be generalized to the population or not, it turned out to be a worthwhile experience for parents and children alike.

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THE 2018 JUDY RICHARDSON LITERACY AS A LIVING LEGACY AWARD

LITERACY AS A LIVING LEGACY: WHAT DOES THAT MEAN TO ME?

Robin D. Johnson

Texas A&M University – Corpus Christi

Barrio = Community. Although I grew up with a mom who taught Spanish to high school students and spoke the language fluently, I would never have understood the original meaning of *barrio* without having been invited into the Barrio Writers (BW) community myself four years ago. For six days that first summer, I became immersed in the world of teens who didn't always feel like their voices were heard. I read and listened to the words written by authors of color who revealed a world beyond what I had ever known. I watched young adults take risks with their writing, collaborating, and sharing. I saw how writing healed wounds inflicted by peers. I saw the joy on the faces of writers whose words were valued and celebrated. During those six days in June, Barrio Writers transformed the writing lives of 15 youth who had never met before; Barrio Writers transformed me.

Barrio Writers was founded by Sarah Rafael Garcia in California in 2009. During the first summer, Sarah had 30 students. With the addition of chapters in California, Austin, Houston, Nacogdoches, and Corpus Christi, BW has since served many more youth from underserved communities, diverse backgrounds, and experiences.

Barrio Writers is a non-profit reading and writing program that aims to empower teens through creative writing, higher education, and cultural arts.

The goal of Barrio Writers is to empower the teenage community while establishing a self-sufficient educational program that will represent community pride, perseverance, and endless possibilities for following generations (About Barrio Writers, n.d.).

I was deeply honored to be chosen this year as the 2018 ALER Judy Richardson Literacy as a Living Legacy Award recipient for my work with Barrio Writers. I have always admired Dr. Richardson's contributions in the area of literacy education. I feel she embodies the idea that promoting literacy is crucial to creating change and making books available to students is one way to empower them, a philosophy that I also share and incorporate into my life and work. In a news article from the Virginia Commonwealth University detailing Dr. Richardson's University Award of Excellence, she is quoted as saying, "The tendency is to teach to the middle, and to assume that everyone comes from the same kind of background that we came from. My mission and my message are that we have to look at multiple texts, multiple tools, and a variety of individuals, and make sure our instruction is individualized to the greatest extent possible" (VCU to Honor, 2004). Two writing experiences have helped to shape my belief in that same message and mission.

First is the Abydos Literacy Learning (formerly known as the New Jersey Writing Project in Texas), a 3-week writing institute with subsequent trainings and conferences I attended with Dr. Joyce Armstrong Carroll and Edward E. Wilson, the Co-directors. They were my first encounters with how powerful a writing community can be in enhancing my life both personally and professionally. Then Barrio Writers grew my writing community to include more authors of color and diverse young adults who taught me that the world they navigate daily was not the world I was as familiar with as I should be. Sarah Rafael Garcia teaches the Barrio Writers that #yourvoiceisyourweapon. She has taught me that I have a story to tell and that my words are important. What does *Literacy as a Living Legacy* mean to me? It means we, as a community of educators, must advocate for all our students. We must give them multiple opportunities to read, write, and speak out. We must help them realize that their experiences are valued and that their voices matter.

For more information about Barrio Writers, please see:

TAMU-CC Barrio Writers Website: <http://barriowriters.tamucc.edu/>

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2018 ALBERT J. MAZURKIEWICZ ALER SPECIAL SERVICES AWARD

AWARDS ARE PRODUCTS OF TEAMWORK

Vicky Zygouris-Coe
University of Central Florida

I was pleasantly surprised when I received the news that I was the 2018 recipient of the *Albert J. Mazurkiewicz ALER Special Services Award*. I am truly honored to have been given this recognition by ALER, whose mission and leadership have impacted my work in so many ways.

As an award recipient, I was asked to share some of my work that led to this award. Before I share about my work, I first want to recognize one of my mentors, the late Dr. Timothy R. Blair, who encouraged me to attend and present at the College Reading Association, a.k.a ALER, in 2000. Tim spoke so highly of the organization, its leadership, audience, and mission. Dr. Blair, thank you for your guidance.

From 2010-2017, I had the honor of serving as the co-editor of ALER's *Literacy Research and Instruction* journal (along with my wonderful colleagues Sherron Killingsworth Roberts and Michelle Kelley). As part of that role, I had numerous opportunities to collaborate with authors, reviewers, the ALER Publications Committee, Board of Directors, and publishers. Serving as an LRI journal co-editor was not just about service to the organization. It was also about building professional relationships, shaping and promoting scholarship, and honoring the stellar record of the journal.

This award also connects with my research agenda and scholarship. My professional work in the U.S.A. started at Towson State University, and continued at Johns Hopkins University, the University of Florida, and at my current home for the past 20 years, the University of Central Florida (UCF). At UCF, I have been teaching undergraduate and graduate courses in reading education and I am also the coordinator for the Ph.D. in Education, Reading Education track. My research agenda focuses on reading in secondary grades, literacy professional development, and online learning. Since 2000, I have been collaborating with the Florida Department of Education in the development of statewide literacy initiatives for K-12 teachers. In 1999, I founded an annual literacy conference at UCF that attracts over 500 K-20 educators. In 2015, I had the honor of collaborating with so many wonderful literacy mentors in the redesign of the *2017 ILA Standards for the Preparation of Literacy Professionals*. I remain committed to, and excited about teaching, research, and service.

This award was an outcome of a team that has impacted my life. To my family, thank you. To all my mentors, thank you. To all of my colleagues and students, thank you. To ALER, thank you.

SOCIALLY JUST
LITERACIES
FOR THE “NEW
MAINSTREAM”

PERCEPTIONS OF L1 AND L2 PROFICIENCY: ANALYZING ADOLESCENT ENGLISH LEARNERS' LIVED EXPERIENCES WITH LANGUAGE

**Kelli Bippert
Andrea Elizondo**

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Abstract

Students identified as English language learners enter school with a range of language experiences not only in English, but in their home languages. The research questions in this qualitative study were 1) how are students positioned in their L1 and L2 use at home, school, and the larger community, and 2) what do students' positions reveal about their perceived proficiency in L1 and L2? Focus group interviews and student reflective journals were analyzed, revealing five overarching themes: evidence of subtractive educational mindset, a socially constructivist approach to language acquisition, anxiety associated with language use, positionalities in English, and positionalities in Spanish. Student perceived proficiency in L1 and L2 were dependent upon the environment and the language used (L1 or L2).

Keywords: English learners, socio-constructivist, subtractive, ELL, perceptions, positioning theory, anxiety

Introduction

The fastest growing population of students in the United States are English language learners (ELL). According to the National Center for Education Statistics

(NCES), the percentage of public-school students in the United States who identified as ELL was higher in fall 2015, showing 9.5 percent or 4.8 million students, compared to fall 2000, reflecting 8.1 percent or 3.8 million students (NCES, 2018). Unfortunately, there are many challenges ELL students encounter in acquiring a new language that need further exploration, specifically regarding the socio-cultural aspects of language development and the impact of anxiety on acquiring a second language. The ways that students, and language, are positioned in schools has led to “subtractive education” (Valenzuela, 1999), resulting in adolescent English learners experiencing an education focused on the development of English, with the exclusion and stripping-away of the students’ home languages. This subtractive education effectively devalues the language, culture, and experiences students bring to school. This has been systematically perpetuated in secondary education, both explicitly through school and district policies and implicitly through every-day cultural and social practices at school and the community. As a result, English learners’ experiences in the classroom and community can attribute to socio-economic and academic difficulties (Menken & Kleyn, 2010; MacIntyre, Baker, Clement, & Donovan, 2002; Valenzuela, 1999). As the number of English learners continues to grow, an understanding of the psychological, emotional, social, and academic development of ELL students is crucial if schools are to equitably meet the educational needs of all students.

The Purpose of the Study

This qualitative study examined students’ perceived proficiency as it relates to English language learners’ first and second languages based on experiences at home, school, and in the larger community. The study’s aim was to explore the positionality of ELL students in how they perceive their first language (L1) and second language (L2) use in the home, school, and community. The research questions guiding the study are:

1. How are students positioned in their language use?
 - (a) How are students positioned in L1 use at home, school, and the community?
 - (b) How are students positioned in L2 use in these various contexts?
2. What do students’ positions reveal about their perceived proficiency in language?
 - (a) What are students’ perceived proficiency in L1?
 - (b) What are students’ perceived proficiency in L2?

Theoretical Frame: Positioning Theory

Students who are English language learners enter schools with a range of language experiences not only in English, but in their home languages. As students navigate through different Discourses, they also must shift positions in an effort to meet the specific purposes and language needs in different contexts (Moje et al., 2004). These contexts can include interactions at home, at school, and in the community. Shifts in Discourse that occurs between these different language contexts differ for individual students, based on their perceived proficiency in language, and based on past experiences with each language (Moje et al. 2004).

As individuals become aware of the different ways in which people are sorted into social and cultural groups, they find their place within each of these arrangements, and participate in the practices that are tied to those groups. Positioning theory (Harre, 2005) describes how rights and duties are distributed, and can even change, among and between members of different social groups and settings. An individual's rights and duties may differ greatly, depending on the social situation and setting. For example, an adult teacher and an adolescent may implicitly and explicitly have certain agreed-upon rights and duties in the classroom; the adolescent fills the role of "student" in this social situation and setting, and would typically understand what his or her rights and duties are in this role. The individual student sees himself as a particular member of a distinct social group within the larger society, along with its associated implicit and explicit rules.

In the larger community, the same adolescent would be afforded rights and duties as well. These rights and duties would explain when and how a person can assume a particular role. One individual may have a right that describes their position of authority when it comes to mathematics ability at home, but may not have that particular right when it comes to applying mathematics concepts at school. At school, for instance, their duty may be that of learner. In this example, it becomes necessary for the student to ask for help, and rely on more skilled peers or teachers for assistance. These examples show how an individual's position can change depending on the social and cultural environment. For students, these positions may vary greatly between home, school, and the larger community. The positions that an adolescent assumes will directly affect how they perceive themselves within each setting (Davies & Harre, 1990).

Review of the Literature

The primary focus of this study was to understand students' use of L1 and L2 language and their language proficiency. The literature pertinent for this study

examined students' willingness to use their L2, and the students' experiences when using their L2. The socio-cultural aspects of language development were reviewed along with the effects on ELL students in the classroom. Lastly, an examination of literature on subtractive education, the lack of using the L1 or the student's cultural capital in the classroom, and how this type of subtractive education has negatively impacted ELL students.

Willingness to Communicate and Anxiety

As ELL students work to acquire their L2, they often experience embarrassment, lack of confidence, and anxiety associated with learning a new language. For instance, students' "willingness to communicate" (WTC) in a second language has been associated to various conditions, including student anxiety related to using the language (MacIntyre, Baker, Clement, & Donovan, 2002). Further research extended this parameter to include the anxiety and willingness to speak the L2 based on how prior language experience affected the student (MacIntyre & Charos, 1996; MacIntyre & Clément, 1999). For example, MacIntyre, Baker, Clement, and Donovan (2003) found that students participating in a French immersion program were provided more second language interactions, and thus had more opportunities to master the language than students in non-immersion programs. However, fundamental to this type of program is the willingness of students to use the language in authentic communication situations (MacIntyre et al., 2003).

MacIntyre and colleagues (1994) suggested that two key communication-related elements contribute to WTC: comprehension apprehension and perceived competence. Both of these were found important to L1 (MacIntyre, Babin, & Clement, 1999; McCroskey & Richmond, 1987, 1990) and L2 communication (Clement, 1986). Communication apprehension refers to the anxiety experienced in relation to real or anticipated communication (McCroskey, 1977). For the L2, this is known as language anxiety (Horwitz & Young, 1991). Anxiety and perceived competence combine to create a state of L2 self-confidence, and when there is a desire to communicate, this can result in a willingness to communicate (MacIntyre et al., 1998). Clement (1986) explains that L2 self-confidence to be a motivational process, one that links WTC to literature on motivation. Speaking has been found to be the most anxiety-provoking experience of L2 communication (Horwitz, Horwitz & Cope, 1986; Koch & Terrell, 1991; MacIntyre & Gardner, 1991). MacIntyre, Baker, Clement, and Donovan (2003) state the importance of being cognizant of classroom demands placed on students regarding language development,

and to not be consistently placing students in situations above their language levels. This can create discomfort and trigger anxiety.

Socio-cultural Aspects of Language Development

If the development of language is collaborative, where language is learned through an authentic language experience according to Vygotsky's socio-constructionist notion of learning (1978), then ELL students should be given the opportunities to develop their L1 and L2 in an environment that supports the use of language. This poses a problem for ELL students, as bilingual programs are often limited or do not exist in many schools that serve this population.

Vygotsky (1978) stated that learning utilizes a variety of development processes. This process best operates when students are interacting with one another in a cooperative fashion. However, this is difficult for ELL students if they are not given the opportunity to speak their L1 and L2, if they are unwilling to speak the L1 and L2, and they experience anxiety in doing so. Thus, if ELL students are experiencing anxiety to the point of not using the L1 or L2, their ability to acquire proficiency with either language is jeopardized. A study by Aljaafreh and Lantolf (1994) found that learning was a collaborative endeavor, and that it was necessary to involve others in the process. The authors explained that linguistic performance is related to the feedback given to a student's L2 use from an expert. This process eventually helps the novice take control of their own language development. The student moves away from relying on their teacher, and move towards relying on the self. Henceforth, all forms of feedback begin to become relevant for learning. Another study investigated the role of repetition in the collaborative discourse of students learning Spanish while working on their writing in groups (DiCamilla & Anton, 2000). The study found that after analyzing the students' collaborative discourse, there was evidence that cooperative work and repetition are functions found in the verbal interaction of students engaged in an L2 task. Viewed from a Vygotskian perspective, the authors found that repetition helped the students establish and maintain cooperation, crucial proximal development. Both the L1 and L2 become a socio-cognitive tool when working collaboratively. This supports students' ability to construct knowledge and help them work towards language proficiency (DiCamilla & Anton, 2000). The collaborative use of L1 and L2 has therefore been shown to support students in developing language skills that support classroom learning.

Subtractive Education

English language learners (ELL) need opportunities in school to develop their L1; however, language learning in schools has been found to be largely subtractive, only concentrating on developing the L2, English (Menken & Kley, 2010). Menken & Kley (2010) found that the students in their study did not experience the academic benefits that come from developing their L1 in school. This subtractive education complicates ELL students' language development as they lack the academic English to succeed in school (Menken & Kley, 2010). Further issues arise since the ELL student lacks the academic literacy skills to acquire language, and schools are not meeting the language and literacy needs of these students. As their research suggests, the education of these students must be additive especially regarding their academic literacy, and schools should provide students with appropriate language development as they move to higher grades, where literacy demands only increase.

A finding from Valenzuela's (1999) study of Mexican immigrant and Mexican American students revealed that teachers and administrators held deficit beliefs about these students. One such belief was that the students did not care about their education due to their style of speaking and dress. The students' cultural capital was ignored, and their cultural backgrounds were seen as deficits that needed to be subtracted from their education (Valenzuela, 1999). The author explains that schools fail to provide caring relationships that are valued by students, neglect bridging the cultural differences, and disregard student's style of dress, manner of behavior, or use of "Spanglish" instead of proper English. Valenzuela (1999) states that schools are being programmed to view the students' culture and language as detrimental to their academic success. In her study, she concluded that students felt they were being superficially misjudged, the schools' environment was uncaring, and students' needs and development were not considered (Valenzuela, 1999).

Subtractive schooling creates conditions that devalue the culture and language of ethnic minority students. Nguyen and Hamid (2017) studied eight ethnic minority students exposed to subtractive schooling. The students expressed feeling devalued, that their language and cultural identity were invaded, and that they did not feel comfortable constructing their own identity through social relations. The students decreased their L1 use due to ethnic discrimination, a by-product of the devaluation effects of subtractive schooling (Nguyen & Hamid, 2017). The author stated when the L2 is the dominant language and the L1 is devalued, the students realized that using their L1 was considered socially and academically unacceptable. The negative attitudes of the majority towards the minority students hurt the students' self-respect, especially since the

school fostered the culture and language of the majority and nourished subtractive schooling (Nguyen & Hamid, 2017).

Subtractive schooling involves adding the dominant second language and culture, and subtracting the cultural and linguistic resources brought to school by minority students, (Menken & Kleyn, 2010; Valenzuela, 1999). Schools may explicitly or implicitly devalue, or subtract, students' existing cultures and languages. This can occur through schools' implementation of English immersion programs, or by denying students the opportunity to use the L1 either socially or to support learning. It becomes problematic in that it affects students' ability to become proficient in using both the L1 and L2, in addition to creating a number of significant socio-emotional, and academic problems for these students (Valenzuela, 1999). In the process of schooling, students learn the second language at the expense of their L1, which is gradually replaced by the L2 (Winsler, Diaz, Espinosa, & Rodriguez 1999). The subtractive process is described by Skutnabb-Kangas (1996) as "killing a language without killing the speakers" (p. 90). The subtractive process is associated with many potential developmental risks for ELL students (Wright, Taylor, & Macarthur, 2000), making it critical for schools to alleviate subtractive education and foster a more supportive language development process.

Methodology

Participants

Three sixth grade students attending an urban south Texas middle school participated in this qualitative study. These participating students met the following criteria:

1. Identified as an English learner who would be administered the Texas English Proficiency Assessment (TELPAS) at the end of the 2017-2018 academic year
2. Placed in grades 6 through 8
3. Receiving one-on-one or small-group tutoring for language and literacy support during the 2017-2018 academic year

All three students were Hispanic English language learners (ELL) in the 6th grade. The study consisted of one male and two female students. Students had been receiving language and literacy interventions twice a week for the previous six months.

Data Sources

Students participated in two focus group interviews lasting between fifteen and twenty minutes each. The interviews occurred on Thursdays during students' usual tutoring time at the students' middle school. Students were asked open-ended questions designed to elicit narratives surrounding students' experiences with L1 and L2 in various contexts: home, school, and the larger community. The researchers collected observational field notes during the focus group interviews. Field notes were paired with interview transcriptions to help in the interpretation of student responses. After each interview, students completed reflective journal responses in the language of their choice reflecting on the group's discussion after each focus group interview. See Appendix A for the Focus Group Interview Questions, and Appendix B for the Journal Prompt.

Data Analysis

Paired transcriptions of student focus group interviews and observational field notes, and journal entries were analyzed in 4 phases. The data was broken into utterances, defined here as either a speech turn or narrative response. Table 1 illustrates how all four phases were applied to each utterance.

Phase 1: attribute coding. Attribute coding allowed the researchers to isolate and organize codes (Lofland, Snow, Anderson, & Lofland, 2006; Saldaña, 2016), in this case as they related to specific environments discussed by participants. Utterances were labeled according to the environment that was discussed by participants: school, home, or the larger community. In some instances, more than one environment was addressed, and these were included as a code in this phase. Environments were coded as the utterances were related to home, school, and/or community.

Phase 2: in vivo coding. In vivo coding (Corbin & Strauss, 2015) is useful for bringing meaning to utterances through the use of the speaker's own words. In vivo coding was used to help further describe the content and the context of the student's responses. Student utterances were analyzed based on their actual transcribed responses.

TABLE 1
Four phases of analysis

Phase 1	Phase 2	Phase 3	Phase 4
Environment (school, home, and/or community)	In Vivo codes (based on student responses)	Right or Duty	A priori analysis Value codes Themes

Phase 3: protocol coding. Using concepts from positioning theory, the next phase utilized protocol coding, also known as a priori coding (Saldaña, 2016). Codes were further identified as a “right” or a “duty” as described by the participating student. A response was marked as a right if the student’s response indicated a role of authority in relation to the language use, be it English or Spanish. An utterance was coded as a duty if it described a role that required the student take a subordinate position with English or Spanish use. For example, as students responded to focus group questions related to a language experience, the *in vivo* code was analyzed to identify their position (right or duty) with language use within their response.

Phase 4: value coding. Value codes were assigned to “reflect a participant’s values, attitudes, and beliefs, representing his or her perspectives or worldview” (Saldaña, 2016, p. 131). These value codes were based on the perceived values that students placed on English and Spanish, according to both the environment in which the language was used and the position (right or duty) revealed in each. For example, as students responded to focus group questions related to a language experience, the *in vivo* code was analyzed to identify their position (right or duty) with language use within their response. During this phase, these codes were finally collapsed into overarching themes: evidence of subtractive educational mindset, socio-constructivist approach of overcoming language difficulties, anxiety reactions related to in-school language difficulties, English positionality, and Spanish positionality.

Findings

This qualitative study focused on three English language learners in one middle school and their perceptions regarding L1 and L2 use. After careful analysis of the data, the following conclusions were made regarding the research questions. In regards to research question one, students perceived a negative positionality for using Spanish at home, being less-abled than other family members. Additionally, there was no evidence of positionality for using Spanish in the larger community or at school; this could be evidence of a subtractive mindset in that students had nothing to say about the use or benefits of Spanish in these environments. Furthermore, students perceived themselves as having a positive positionality at home in English usage; students are more proficient than other family members. Students also perceived a negative positionality using English at school. Lastly in relation to research question one, students perceived a positive positionality in the larger community using English when accompanying family. In relation to research question

two, students perceived themselves as limited Spanish proficient as compared to those they communicate regularly with in Spanish, such as family. However, students perceived themselves as not proficient in English in many instances in the school setting. Students also perceived themselves as more proficient with L2 than family members.

Evidence of Subtractive Mindset

Based on responses by experiences at school, home, and the larger community, one overarching theme that emerged was a subtractive education mindset. See table 2 for codes related to subtractive mindset. When students were asked about their Spanish usage at school, students had difficulty responding to when and how they used, and the benefits of using, Spanish at school. The students reported that only Spanish was spoken at home, where they felt comfortable

TABLE 2
Codes related to subtractive mindset

Env 1&2	A Priori codes	Value codes	Analyses
school/ family	Needs help with English at school	Comfortable with Spanish at home	Subtractive
school	Unsure of the benefit of using Spanish at school	Spanish may not be valuable at school	Subtractive
community	Positioned as helpful, useful with English among family	Spanish useful in community, but when accompanying family	Subtractive
community	Positioned as helpful with family using English	Spanish and English interchange valued in community, but when accompanying family	Subtractive
family	Positioned as English resource with family	English necessary when it comes to communicating with school	Subtractive
community	Positioned as English Resource with family	English necessary when it comes to communicating with school	Subtractive
community	Positioned as English Resource with family	English necessary when it comes to communicating with school	Subtractive
family/ community	Spanish not useful in community	Spanish preferable at home, English perceived as valued in community	Subtractive
community	Positioned as English resource with family	English necessary in community/ valued	Subtractive

using the language. There were many instances where students described using English to aid family to help them with communication with school, or out in the larger community. As one participant explained:

Student: Like, I talk Spanish in my house, but I don't really use it in the stores because there everyone talks English so I have to use it.

Nine out of sixty-five utterances were coded as reflecting this subtractive mindset. Spanish did not appear to be fostered in the school environment or in the larger community, making English language learning more subtractive than additive.

Socio-Constructivist Approach to Language Acquisition

The socio-constructivist approach to language acquisition was an important part of the experiences shared by the participating students. This often occurred when describing help received from fellow classmates. When talking about these experiences, students became more animated as they discussed this peer language support. Students mentioned that their classmates helped them when they did not understand directions or assignment, and when they needed some help in translation.

Researcher: Is there any students here or any teachers that you can go too [for help with English]?

Student 2: Yes, my friend Amber.

Researcher: Oh your friend Amber, how does she help you?

Student 2: Mmmmm, well she does not help me a lot

Researcher: Oh ok.

Student 2: But, sometimes

Researcher: Right.. but you feel like you can go to Amber

Student 3: Mmmmm...Hmmmm [yes]

Researcher: That's awesome, how about you?

Student 3: Mmmm.. Amber.

R1: Oh same girl? Same person?

Student 3: No.. (laughing)... I ask her and I'm like what does this mean and she's like tells me what that means and she helps me sometimes.

The socio-constructivist support for these three students was not only a cooperative effort in the classroom, but this also took place among social situations. See table 3 for all codes related to socio constructivist support. The students described friends serving as translators between other friends when English was not understood. Students were able to construct their language development in English, and although Spanish was not fostered within the curriculum, students were still using Spanish within different contexts. The students also described support from teachers, and could name specific teachers they regularly turned to when they did not understand their assignments in English.

TABLE 3
Codes related to socio-constructivist support

Env 1&2	A Priori codes	Value codes	Analyses
school	Positioned as less able English among at least one friend/ helper	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able English among at least one friend/ helper	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able English among at least one friend/ helper	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able English among at least one friend/ helper	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able English among at least one friend/ helper	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able English among at least one friend/ helper	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able in English	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Positioned as less able in English	Values socio-constructivist approach to language acquisition	Socio-Constructive
school	Needs help with English at school	Values socio-constructivist approach to language acquisition	Socio-Constructive

Anxiety Reactions

Anxiety reactions were noted when students described experiences with listening and speaking in English. Students stated that in social situations when English is spoken, when they do not understand they will pretend that they do. Additionally, they explained if the students' friends would speak English too quickly, they would pretend to understand. As one student described:

- Student: When [friends] are trying to tell me something, but I just pretend I know, but I really don't understand it because they talk like English so fast.
- Researcher: Oh my goodness. Does that happen at school sometimes?
- Student: Ummm yes.
- Researcher: Oh okay. So where does that like happen with? With like who?
- Student: With my friends.

The students found it necessary to pretend to understand English spoken among friends. Whether this action is based on not wanting to seem inadequate with English or not, there is potential anxiety reactions occurring during these instances. Students expressed that they have difficulty with vocabulary in English as well:

- Student: Mmmm like in school when I was talking to someone [in English]... and then I said something in Spanish and I was like oh... So, she was like "What? What'd you say?"
- Researcher: Oh, okay...okay. Did she understand it or no?
- Student: No, she didn't.

Other anxiety reactions included pretending to understand the classroom teacher if they spoke in lower volumes. For all codes related to anxiety, see table 4.

The participants also noted that when their teachers or friends speak English at school, they try not to draw attention to their inability to understand. As one student explained in a journal entry:

I have difficulties when I'm talking to my friends and they talk so fast or so [quiet] that I can barely hear them. Sometimes I do get embarrassed when I get caught and think I'm not listening or

TABLE 4
Codes related to anxiety

Env 1&2	A Priori codes	Value codes	Analyses
school	Positioned as not as capable in English	Anxiety reaction	Anxiety
school	Positioned as not as capable in English	Anxiety reaction	Anxiety
school	Positioned as not as capable in English	Anxiety reaction	Anxiety
school	Positioned as not as capable in English	Anxiety reaction	Anxiety
school	Positioned as not as capable in English	Anxiety reaction	Anxiety
school	Positioned as less able, face-saving behavior	Anxiety reaction	Anxiety
school	Positioned as less able, face-saving behavior	Anxiety reaction	Anxiety
school	Positioned as less able, face-saving behavior	Anxiety reaction	Anxiety
school	Positioned as less able, face-saving behavior	Anxiety reaction	Anxiety
school	Positioned as less able English among at least one friend/ helper	Misunderstanding Anxiety	Anxiety
school	Positioned as less capable at English, face-saving	Anxiety reaction	Anxiety
school	Positioned as less capable at English, face-saving	Anxiety reaction	Anxiety
school	Positioned as less capable at English, face-saving	Anxiety reaction	Anxiety
community	Positioned as less capable at English, face-saving	Anxiety reaction	Anxiety
school	Face-saving technique/ positioned as not proficient compared to peers	Anxiety reaction	Anxiety
school	Positioned as not as proficient as peers/ face-saving techniques	Anxiety reaction	Anxiety

ignoring them and just want to drop the subject. Or when someone asks me a question and I just don't understand me and they keep repeating what they said and just give up and ask someone else.

And as another student noted:

Sometimes my friends talk very fast and I do not understand them and I ask them to ask someone to give me what they said in Spanish to let me know.

What is evident from these experiences is that the students do not feel comfortable to admit their difficulties with comprehending in English, either in a social situation with friends, or within the classroom.

English Positionality

While students were positioned as the L2 learner at school, and occasionally needing support from peers and teachers, there was a positive L2 positionality at home among family members. Students were positioned as an authority in English, their second language, and served as a translator for family members in many instances. In fact, of the 65 coded utterances, 30 of these indicated a negative English positionality, all related to experiences at school. On the other hand, 10 utterances indicated a positive English positionality, all at home. The students explained that their positive position as an English speaker occurred when school documents were sent home from school in English. These documents included permission slips and report cards. As one student noted:

Researcher: How about at home, is there any time that you like you knowing Spanish has helped someone at home?

Student 1: Yes

Student 2: Yeah

Researcher: Like who?

Student 1: My mom and my dad too

Researcher: Ok. So what kind of things do ya'll help them with?

Student 2: Mmm. Like permission slips, like how to translate it.

Researcher: Oh, so sometimes you don't get [permission slips] in Spanish?

Student 2: Mm hm (yes). That's right

Student 1: Yes, I happen to translate too.

Researcher: Oh, ok. What kinds of...?

Student 1: Ah, field trips

The students mentioned that they help their parents with translation of English in the larger community as well, such as the grocery store. This placed the students in a positive position regarding English, as they served as the English resource for their families.

Spanish Positionality

The students expressed the benefits of using Spanish and English interchangeably, but only when they are with their family out in the larger community. The students described using English as needed when helping their families negotiate in the larger community, but did not express any benefits to using Spanish in this context. Among the 65 utterances that were coded for analysis, eleven indicated a negative Spanish positionality among family. There was no positive Spanish positionality evident in this data.

Students described themselves as being less-proficient than others in their home, positioning themselves as a “language learner” when it came to Spanish among family members at home. This negative Spanish positionality was illustrated through students’ descriptions of the help they received from parents and others in the home setting, and they were quickly able to identify others in the home who they felt were proficient with Spanish:

Researcher: Who do you know that's like a friend or a family member who is really strong Spanish speaker.

Student: All my family

Researcher: All your family, anybody in particular?

Student: My mom

Researcher: Your mom, ok so, do you like, so in what ways does that help you?

Student: Yea

Researcher: Ok, in what ways?

Student: She like teaches me things that I did not even know.

Students discussed receiving help with using Spanish by these more knowledgeable others in the home. Students also described how their parents used Spanish when reinforcing social, cultural, and community expectations. Students were positioned as learners of Spanish, as less competent with Spanish language skills than others in their families.

Discussion

The participants in the study explained their experiences in relation to their L1 and L2. The data revealed that students are experiencing subtractive education regarding the development of their L1. This was evident in that students did not regard Spanish as useful in school; participating students were unable to describe an experience where Spanish was valued or found useful in the school setting. Students who are English language learners (ELL) need opportunities in school to develop their L1 to help support content language acquisition across the disciplines, particularly in secondary education where literacy and content area learning demands increase (Menken & Kleyn, 2010). By utilizing students' existing language, experiences, and cultures, students can develop important concepts in their native language, while learning second language skills. This is only one small step toward reducing the effects of a subtractive education environment in our schools.

Difficulty with L2 can result in anxiety that can be detrimental to further language development. This anxiety was illustrated through participant students' interview and journal responses, revealing a reluctance to seek help when comprehension in English was difficult. Participating students described how they would pretend to understand the L2 when they found comprehension challenging with friends or teachers. This anxiety, which can lead to a reduced willingness to communicate (McCrosky & Richmond, 1991), can reduce language use in and out of the classroom. Socio-constructive learning can only occur during collaborative and social interactions (Vygotsky, 1978). Using both first and second languages; receiving feedback from peers, teachers, and family; and being encouraged to use the student's home language as a learning tool are additional ways that schools can support content and language learning for ELL students. This is particularly important for students in this study, who were unable to identify how Spanish could benefit their learning at school. This increased emphasis on L1 and L2 language use among students can help reduce language anxiety (Horwitz & Young, 1991) that could result in possible socio-social effects that may result (Valenzuela, 1999). Whether it is anxiety, confidence, or other factors,

it is important to understand what ELL students are experiencing and help them overcome these obstacles to language development.

Positioning theory provided a framework to guide this study and found that students identify with both positive and negative positions in relation to the L1 and L2. These unique positions provided a closer examination into the students' perceptions how language was used at school, home, and in the larger community.

The findings in this study suggest that these three students did not perceive themselves as proficient in English, except in their role as translators among family members. Students perceived their positive English positionality as important for helping their families at home and in the community. On the other hand, students had difficulty describing the ways that Spanish had benefited them at school or the greater community. Positioning theory (Harre, 2005; Davies & Harre, 1990) helped us to consider the roles that these students assumed, based not only on the environment, but on the language used in each environment. Combined with language anxiety, limited opportunities to use L1 and L2, and subtractive educational circumstances, we can better understand how students may perceive their L1 and L2 language proficiency through this deficit lens.

Implications

The implications for future teaching include the importance of creating a classroom environment where ELL students are encouraged to use their L1 to develop their L2, as well as a classroom that fosters students' cultural capital and implements culturally-responsive instruction. Teachers should offer ELL students the opportunity to work collaborative on assignments to assist further in their academic language development. It is also imperative that teachers are consciously aware of ELL students' feelings, confidence issues, and anxiety that can negatively impact language development. In addition, it is important for schools to recognize the subtractive education that may be occurring in the classrooms, especially in respect to ELL students.

Limitations

The findings in this study were based on focus group interviews and journal reflections from three middle school students identified as English language learners. One limitation in this study is the small number of student participants. Additionally, all of the study participants shared the same first language, Spanish, which presented a limitation as only the experiences of students with Spanish as a first language provided data for analysis in this study. These three participants

were all sixth graders attending the same urban middle school, which limits the experiences within the same school and community. Another limitation to the study is the small number of data sources, which included two focus group interviews, paired field notes, and journal reflections after each interview session.

The issues investigated need further exploration to describe the relationships between second language acquisition, positionality, anxiety, and socio-constructivist approaches to language learning, and effects of subtractive educational contexts. This study scratches the surface, and our research team is currently conducting further investigations into the experiences of ELL students to provide a more comprehensive description.

Conclusion

This study found that subtractive education contributed to the student's willingness to use their L1 to support learning in school. Unfortunately, rather than asking for assistance from peers and teachers, students indicated that they preferred to pretend to understand the L2 when they needed clarification on assignments and instructions. In this study, it was clear that students did not feel comfortable in situations where they needed to rely on their understanding and use of L2. Moreover, L1 was not utilized in the classroom or in social situations likely due to language anxiety. This anxiety also resulted in students occasionally choosing to not engage in language use with peers and teachers, contributing to fewer socio-constructive learning opportunities. Further research is needed to further explore how these actions related to anxiety and subtractive education impact language development.

There is limited research on the impact of anxiety and subtractive education, and how they affect second language acquisition, particularly with middle school students. The existing literature expresses difficulty in measuring specific factors that impact L2 language development, and conclude that there is still a need to explore this area. It is equally important to understand all the factors that hinder L2 language development, and to work toward solutions to help ELL students. Educators and policy makers need research to understand what ELL students need regarding their academic, emotional, psychological, and social development. It is time to start considering the negative impact associated with dominant language immersion, and identify new ways to support ELL students' culture, identity, and future success. To meet the needs of all students, educators and policy makers should encourage a school culture that embraces and honors the languages and cultures that students bring to school. By taking an additive, rather than subtractive, educational focus, schools can more equitably meet

the needs of English learners. Schools can work toward supporting, as opposed to adversely affecting, English learners' socio-emotional health and academic achievement.

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APPENDIX A

Focus Group Questions

Focus group questions be answered in round-robin fashion, beginning with the first student to volunteer an answer to the opening question. As each student responds, other participants have opportunities to comment or ask questions. The facilitator (PI or Co-PI) will prompt any students who had not had an opportunity to share a response to the opening question.

Have you ever had a difficult time trying to talk to somebody/ be understood/ understand others in Spanish at home?

Explain...

Can you give an example of...?

What is it like when you need to use Spanish when you're shopping, or around friends? Was there one time that you can remember when this happened that stands out in your mind?

Explain...

Has anybody had something similar happen?

What have been your experiences using Spanish at school? What memories do you have when you have had to use Spanish in school?

Explain...

Has anybody had something similar happen?

How has using Spanish been helpful for you? Who can think of a time when this has happened?

Explain...

Can you give an example of...?

Who do you know that is either a friend or family member who is a really strong Spanish speaker? Explain.

Who [in your family/ among your friends] is the strongest in English? Explain. How about you? How would you rate your ability in Spanish in comparison to others you know who speak the language? How about English?

APPENDIX B

Journal Response Prompt

The journal prompt will focus on stories that emerged from the focus group interview/discussion.

Today's discussion topic was_____.

Think about what you and your group talked about today. What event from your life does stand out the most to you? You can write about something that you talked about, or you can write about something else. Or, what would you like to add to what was discussed today?

THE LANGUAGE, LITERACY, & CULTURAL PRACTICES OF HIGH-QUALITY MIDDLE SCHOOLS

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Abstract

Schools are experiencing growing diversity within English as a Second Language (ESL) populations and are recognizing that there is no one-size-fits all solution. This article relies on data from a qualitative multiple case study to describe the approaches that middle schools recognized as Texas Schools to Watch were using to meet the language and literacy needs of their specific English Learner (EL) populations. The schools provided a wide-ranging look at language, literacy, and socio-cultural approaches for responding to the needs of unique ESL populations.

Keywords: English as a Second language, adolescent literacy, English learner, middle-level, Schools to Watch

Introduction

As a teacher of English learners (ELs), the most common question I am asked is, “How can you teach kids to speak English if you don’t speak Spanish?” This question reflects one of the largest misconceptions about English as a second language (ESL) instruction. In ESL instruction, language is acquired through content learning, non-verbal communication, inquiry experiences, and connections between home and school languages and literacies (Haneda, 2006; García & Wei, 2013; Thomas & Collier, 1997). However, Texas ESL programming provides little guidance to middle-level educators as to how schools should

structure their instruction to help EL students be successful in acquiring language through content.

According to Menken & Solorza (2014) and Olsen (2010), public schools are not meeting the needs of ELs. State accountability measures support their assertion, as it shows that Texas's EL population continues to perform unsuccessfully on assessment and accountability measures (Texas Education Agency, 2015). Educators are currently working to find new ways in which to support this population, but with research agendas that focuses on what schools are doing wrong, schools have struggled to move beyond what not to do to a workable understanding of what practices they should implement to support ELs academic success.

This article describes the ways in which high-quality middle schools are structuring their ESL programs to meet the needs of diverse populations, specifically linguistically diverse populations. I believe that providing a range of descriptive scenarios from across the State will allow school administrators and educators an opportunity to access campuses that are similar to their own and consider what might work in their own educational context. This information is key to supporting schools in their "daily fight for social justice" (Duncan, 2010, n.p.). Each school's student population is unique, which means that their fight for social justice must be unique and personal. This study aimed to provide schools with a variety of tools to select from to meet the needs of their particular social justice fight.

Theoretical Framework

This qualitative multiple case study (Stake, 2006) was positioned within the middle-school concept (National Middle School Association & Association for

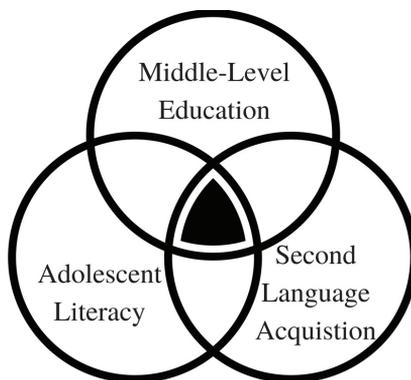


Figure 1. Intersections of educational theories guiding study

Middle Level Education, 2010). This We Believe (2010) is both a position statement and a guiding theory for high-quality schooling of early adolescents. In addition to other items, it includes the four essential attributes of high-quality middle schools: a.) academic excellence; b.) developmental responsiveness; c.) social equity; and d.) organizational structures and processes.

This study aimed to examine the intersections of the middle-level education, adolescent literacy, and second language acquisition. All three of these components fit into the middle-school concept's essential attributes and it was thereby used to ground the study, as well as provide structure for the procedures identified in the methodology section.

Literature Review

While the study that this data sample was drawn from examined the intersections of middle-level education, adolescent literacy, and second language acquisition, this paper will focus primarily on the findings related to language and literacy. Therefore, the review of related literature will focus on common themes important across the fields of adolescent literacy and second language acquisition.

According to Alvermann (2002), adolescents face several new demands when approaching texts. Some of these demands are skills that must be applied when approaching texts such as summarizing, comprehension monitoring, and understanding text structure. Others demand a greater cognitive challenge for students such as the ability to analyze the construction of the text including the author's purpose, the interests that the texts serve, the navigation of multiliteracies, and application of the text to real-world problems (Elkins & Luke, 1999; Moje, Overby, Tysvaer, & Morris, 2008). Indeed, the demands of adolescent literacy are complex and multi-layered, moving far beyond the conception of adolescent literacy as remediation for those who did not master foundational literacy skills in childhood (Biancarosa, 2012).

Once students reach schooling at the secondary level, texts become increasingly complex. The in-school texts that they encounter are often specialized readings that require content literacy skills (Moje, Ciechanowski, Kramer, Ellis, Carrillo, & Collazo, 2004). As students progress into the content-based learning structure of secondary schools, they are faced with a variety of specialized knowledge and discourses. This can present a particular challenge to learners, as they may have little experience with the discourse and may lack prior knowledge with which to anchor their new learning (Brozo, Moorman, Meyer, & Stewart, 2013; Fang, 2014). Therefore, it is essential that middle-level educators be prepared to provide literacy instruction in a manner that is

developmentally responsive to early adolescents. This may include instructional approaches such as the use of inquiry-based learning (Wells & Mejia-Arauz, 2006), exploratory talk (Barnes, 2010; Mercer & Dawes, 2008), authentic learning tasks (Alvermann, 2002; Smith & Wilhelm, 2002), and leveraging funds-of-knowledge (Moll, Amanti, Neff, & Gonzalez, 1992).

When designing instruction for adolescent readers and writers, Fisher & Ivey (2006a) claim that the instruction should take a comprehensive approach to literacy development rather than focusing on isolated skill-by-skill mastery. This approach is very similar to the mindset of the middle-school concept in which goal-setting for individual mastery and instruction that targets the needs of the whole student are valued (AMLE, 2010). When designing holistic instruction, teachers should prepare for students to engage in real, meaningful texts for a variety of purposes, in a variety of contexts. As students engage in authentic literacy practices for their goals and purposes, on-going assessments should occur across these same lines (Fisher & Ivey, 2006b). By assessing students' engagement with texts, students develop meaningful ways to anchor their knowledge and develop their behaviors as successful readers and writers (Alvermann, 2002; Biancarosa, 2012; Fisher & Ivey, 2006b).

When considering literacy practices that support culturally and linguistically diverse adolescents, one must discuss the use of culturally relevant pedagogy and culturally relevant texts (Bishop, 1990; Ebe, 2012; Lao & Krashen, 2000; Tatum, 2011). According to Bishop (1990), culturally relevant texts can provide mirrors or windows into the lives and experiences of the students in our classrooms. In literature circles or book clubs, the use of texts that reflect the experiences of the students in the class can provide a "window" experience for a student who is trying to understand the experience of a peer. The use of culturally relevant texts in the classroom not only helps to build cultural competence and positive classroom environments, but it also allows students to progress in their literacy development (Ebe, 2012; Tatum, 2011). According to Ebe (2012), when students are presented with texts that are culturally relevant, they are able to make connections easier, which leads to increased levels of proficiency in English comprehension. Similarly, Tatum (2011) described a process for selecting culturally relevant texts based on a set of criteria. Of those criteria, three of the most interesting ones are: 1) Who does this text serve? 2) Will I love to teach this text? 3) Will this text serve all of the students in my classroom?

As demonstrated by the selection of criteria above, Tatum (2011) selected culturally relevant texts for his class based on (a) the purpose of the author; (b) the message within the text; (c) the purpose of teaching the text; (d) the level of

enjoyment for both teacher and students; (e) and consideration of the students currently enrolled in his class. Attention to text selection for literacy development is important, because it is not static. According to Tatum (2011), this type of literacy instruction does not honor a canon; there is no “ninth grade reading list.” Instead, the teacher is empowered to select texts based on the demographics of his population, the needs and interests of the students in his class, the skills or concepts to be mastered, and the experience of engaging in a text as a community of learners (Ebe, 2012; Tatum, 2011). In this instructional approach, the teacher demonstrates respect by honoring the students’ cultures and knowledge, viewing students as capable of doing literacy, and by providing high, yet attainable goals (Haneda, 2006). The research question guiding this study is:

1. What literacy and language approaches are *Texas Schools to Watch* middle schools using to meet the needs of their specific English Learner (EL) populations?

Methodology

The intent of this qualitative multiple case study (Stake, 2006) is to describe what practices the participants, stakeholders in high-quality Texas middle schools, are engaging in as successful design and/or implementation of their ESL programs. The study focuses on the ways in which the criteria of the Schools to Watch (STW) rubric are fully integrated throughout the campus and specifically how these criteria are relative the ESL program. The study is not intended to prove that specific practices are applicable in all educational contexts. Rather, it is meant to describe a variety of scenarios and solutions to meeting the criteria of high-quality middle school instruction under STW while serving specific EL populations. While the EL population in Texas is still majority Spanish-speaking (TEA, 2016) schools in Texas serve a diverse EL population depending on location. Similarly, there are variety of factors and approaches to meeting the high-quality status under STW.

Site Selection

The multiple cases (Stake, 2006) include four middle schools in Texas. The participants were selected based on their designation as a Texas STW campus and successful English as a Second Language (ESL) program performance based on state data. The study was conducted over a six-month period spanning from September 2016 - February 2017. Each campus was visited once for the one instructional school day. Following the evaluation criteria of *Texas Schools to*

Watch (2011), a colleague and I collected data including a variety of interviews and observations over the course of one instructional school day.

Selection of participants. At the time of the study, forty-six campuses had historically been named Texas Schools to Watch Campuses. The narrative application for forty-four of these schools were selected for document analysis. Two of the applications were not included, because they no longer existed in the Texas Schools to Watch archives. Of the current Texas Schools to Watch campuses, three were selected for site visits. I attempted to select sites that were geographically diverse, that had a statistically significant English as a Second Language (ESL) population, and that showed upward progress in ESL standardized test performance. On each campus, four types of panels were selected for interviews: campus leaders, teachers, students, and parents. The campuses self-selected their participants for these panels, however, I did specify that students included in the study must be identified as ELs, be currently enrolled in the ESL program, and be fluent in either English or Spanish. Unfortunately, no parents opted to participate in the study.

Data Collection

As mentioned previously, this study relied on interviews, observations, and documents. The collection of this data was conducted by a colleague and myself, the primary researcher. The colleague who assisted me with this study was an ESL educator who had an interest in supporting this project as a part of her own professional development. She is fluently bilingual in English and Spanish. Her role during the site visits was to provide data collection support, to act as a translator if any participant preferred to speak in Spanish, to maintain a reflexive journal, and to support peer debriefing.

Artifacts. To begin, I collaborated with the directors of *Texas Schools to Watch*, to gain access the *Texas Schools to Watch* applications. These were shared via DropBox. Additionally, I gathered demographic and assessment performance data for the site visit campuses from the Texas Education Agency (TEA) website using the Texas Academic Performance Report (TAPR). During the site visits, photographs were taken of examples of classroom artifacts such as anchor charts, word walls, and learning targets. Some teachers also provided copies of instructional artifacts such as personal anchor charts and reading challenges. Examples of these will be shared in the findings.

Interviews. A total of three interview panels were conducted during each school visit during this study. Using the *Schools to Watch* protocol, I used

TABLE 1
Methods

Method	Data Source	Details
Classroom Observations	Site Visits	- Content-area and elective courses were observed for approximately 15 minutes each - Total of approximately
Student Semi-Structured Panel Interviews	Site Visits	- 1-5 students - 15-30 minutes per interview
Campus Leadership Semi-Structured Panel Interviews	Site Visits	- 1-4 campus leaders - 30-45 minutes per interview
Teacher Semi-Structured Panel Interviews	Site Visits	- 1-4 teachers - Approximately 30 minutes per interview
Artifacts	Site Visits; Application Data Set; TAPR Reports	- Publicly displayed instructional tools and student work (word walls, anchor charts, learning targets, etc.) - 44 Texas STW Applications - 4 TAPR Reports

semi-structured interviews to guide the interview panels. At each campus, I conducted one interview panel with each of the following groups: (a) administrative/ leadership team; (b) teachers; (c) students.

Each interview lasted between 15-45 minutes, with the student panels taking less time than the leadership and teacher panels. The interview panels consisted of 1-4 participants each. The data gathered during the interviews was recorded using hand-written field notes. My colleague and I maintained these field notes. The interviews were used to gain a clearer picture of the campus ESL program, to identify what to look for during the classroom observations, and to clarify and verify data gathered throughout the day.

Observations. Depending on the design of the ESL program, observations varied at each campus. My colleague and I sought to use the *Schools to Watch* rubric to guide observations of classes in which ELs were enrolled. These classes primarily consisted of content-area courses, ESL courses, AVID, and a few electives such as choir and theater. All data collected during the observations

was collected using hand-written field notes. Two sets of these field notes were created, one maintained by my colleague and the other by myself. Each observation varied in length from five to 30 minutes depending upon what was happening in the classroom. If students were testing, the observations were much shorter, whereas classes that were engaged in collaborative work resulted in longer observations.

Data Analysis

This study utilized Braun & Clarke's (2006) thematic analysis of the data collected across the application data set, as well as the four site visits. As the study's bounded case was *Texas Schools to Watch*, this study began with a document analysis of the *Texas Schools to Watch* applications of 44 out of the 46 schools who have received the *Texas Schools to Watch* recognition.

The available applications were coded using thematic analysis (Braun & Clarke, 2006) to determine the patterns of practice among high-quality middle schools. Next, four campuses were selected for site visits. The codes from the application data set were used to drive the thematic analysis of the observation and interview data gathered from the site visits, from which codes were collapsed and themes were determined. Therefore, the findings are presented by discussing the information from the application data set, followed by findings from each case, and concluding with the themes determined across the data corpus (Braun & Clarke, 2006).

TABLE 2

Responsive Instruction Coding

Theme: Responsive Instruction	
Code	Example
Language and Literacy Strategies	<ul style="list-style-type: none"> • comprehensive literacy approach - use of anchor charts, word walls, graphic organizers, variety of texts, etc. • teachers expected to embed ELPS as a normal part of their lesson planning • "Jumpstart program allows incoming 6th grade students to get a 'jumpstart' on academic and content vocabulary that will be encountered in the first six weeks of school." • "Vocabulary is a focus for us. We do a word study in each unit that includes Greek and Latin roots. This has been extremely helpful to our students, especially in science."

Credibility was supported through informal member checks during interviews and observations, triangulation of data using three data different types of data sources, and peer debriefing. Confirmability and dependability were accounted for through an audit trail that included the data sources, as well as the maintenance of reflexive journals by my data collection colleague and myself.

Limitations

This study is limited by a small sample size. At the time of the study, there were thirty-two schools that were actively recognized as *Texas Schools to Watch*. Of those campuses, only three agreed to participate in the study as site visit campuses. Additionally, no parents opted to participate in the study, so there is no data regarding their experiences and perceptions. Additionally, the study is limited by the researcher's language. The primary researcher was a monolingual English speaker and the data collector was a bilingual English-Spanish speaker. This limited the number and diversity of English learners (ELs) that were able to participate in the study.

Finally, this study is both limited by and grounded in the middle-schools concept and Schools to Watch frameworks. While *This We Believe* (2010) does specify instruction for early adolescent ELs, there is little research to demonstrate whether ELs attending Schools to Watch campuses are performing at higher rates than their counterparts attending schools that have not been recognized as schools to watch. Additionally, the Schools to Watch evaluation protocol relies on triangulation between the narrative application, site visit observations, and panel interviews, as well as multiple researchers. However, the protocol does not rely on extended time in the field. While triangulation was achieved through the use of the Schools to Watch protocol, the study is limited by the amount of time spent at each site.

Findings

In this section, I examine the various instructional approaches that teachers used to accommodate for their English Learners (ELs), including a comprehensive literacy workshop, language and literacy intervention model, and a focus on developing literate environments. Next, I explore how teachers created a literacy rich environment before detailing ELs students' perspectives regarding their language learning and what they felt was most important for teachers to understand about them as learners.

Instructional Approaches

This campus was very open about their current transition to a larger ESL program as being both a challenge and a strength of the school. Previously, there was one ESL teacher who developed the program and managed implementation. However, their population had grown to the point that it was no longer feasible for one person to be responsible for the success of the ELs on campus. The district agreed to grant an additional ESL teacher. The school was navigating how shared responsibility would look for the program and were providing additional teacher training regarding ESL instruction for content area teachers. The current program set-up was that the students were placed in the mainstream classes, except for English language arts and reading (ELAR). Their ELAR class was taught by one of the ESL teachers.

The ESL teachers had very different approaches. One had a very comprehensive literacy style classroom that included listening, reading, writing, and activity stations all within a very literate environment. The other ESL teacher focused on teaching to the “gaps” and providing STAAR specific support. The teacher that had a comprehensive literacy approach had created a literacy rich environment. The word wall included vocabulary terms in English, as well as the native languages of the students in the class. In addition to the word wall, items around the classroom were labeled in English and the native languages of the student in the classroom. The teacher also had created a reading center that provided access to audiobooks, picture books, novels, and current event reading materials of a variety of levels, topics, and languages. She had also created an activity center that had games using sentence stems, vocabulary sorts, alphabet games, and materials for note-taking while analyzing a text.

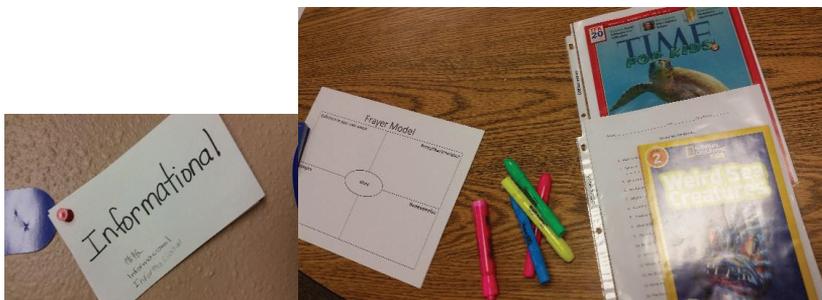


Figure 2. Literate Environment Artifacts: Word Wall Sample Term – Defined in English and each language represented in the classroom (left); Guided Reading Table prepared with theme based non-fiction texts and a graphic organizer (right)

Her classroom also incorporated technology using Channel 1 News, iLIT, and BrainPop.com. iLit and BrainPop are both computer programs that were used for interventions. While iLit was primarily used for targeted vocabulary development and reading comprehension, BrainPop was used for grammar support.

Channel 1 News was not a computer-based program, but was a program that students viewed daily on the television. This news channel presented information on current events as a level appropriate for early adolescents. This ESL teacher used the media to begin her class each day. After the class had watched the news segment, they would engage in a whole class conversation. During the conversation, each student was asked to share one news event that they learned about through the segment or that they had questions about. The teacher felt that this format encouraged ELs of all levels to engage daily in academic conversations.

Conversely, the other ESL teacher focused her instruction on preparing students for the state assessment. This teacher described targeting reading and test taking strategies as being effective for her ELs. “The thing I am most proud of, is that I have had 1st year students pass STAAR using strategies alone. By focusing on the main concepts and strategies, they were able to pass.” In this classroom, the teacher used ESL picture dictionaries to target academic vocabulary development and spent a significant amount of time on STAAR test preparation passages and explicit grammar instruction. This ESL teacher was also responsible for supporting the content-area classroom teachers with their instruction for ELs. She provided translated PowerPoints, provided access to alternative texts for ELs, and coached the content-area teachers on accommodation strategies.

Designing Language-Rich Environments

The dynamics of this program were evident on the walls of the ESL classroom. The teacher had evidence of diverse literature engagement, accountable talk, word study, and writing (See Figure 3). The language and literacy instruction utilized a comprehensive literacy approach with a specific focus on vocabulary development. Students had a wide availability of texts for students to choose from both in the classroom and in the library. The librarian had recently begun updating the library, culling books that were damaged or no longer relevant to students and replacing them with popular literature, updated non-fiction, and YALit texts. Additionally, all ELAR classes were provided with class sets of all Bluebonnet Award Winning books and a class set of iPads with access to e-books and audiobooks. Students were observed reading in all content-area classes. Across the applications and site visits, there was a common focus on academic

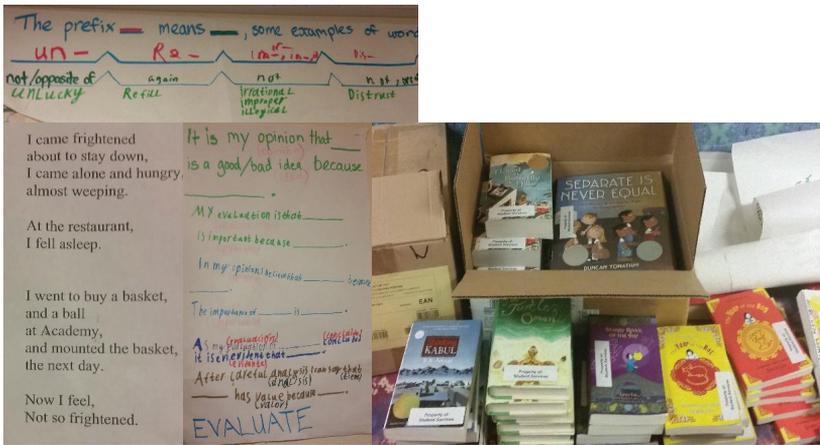


Figure 3. Language rich environment: Word Study Anchor Chart – Prefixes (top); Student Poetry Exemplar displayed on the wall (bottom left); Sentence Stems Anchor Chart for Evaluating Text (bottom center); Culturally Relevant Classroom Library with Multiple Copies for Book Clubs, Literature Circles, and Guided Reading (bottom right)

vocabulary development. However, the schools whose ELs appeared to have the most positive learning outcomes paired academic vocabulary development with a variety of language and literacy strategies that supported the domains of listening, speaking, reading, and writing. The teachers at each of the site visit schools utilized comprehensive literacy strategies to support the development of the ELs in their classes. These strategies included open access to a variety of high-quality texts. These texts were made available to students as e-books, audio-books, and as hard copies. The ELAR teachers at Crockett Intermediate were provided with classroom sets of Bluebonnet Award-winner books, whereas the ESL teacher at Chisholm Trail Middle School was provided with a culturally relevant reading library that included texts that represented a variety of cultures, genres, and levels. The students were also provided access to digital literacies in a variety of ways.

These schools had commonly practiced the creation of language-rich environments. The walls of classrooms boasted interactive word walls, anchor charts, and graphic organizers like those shown in Figure 4.

What was unique about the use of these strategies at the site visit schools was that these classroom resources were interactive, rather than instructional decorations. Many of the word walls were student created and maintained,

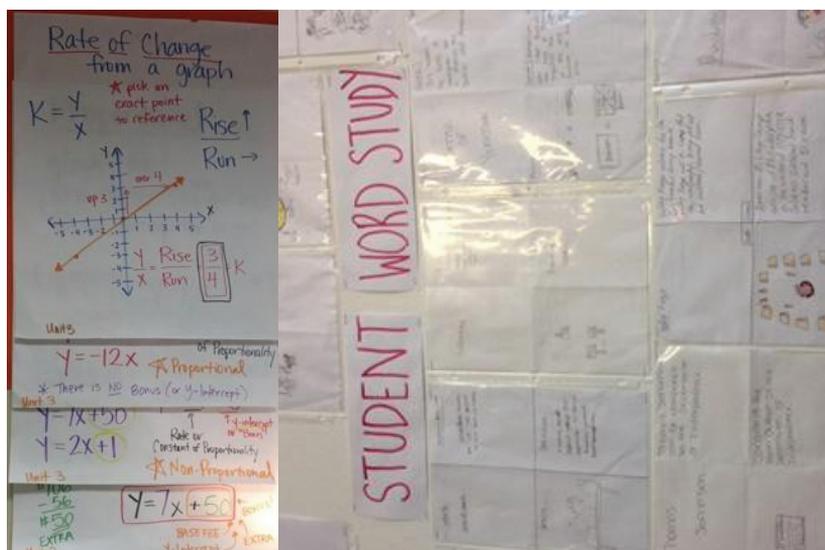


Figure 4. Language rich environments in content-area classes: Key Concept Anchor Charts with Visuals and Key Terms for Math Class (left); Student Created Word Wall – Each Term includes Picture, Student-Created Definition, and Example from Text Evidence (right)

such as the one seen in Figure 4. This particular example was found at KIPP Aspire in a social studies classroom. Every word on the wall had been identified as important by a student, defined, and accompanied a visual representation of the term. The interactive nature of these language rich environments was one piece of creating multiple opportunities for students to engage with content. At Chisholm Trail Middle School, all anchor charts had been started by the teacher, using a general outline. Students had then contributed to the charts by adding their own learning, notes, or including academic terms translated into their home language. Several schools had a focus on listening and speaking, but incorporating accountable talk as a primary strategy to achieve academic excellence. Several of the schools used accountable talk to provide students with the structures needed for engaging successfully in inquiry-based learning opportunities. Furthermore, students were given multiple opportunities to demonstrate mastery of the content. Projects, exhibitions, reflection journals, performance tasks, and performances were listed as some of the types of assessments that *Texas Schools to Watch* campuses were using with their early adolescent learners.

Multilinguals vs. English learners

They also positioned ELs as multilingual students, rather than as ELs. This was very evident in the student panel. When asked how teachers helped them with their English, they rejected the question saying that English was easy. When asked how teachers need to know about students who speak multiple languages, they had a lot to say.

Student 1: At home, we speak Arabic and English. It's not hard. When I have family come in town that only speak Arabic, I can talk to them about basic stuff, but when the conversations get more detailed, I don't know the words and sometimes they have trouble understanding me. Same thing at school. English isn't hard. I can speak English with my friends and I can understand most things in class. It's when it's new information or, you know, homework type English, that I need my teachers to help me.

Student 2: Yeah, like, same for me. It's okay until I go to Mosque, 'cause I'm Muslim. When I'm trying to read it and talk about our beliefs... that's a lot harder. Sometimes I need my mom or teacher to explain. I feel the same way in Science class with my English, well, except my mom can't help me... only the teacher or maybe I have a friend. But I'm just not real smart, I'm not good at school. But it's not that I'm learning English. I mean, I speak it at home, too. ”

Interviewer: Do you think of English or Arabic as your 1st language?

Student 2: They are equal. I learned them at the same time.

Student 1: Me too.

Student 3: Yea, I feel the same about my English and Spanish. My family, we speak Spanish and English. My mom doesn't really speak English, but she can understand me when I talk to her. Same as her. Most English and Spanish is easy, unless the topic is complicated, then sometimes I don't know the words... I may need to slow down or I may need help understanding or saying something the right way.

The teachers in the leadership team discussed the value in using students' home languages as the foundation for instruction.

- Teacher 1: In my class, I start the day with key academic vocabulary. I always teach that vocabulary in English and the other home languages represented in class. It's often the ELL's role to teach words in their home language. Sometimes, that means that they have to go home and figure it out, because they may not know it. In that case, it becomes a homework replacement. It reinforces that we are a community of language learners.
- Teacher 2: I frequently have students come into my office, excited to tell me that there is a new student in their class and what they had already learned from them, new words, cultural information, whatever. I'll say, 'Yeah! That's amazing! You should go make friends with that person! Aren't we lucky to have so many cool kids at this school that we can learn from?'
- Teacher 3: Even though I don't speak any languages other than English, you will frequently hear students speaking in their home languages in my classroom. I think it's extremely important to allow them an opportunity for think time, processing time, and discussion in their first language, especially when introducing new topics. It's that whole idea of the conceptual transfer. If they are really exploring a new idea, I'm not going to stop them and be like, 'No, now, we need to speaking in English...'. That's ludicrous. They are learning and that's the goal.

Evidence of this belief was also seen in the classroom observations. Though teachers were aware that they were not required to translate information for students, that felt that providing students multiple ways in which to engage with new vocabulary was beneficial to the ELs in the classroom, as well as the other students. They also believed that commonly using student's home languages in the classroom fostered safe and inclusive learning environments, shown in Figure 5.

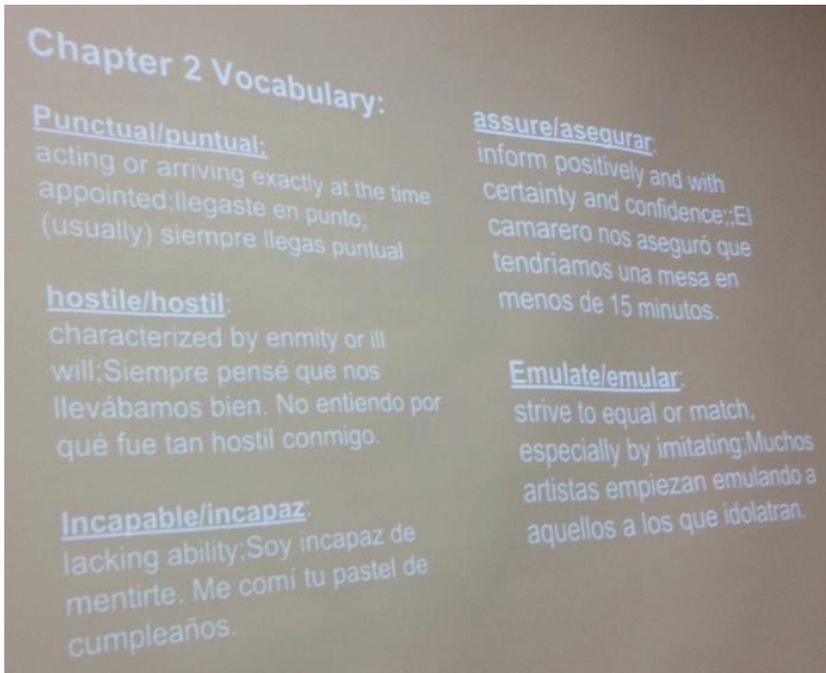


Figure 5. Home languages valued in the classroom: Teacher and Students Collaborated to define Key Vocabulary in the Language Represented in the Classroom (English and Spanish)

Discussion

The findings suggested that, in the areas of language and literacy, a comprehensive, translingual, transcultural, and transnational approach was most valued by *Texas Schools to Watch* middle schools. However, the findings also put into question widely-used English as a Second Language (ESL) practices including the way in which Texas public schools position non-native English-speaking students.

The incongruity in the positioning of ELs may suggest that the goals of the program and the goals of students are misaligned (Brozo, 2006; Dudley-Marling, Jackson, & Stevens, 2006). According to the students in this study, their language goals were not targeted only on English acquisition, but on continuing to master increasingly complex language in both languages. Conversely, the goal of the ESL program in Texas is for students to acquire English. If the language goals of the students in this study are common among early adolescent ELs, then I would assert that it is possible that the misalignment between the program and

student goals in language and literacy acquisition could contribute to why this population continues to be “low performing.” García and Wei (2013) posits that “bilingualism goes beyond two autonomous languages [...] Instead, dynamic bilingualism suggests that the language practices of bilinguals are complex and interrelated; they do not emerge in a linear way...” (p. 14). In this way, the concept expressed by the ESL teacher at Chisholm Trail Middle School, that students should be encouraged to utilize their home languages as they attempt to negotiate new concepts and second language acquisition, brings the field of ESL somewhat closer to the theory of translanguaging.

The findings suggested that responsive instruction is of key importance when serving linguistically and culturally diverse adolescents. Responsive instruction refers to instructional strategies, educational opportunities, and educational resources that are used intentionally to respond to the needs of specific students. Based on the findings of this study, I believe that collaborative on-going assessment paired with instruction that is constantly adapting to the current needs of the students, therefore creating a variety of opportunities for students to engage meaningfully and successfully in their learning is key to support the academic success of early adolescent ELs.

Conclusion

When considering this study’s implications for practice, I would encourage educators to notice the repeated notion of incorporating components that reflect the current student population. Each of the campuses and teachers under review made explicit efforts to acknowledge and celebrate the contributions of all individuals in the classroom. In each of the schools, teachers made explicit efforts to encourage students to utilize their home language for the purpose of content and language learning and celebrated the students that did so, even though the official language of instruction was English. Teachers targeted key concepts, academic vocabulary, and critical thinking skills which encouraging students to move freely in and out of their language repertoires. Additionally, efforts were made to incorporate content specific texts, such as art, books, articles, and music that reflected the race, culture, language, and experiences of the students in the classroom, thereby providing students with mentor texts that acted as mirrors, windows, and sliding-glass doors (Bishop, 1990). Through these actions, each school showed a commitment to the “daily fight for social justice” (Duncan, 2010, n.p.).

This daily fight for social justice is not something that occurs without passion. Any daily fight requires huge commitments of time, resources, and energy at both the institutional and individual levels. Therefore, I encourage campus

leaders and teachers to conduct an evaluation of their values and current practices to determine what next steps they are willing to commit to in this fight for social justice and if their fight truly represents the students that they serve. The following questions are intended to help guide educators in considering the key components of designing responsive instructional environments that are supportive of early adolescent EL academic success.

- In what ways are we utilizing home languages as a foundation for instruction in our regular classroom practice?
- How are we planning for all students to have opportunities to authentically engage in a variety of ways in the academic language and content targeted in our curriculum?
- How do we define a text on this campus? What opportunities are we creating for students to engage in a variety of texts, including texts that are reflective of the culture, experiences, or language(s) of our early adolescent ELs?
- Do our current practices support a holistic approach to the language and literacy development of our early adolescent ELs or is our focus on isolated skills?
- How are we planning to assess student learning so that all students are able to demonstrate their knowledge in meaningful ways?
- In what ways are students engaged in personal academic progress monitoring? Do our students understand what their academic goals are and have ownership over making progress toward those goals? What evidence do we have of this?
- What flexibility can we provide in our ESL program to adapt to meet the needs of individual students?

This study did not intend to suggest a one-size-fits-all approach to providing equitable language and literacy education for students, rather, it sought to provide schools with a framework to evaluate their needs, values, and practices in relation to research-based recommendations for socially equitable and culturally relevant language and literacy instruction for all students, but particularly for adolescent ELs.

Moving forward, this study should serve as the initial building blocks for exploring how high-quality middle schools as defined by the Schools to Watch framework are meeting the language and literacy needs of their specific EL

populations. Additional research should add to this database by providing additional examples of creative solutions to socially equitable and culturally relevant approaches to language and literacy education from unique populations. A move is being made by a small contingent of researchers to explore translanguaging in the middle grades (Pacheco & Smith, 2019; Martin-Beltrán, 2014). This work can also be extended by digging deeper into specific practices, such as culturally responsive reading and writing workshops, that have been recommended by the schools in this study, as well as from additional studies in this field. Research would be useful in understanding how middle school teachers navigate district requirements, diverse linguistic and academic abilities, and diverse cultural needs to incorporate materials, instruction, experiences, and interactions that reflect the needs of their current student populations. A comparative study that juxtaposes the experiences of adolescent ELs in traditional reading and writing workshops versus adolescent ELs in reading and writing workshops that incorporate culturally responsive and translanguaging practices, would also be useful in understanding how these similar, yet different approaches impact student learning outcomes.

This study suggests that in order to educate for a just society, early adolescents must be provided with culturally and linguistically affirming literacy learning environments and experiences. While the middle-school concept grounds this study and has made significant positive strides toward identifying practices to support the education of early adolescents, there is still work to be done in the area of social equity. Luckily, this study has revealed that educators are actively engaging in the daily fight for social justice and that there are real-world examples of how to further the cause of just education.

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MEETING THE NEEDS OF EARLY ENGLISH LEARNERS: A PROGRAM FOR THE COMPARATIVE STUDY OF U.S. AND ITALIAN PEDAGOGY

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Abstract

Pre-service early/elementary educators enrolled in a graduate reading class engaged in a global learning experience to empower them to internationalize instruction practices within tutoring sessions. Participants investigated Reggio-Emilia, Montessori, Waldorf, and International Baccalaureate Primary Years Program pedagogical techniques through research, observations and interviews with Italian and U.S. teachers, and by incorporating new literacy instructional strategies in tutoring sessions with early/elementary students. Results suggest that pre-service educators and their early/elementary students benefited from the international perspectives in literacy tutoring.

Keywords: Pedagogy, pre-service elementary educator, Reggio-Emilia, Montessori, Waldorf, IB-PYP, Italy, cross-cultural

Introduction

In his 2009 address to the Hispanic Chamber of Commerce, President Obama issued a challenge for education leaders to “Develop a cutting-edge plan to raise the quality of your early learning programs...” He noted that some programs were falling short resulting in children “wasting away their most formative years...” including “the one-fourth of all children who are Hispanic, ... but who are less likely to have been enrolled in an early childhood education program than anyone else” (Obama, 2009, n.p.). These early learners, particularly those in urban environments, must overcome challenges of poverty, limited resources and increased family mobility (Barrow & Markman-Pithers, 2016; Prorise, 2008) to develop the literacy skills necessary for success in school and the workforce. English learners (ELs) require support from educators with expertise in early literacy development, language theory and pedagogy and understanding of the role culture plays in learning (Barrow & Markman-Pithers, 2016).

Confirming this call for action, the International Literacy Association (2019) advocates for teacher candidates to reach standards in five key areas, one being Diversity and Equity. According to the ILA website, teacher candidates are to “demonstrate knowledge of research, relevant theories, pedagogies, essential concepts of diversity and equity; demonstrate and provide opportunities for understanding all forms of diversity as central to students’ identities” and “create classrooms and schools that are inclusive and affirming” (para. 2).

To prepare pre-service educators to meet the literacy needs of ELs in the local public schools, the metropolitan public university in which this project took place led the charge for early literacy learning opportunities through *Early Reading First* grants that offered training for preschool educators and parents (Frontiero, 2006). Following these grant projects, faculty noted a continuing need to provide instructional opportunities for its early/elementary pre-service teachers to continue obtaining experience in working with and learning about ELs. While the program provided coursework related to elementary ELs, there was no required course that specifically addressed the needs of early (Pre-K) literacy learners developing second language skills. Components of the existing courses emphasize work in K-6, such as competence in instruction of the state’s standardized tests; however, early/elementary teacher candidates not only receive few opportunities to work at the Pre-K level, but even fewer to work with Pre-K ELs.

An early solution for pre-service educators was to study four pedagogical approaches as part of a study abroad program to Florence, Italy (Rhodes, Massaro, & Stringer, 2017). This study abroad program was designed to provide pre-service educators with EL literacy instruction that was not included in the established curriculum. This program engaged the pre-service educators in

lectures with international partners, classroom activities, and direct instructional experiences with Italian students. Unfortunately, the expense of the trip was often cost prohibitive for the students; thus, many potential participants were unable to attend. It became clear that the faculty should consider affordable means for increasing pre-service educators' understanding of Pre-K-2 literacy pedagogies for ELs.

Purpose

The primary purpose of the project was to broaden the training of pre-service educators to include pedagogies that serve the literacy needs of Pre-K-2 ELs. Thus, the research team restructured a teacher education graduate course with goals of empowering pre-service educators to conduct cross-cultural research, implement alternative literacy instruction practices, forge professional relationships with international colleagues, deliver useful information to inform literacy initiatives, and utilize technologies to enhance instructional practice. This project is significant due to its aim to meet a national need for early EL literacy expertise among early/elementary educators (Barrow & Markman-Pithers, 2016; ILA, 2019). The goal for sharing this information is to provide a curricular model of a course that meets a national need (literacy needs for Pre-K-2 ELs) in addition to sharing challenges and lessons learned in the restructuring of a reading diagnosis course.

Definitions of Key Terms

Original reading diagnosis course. This term refers to the course called *Diagnosis and Remediation of Reading Difficulties*, prior to its restructuring to meet the project goals.

Restructured reading diagnosis course. This term refers to the *Diagnosis and Remediation of Reading Difficulties* course once it was restructured by the research team.

Pre-service educators. This term refers to the participants in the project. They are the Master of Teaching graduate students in the restructured diagnosis reading course.

Literature Review

The most pertinent bodies of literature that inform this project are experiential learning (Kolb, 1984) and tenets from the four pedagogical approaches, Montessori, Reggio-Emilia, Waldorf (Edwards, 2002), and International Baccalaureate

Primary Years Programme (IB-PYP) (International Baccalaureate Organization, 2019). The four pedagogies utilize these methods of instruction (Edwards, 2002; IB, 2019). Edwards (2002) examines three approaches (Montessori, Reggio-Emilia, and Waldorf) in his work. According to Edwards (2002), these three approaches to learning help children recognize their full potential and allow them to see themselves as intelligent and creative individuals. Individual communities are expected to keep the guiding principles pertinent and strive to make the approach meaningful for their particular community (Edwards, 2002). Likewise, the IB-PYP (2019) embraces similar tenets, focusing on students' individual development through independent learning and self-directed inquiry. These four approaches to early literacy meet the requirement of appropriate pedagogies while proving to be accessible programs in the geographic area. Furthermore, they utilize experiential learning (Kolb, 1984), considered to be a best practice. Following are sketches of these four international literacy approaches.

Montessori

Montessori education was founded by Italy's first female physician, Maria Montessori, in Rome in 1907 (Edwards, 2002). Montessori education is child-centered, emphasizing the growth of all aspects of the person. Children are seen as independent learners who are able to initiate and explore their individual interests while learning (American Montessori Society, 2019). Children's cognitive, emotional, social, and physical development are strengthened through self-motivated independent and group work cycles. Multi-age groups allow younger children to learn from older children while providing older children with the opportunity to strengthen their skills through teaching younger learners. Furthermore, older students improve their leadership skills and act as role models for younger students (American Montessori Society, 2019). According to Soundy (2003), literacy development is enriched when children partake in Montessori education. Children strengthen their functional literacy development through utilizing Montessori pedagogy (Soundy, 2003). For example, one urban elementary school that was at a 95 percent poverty level demonstrated the effectiveness of the Montessori approach when the children improved their reading scores by 30 percent and math scores by 35 percent on state assessments (Pierpont, 2006).

Reggio Emilia

Founded after World War II by Loris Malaguzzi in Reggio Emilia, Italy, the Reggio Emilia pedagogy also encompasses child-centered learning (Edwards, 2002).

The child is viewed as one who innately has numerous resources and great potential (North American Reggio Emilia, 2019). The children are a community of learners with short- and long-term projects determined by children's interests. Other distinct characteristics in this approach include the participation of faculty, staff and families to work with the child in an equitable manner, utilizing children's experiences and views on the world (Reggio Children, n.d.). In particular, the inquiry accomplished in Reggio Emilia pedagogy has helped children's second language acquisition (Hughes & Wineman, 2009). The implementation of Reggio Emilia pedagogy in one Title I school demonstrated the positive impact this approach had on English learners (Hughes & Wineman, 2009). Young learners' experiences with their family and teachers can be paramount to their literacy development. The Reggio Emilia approach naturally facilitates such experiences.

Waldorf

Waldorf education was founded by Rudolf Steiner, an Austrian scientist and philosophical thinker, in 1919 (Edwards, 2002). After World War I, his vision was to provide a child-centered learning environment "to create a just and peaceful society" (Edwards, 2002, para. 4) and "an understanding of each child as a unique individual who seeks to learn and grow" (WECAN, n.d., para. 2). Steiner developed the system on three cycles of seven-year stages with young children (before age 7) learning through imaginary play, imitation, and doing (Edwards, 2002). In this first cycle, literacy is focused on the spoken word; language skills are developed through repetition of stories, and when the child is ready, writing and then reading are added. Each child is encouraged to develop these skills at his own pace, aligning with how humans acquire language (Gradalis, 2019).

International Baccalaureate Primary Years Programme (IB-PYP).

The original IB program was founded in 1968 in Geneva, Switzerland and opened its doors in North America in 1975. Years later, in 1997, the IB Primary Years Programme (PYP) for children aged 3-12 was added (IBO, 2017). Also a child-centered approach, the IB-PYP focuses on an "inquiry-led, transdisciplinary framework" and "challenges students to think for themselves and take responsibility for their learning as they explore local and global issues and opportunities in real-life contexts" (IBO, 2019, para. 2). The program stresses global contexts by incorporating local and global issues into the curriculum. One of its key foci is to increase understanding of languages and cultures (IBO, 2019).

For early literacy education, the inquiry-led and play-based approach has been successful. For example, in a study based in four schools in Singapore and Australia, results suggested that literacy skills at all four sites were fairly developed and that children's school readiness and learning skills were at level or higher than a comparative sample (Morrissey et al., 2014).

Methodology

Participants

The participants in the project included 27 pre-service educators enrolled in a Master of Teaching in Early/Elementary Education program in a metropolitan public university located in the eastern United States (U.S.). The participants enrolled in a semester course in the diagnosis and remediation of reading difficulties in either the Fall of 2017 or Spring of 2018. All of the participants completed courses in the foundations of literacy learning and children's literature. In addition, most participants completed a course in the teaching of writing prior to enrolling in the original reading diagnosis course. The original reading diagnosis course included both lecture and twice weekly individual tutoring sessions between the participants and second grade students. The partnering public school selected tutees who were served through the EL program or were recently released from EL services.

Restructuring the Reading Diagnosis Course

Through a grant project funded by the university, the authors restructured an existing reading diagnosis course to allow participants to become familiar with the pedagogies employed by the four educational approaches: Reggio-Emilia, Montessori, Waldorf, and IB-PYP. The restructured reading diagnosis course was designed to fulfill the aforementioned goals of empowering participants to conduct cross-cultural research, implement alternative literacy instruction practices, forge professional relationships with international colleagues, deliver useful information to inform literacy initiatives, and utilize technologies to enhance instructional practice. To accomplish these goals, the restructuring of the course included adding English as a Second Language (ESL) workshops, adding coursework focused on familiarizing the participants with the targeted pedagogies, interviewing and observing in-service teachers using the pedagogies, and incorporating new literacy instructional strategies in tutoring sessions.

First, an outside ESL expert provided four additional workshops. The first workshop focused on diverse learners, their families, instructional design, and assessment, emphasizing the importance of understanding the family members'

educational background when serving ELs. The second workshop included ELs' oral language acquisition and best practices in teaching ESL speaking. The third incorporated ESL pedagogy in the tutoring sessions, including Krashen's (1981) *Monitor Model*, and pre-, during, and post-reading activities. The final workshop emphasized differences in first language (L1) and second language (L2) vocabulary acquisition and lessons to enhance ELs' vocabulary. These workshops emphasized strategies for working with ELs and addressed the need for cultural competence when providing instruction to children from a variety of countries and language backgrounds.

Second, the restructured course included adding coursework focused on familiarizing the participants with the targeted pedagogies. Added coursework included research, writing of literature reviews, class presentations, and comparative analyses of the four target pedagogies. To increase their understanding of the pedagogies, the participants were divided into teams to research and write literature reviews of the four pedagogies. Afterwards, they conducted presentations of their findings to their classmates. Online entries were added to the curriculum so that participants could share their findings and insights with their classmates and other educators. Finally, to fortify their understanding of the differences between the approaches, the participants conducted comparative analyses of the pedagogies.

Third, the participants interviewed teachers in Italy who were utilizing the targeted pedagogies with ELs. The professor of the restructured reading diagnosis course had forged a relationship with these Italian teachers in previous semesters when she took her students to study abroad in Italy. The Italian teachers provide English as a Foreign Language (EFL) instruction to young Italian students and in two cases worked in international schools that utilized English as the language of instruction. The participants from the restructured reading diagnosis class interviewed the Italian teachers about best practices utilized and challenges encountered when teaching ELs.

Fourth, the restructured course added an opportunity for the participants to observe in-service teachers in the U.S. who were utilizing the targeted pedagogies with ELs. These in-service teachers serve both ELs and native-English speaking students in their classes. The observations with local colleagues were arranged by the reading diagnosis course professor.

Finally, the participants applied their new literacy strategies through tutoring sessions with local second grade ELs. These sessions were conducted twice weekly with a local partnering school. Participants created lesson plans to incorporate new literacy instructional strategies and wrote reflections on their tutoring sessions.

Implementation Successes and Challenges

To determine the success of the curriculum restructure and whether the goals of the project were met, the professor assessed coursework for learning, assessed lesson plans for incorporation of new pedagogies, and observed tutoring sessions for application of the pedagogies in practice. Pre-service teacher work that was assessed included written summaries of each pedagogy in online posts; in-class presentations of the targeted pedagogies (Reggio Emilia, Montessori, Waldorf, and IB-PYP); written notes, reflections and online posts regarding interviews and observations; lesson plans for tutoring sessions using new pedagogical approaches; and, group analysis reports that compared literacy approaches in the U.S. and Italy for their respective pedagogy.

In addition, the professor received verbal feedback from the pre-service participants about the effectiveness of the curriculum. These preliminary data offered initial insight into the implementation of the new course curriculum and point to the need for further in-depth analysis of the data along with the need to reconvene the pre-service teachers for participation in forthcoming focus groups to fully assess implementation successes and challenges.

Overall, initial analysis indicates the primary purpose of the project, to broaden the training of pre-service educators to include pedagogies that serve the literacy needs of Pre-K-2 ELs, was successful. Participants expressed strong positive feedback in their online postings, presentations, papers and particularly in class discussions about the usefulness of the four pedagogical approaches and the associated activities. However, the participants suggested that the project be conducted in a separate course beyond the reading diagnosis course. Adding new material about the pedagogical instructional strategies to an already full reading diagnosis course overextended the participants. Nevertheless, the participants learned the new pedagogies well enough to incorporate literacy instructional strategies in their tutoring sessions with ELs. In addition, participants developed a deeper understanding of the four pedagogical approaches and could successfully compare them with one another. They recognized that there were alternative ways to provide literacy instruction and indicated a desire to teach “the whole child,” a tenet emphasized in the approaches.

Regarding the goal of conducting cross-cultural research, the professor observed both successes and challenges. For example, in an exercise of cross-cultural research, the professor observed that students were able to use the resources created by the librarian to develop a paper, but interactions with Italian teachers were challenging in some cases. In one example, the participants were frustrated when they scheduled a meeting, but did not account for the time change across continents. In addition, they expressed challenges with understanding the accents

of the Italian teachers even though all of the participating Italian teachers spoke English. In these cases, the students demonstrated a lack of cultural competence.

For the goal of implementing alternative literacy instruction practices, a review of lesson plans indicated that the first semester participants did not independently incorporate research knowledge into their own tutoring. To support the second semester participants, the instructor required the pre-service educators to test a strategy before implementation. This support proved more successful, as the participants were more skilled at delivering an instructional strategy. In addition, they connected their understanding of the pedagogical approaches in other classes. An area for improvement was the depth of their understanding of an approach. For example, when implementing new ideas, participants struggled to envision how to incorporate the pedagogical approaches directly into their own tutoring and frequently clung to one specific activity for a given approach such as using movable alphabet represented understanding of Montessori instruction.

For the goal of forging professional relationships, the participants collaborated with in-service teachers mainly to obtain the information they needed for their assignment. In other words, the participants did not appear to view the professional relationship as an opportunity to network in the field. In fact, with the Italian partners, the relationships did not extend beyond the initial interview. Some participants expressed working with Italian colleagues as very difficult due to distance and time changes. Indeed, the participants lacked some basic cultural competency skills such as an awareness of different time zones, as previously mentioned, and patience when needing to repeat questions or responses during phone or Skype interactions. On the other hand, forging professional relationships with the U.S. educators proved more effective. The observations of U.S. in-service educators encouraged critical thinking about the advantages and disadvantages of the approaches. Indeed, the participants expressed strong pro or anti opinions on specific pedagogical approaches. These in-depth discussions proved beneficial for the participants' learning process. Personal relationships established between the instructor and partners in Italy and the U.S. prior to the class were critical to the success of the project. Without the pre-established relationships, this project would not have included this element. It is essential to first develop relationships prior to asking teachers, whether in the U.S. or other countries, to commit to helping educate those studying to be teachers.

For the goal of delivering useful materials to inform literacy initiatives, the project was minimally successful. The first semester participants created public blogs that were later abandoned due to participant inexperience with the technology. They requested to use the university management system instead of blogging. This practice was extended for the second semester. Fortunately,

utilizing the university management system had an added benefit of keeping course materials together. Participants expressed interest in sharing what they learned about alternative pedagogies with one another to incorporate their learning into future assignments.

Finally, regarding utilizing technologies to enhance instructional practice, participants' lesson plans included the use of iPads. Participants regularly employed iPads to enhance their instruction, unfortunately the iPad lessons were rarely connected to one of the pedagogical approaches studied. More often, participants utilized the iPads to follow a tenet of the approaches, to educate the whole child.

Limitations

The global learning experience and re-structuring of the pre-service educator course at this particular institution might not be transferable to other institutions depending on personnel availability, access to international colleagues, and funding. However, some of the changes to the course, such as the addition of cross-cultural pedagogies into the coursework, are easily incorporated. An additional limitation is the size of the class. The small number of participants in these two courses made it possible to schedule interaction between the participants and the in-service teachers in Italy and the U.S. Finding the time, personnel and resources to incorporate all components of this effective experience may be less practical for a large class.

Implications for Future Research

The preliminary findings of this study suggest that focus group interviews with students will provide a richer picture of the implementation effectiveness. A future study could follow individual participants' work in their teaching careers to investigate how, if at all, they incorporate the international pedagogies into the literacy teaching of ELs.

Conclusion

The project met a number of the goals identified during the planning phase, particularly creating an awareness among students to social justice issues. The pre-service educators became aware of the inequities in education for ELs, and some were able to apply this to their tutoring sessions. However, much work still needs to be done to determine whether involvement in this project will influence the participants' interactions with future ELs. Certainly, given that

the participants were overwhelmed with the coursework additions, it is feasible to propose a separate course that focuses on literacy pedagogies from our global colleagues. A further change to the curriculum would include more oversight, guidance, and facilitation on the virtual meetings with the Italian educators. Finally, more understanding on the overall success of the project will occur through future focus groups with participants. The focus groups will allow the researchers to gain a deeper understanding related to the use of the four pedagogical approaches during student teaching and within the pre-service educators' classrooms upon graduation.

While many students would like to study abroad, the cost of travel limits the availability of this experience. Providing cultural connections and experiential learning opportunities for pre-service teachers while studying in the U.S. is at least a start at influencing teachers' knowledge of instructional practices that will improve ELs' experience in language acquisition and academic success. Equally important is the positive impact purposeful modifications to existing curriculum can make in pre-service students' understanding of the social justice issues that impact children in U.S. public schools.

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LANGUAGE LEARNING STRATEGY USE OF CHINESE UNIVERSITY STUDENTS IN A KOREAN CONTEXT

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Abstract

The purpose of the study was to explore the use of language learning strategies by Chinese university students attending a university in South Korea. Additionally, differences in strategy use by academic year and language proficiency were examined. Data were collected using the Strategy Inventory for Language Learning (SILL). The study found the participants utilized various strategies at a low level. Compensation strategies were the most preferred while affective strategies were the least used. The findings indicate that the Chinese students used the compensation strategies more frequently to overcome limitations or difficulties in language learning while they felt less comfortable using affective strategies related to controlling their emotions such as anxiety, self-esteem, and motivation. Additionally, findings found that the participants classified as Seniors had a significant difference in more strategies used than other academic groups while the difference among language proficiency was not statistically significant.

Keywords: Language Learning Strategies, EFL Chinese University Students, Strategy Inventory for Language Learning (SILL), Second Language Acquisition

Introduction

Learning a second language or foreign language can be challenging and not all learners reach a mastery level in the language being learned. Those who achieve mastery level employ a variety of approaches when learning a new language in order to overcome the challenges and obtain necessary language skills. The researchers in the field of second/foreign language acquisition have studied the behaviors and thoughts of language learners over the decades to better understand what language learners do (Ellis, 2015; Hong-Nam, 2010; Leaver, Ehrman & Shekman, 2005; Oxford, 1990). However, determining language learners' learning processes can be a complicated task and be difficult to describe as their cognitive thinking process are often not visible. Although it is difficult to describe how language learners process new information, researchers have agreed that successful language learners are believed to take conscious actions to process and control their language learning (Griffiths, 2015; Griffiths & Oxford, 2014; Rubin, 1975; Stern, 1975). Good language learners are also more strategic, metacognitively aware of their own learning process, and able to problem solve regarding their learning (Rubin & Thompson, 1994; Sheorey, 1999). Furthermore, they tend to use more language learning strategies and engage in meaningful language learning more effectively than do less successful learners (Oxford, Lavine, & Amerstorfer, 2018; Wenden, 1987).

Indeed, all language learners apply language learning strategies consciously or unconsciously regardless of their success with language learning (Cohen, 2018). Over the decades, language learning strategies have been considered as an instrument to understand learners' information process and provide the important information about language learners' behaviors and thoughts (Cohen, 2018; Griffiths, 2015; Turula, 2018). Research studies also have reported that the language learning strategies can be influenced by learners' individual background such as age (Adel, 2011; Kaur & Embi, 2011; Khezriou, 2012), gender (Ehrman & Oxford, 1989), learning styles (Kim, 2001), beliefs about language learning (Hong-Nam, 2010; Yang, 1999), academic year (Oxford, 1994; Yang, 2007), cultural and language background (Hong-Nam & Leavell, 2007; Hong-Nam & Szabo, 2013), or language proficiency (Green & Oxford, 1995; Hong-Nam & Leavell, 2006; Liu, 2004).

Purpose of the Study

The number of Chinese students studying and seeking a degree in higher education in South Korea as a foreign student has increased over the decades. The concerns of Chinese students' academic successes and social adjustment to

new learning setting have brought the attention of educators and administrators to the special needs of these students, especially the need to overcome any academic difficulties caused by socio-cultural and educational differences. Research in the field of international students has studied a variety of topics related to international students and reported that the international students undergo various challenges to adjust to new social and academic settings (Parr, Bradley, & Bingi, 1992; Sato & Hodge, 2016; Sato, Hodge, & Eckert, 2018). It was reported that a lack of foreign language ability or skills was one of the challenges that international students face when studying abroad and a lack of language ability can hinder their academic success and social adjustment (Gautam, Lowery, & Mays, 2016; Puntoney, 2012). Due to the language barriers and different educational and cultural backgrounds, many international students including the Chinese students in the current study become discouraged in achieving academic learning goals. They often have disadvantages in getting resource, services and equal participation in the new society (Gautam, Lowery, & Mays, 2016).

Although a number of research studies have been carried out to investigate the difficulties and challenges of international students (Schroeder, 2016), very limited research has been done on these Chinese university students' use of language learning strategies in a Korean context to date. Therefore, the primary purpose of this study was to investigate the language learning strategy use of native Chinese university students who currently attend a university in South Korea. Also, the study examined the difference in learning strategy use by individual variables such as academic year and self-rated language proficiency in three language (Chinese, Korean, and English). In order to fulfill these purposes, the following research questions were designed:

1. What language learning strategies do Chinese university students prefer to use in a Korean context?
2. Are there any differences in strategy use by students' academic year and self-rated language proficiency in Chinese, Korean, and English?

Theoretical Framework

Several theories within the Second Language Acquisition Theory support this research. The Acquisition Theory which requires repetition of meaningful and purposeful interaction with the language being learned (Krashen, 1988) supports all international students learning in a language other than their native language. In this study, Chinese students are in a Korean university setting and thus

they need meaningful interaction with their peers and instructors to learn not only a new language but the content that is being taught. The Semantic Theory, which is about looking at the words and sentences and how they interrelate, helps English as foreign language (EFL) students in their acquisition of meaning to occur within the new language (Fillmore, 1985). This is important for ELL and EFL students as word meaning is also linked with cultural understanding. The sociocultural theory, which states that one learns new ideas with the help of others (Vygotsky, 1986), is supported by several of the categories found on the questionnaire (SILL) used in the current study. The questions within the SILL support the idea that language is learned best through lots of meaningful interaction with others (Lantolf, 2000; Lightbrown & Spada, 2006). The interaction provides necessary feedback, gives scaffolding, provides cognitive understanding, and supports the student's development of language acquisition within their zone of proximal development. The Monitor Theory, which requires students to self-monitor during the learning process. For this study, it is important that students monitor their use of strategies throughout the learning process in order to develop better comprehension while learning in a second or third language (Oxford, 2003).

Literature Review

Language Learning Strategy

Language learning strategies refers to “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situation” (Oxford, 1990, p.8). Research has shown that using language learning strategies can foster learners' autonomy in language learning and help learners become more efficient in learning and using a language (Dreyer & Oxford, 1996; Lee & Oxford, 2008).

Research has examined how choice of language learning strategies is affected by various learner characteristic such as gender (Oxford & Burry-Stock, 1995; Wharton, 2000), second language proficiency (Green & Oxford, 1995; Yang, 2007), academic year (OK, 2003), social context (Hong-Nam & Leavell, 2007; Hong-Nam & Szabo, 2013), and beliefs about language learning (Bernet, 2006; Yang, 1999). Over the decades, learners' use of language learning strategy in various context (ESL or EFL) learning various languages (Hong-Nam & Szabo, 2013; Lee & Oxford, 2008) have been explored. There is little in the existing literature which focuses specifically on strategy use of Chinese students studying in a Korean context. Therefore, this study investigated the overall strategy use of Chinese students enrolled in a university in Korea (RQ1) and looked

at the relationship between language learning strategy use by academic year and language proficiency (RQ2).

Factors Affecting the Use of Language Learning Strategy

Academic Year. According to several studies, higher grade-level students use more communicative strategies (Politzer, 1983), as well as more metacognitive strategies (Chamot, 1987). For instance, in a recent study done by Ghafournia (2014) where he investigated the difference in strategy use among three university levels in Iran, he found that the students at higher academic levels reported using learning strategies more frequently than did students at the lower academic levels. However, some research has shown that course level or academic year does not mean the students can use strategies better or more wisely than other students (Cohen & Aphetk, 1980). But, there is a consensus that students of different ages use different learning strategies (Chamot, 1987; Ok, 2003; Oxford, 1994).

Language Proficiency. Another variable that impacts strategy use is one's language proficiency. Past research has shown that it takes anywhere from four to nine years to develop academic language skills while gaining communicative language skills takes about two years (Cummins, 1981). Research also has reported that advanced language learners tend to have a richer repertoire of language learning strategies, use more strategies, and know what to use and when to use them (Fazeli, 2011; Phillips, 1991; Rao, 2016). A recent study done by Zarei and Baharestani, (2014) investigated the use of language learning strategies by Iranian EFL learner across English language proficiency levels. The study found significant differences in strategy use between the beginning level and advanced proficiency levels.

Additionally, other research has shown that those with more experienced language skills use more strategies than those at the low and intermediate levels of language proficiency (Bremner, 1998; Green & Oxford, 1995; Liu, 2004; Sheorey, 1999; Wharton, 2000). Additionally, some researchers have shown that those who have high, intermediate and low language skills prefer to use different strategies (Hong-Nam & Leavell, 2006; Hong-Nam & Szabo, 2013).

Methodology

Participants

The participants in the current study were 180 Chinese undergraduate students attending a university in Seoul, South Korea. They consisted of

97 freshman, 11 sophomores, 59 juniors, and 13 seniors. They were composed of 126 females and 54 males with a mean age of 21.5. The Chinese students were studying at the university as foreign students and majoring in various disciplines.

The Chinese students were familiar with or able to use the three languages (Chinese, Korean, and English). The students were fluent in Chinese as it is their first language, but they also demonstrated good Korean language proficiency, as all universities in Korea require all foreign students to provide proof of Korean language proficiency in order to attend a university in Korea. This is done by submitting a passing score of the TOPIK (Test of Proficiency in Korean). The participants had also learned English as a foreign language since elementary school and received formal instruction in learning English at school for at least 12 years. When they were asked to self-report their language proficiency in all three languages, most Chinese students felt they were very fluent in Chinese (92%) and considered themselves to be intermediate learners in Korean (81%) and beginners in learning English (57%).

Instrument

The *Strategy Inventory for Language Learning* (SILL, ESL/EFL Version; Oxford, 1990) was administered to collect quantitative data for this study. The SILL is a self-report questionnaire designed to measure the frequency of use of language learning strategies of English language learners (ELLs). It contains 50 items which are grouped into 6 categories: 1) memory strategies for making association, using imageries, storing and retrieving information contains 9 items; 2) cognitive strategies for analyzing, summarizing, understanding and producing the language contains 14 items; 3) compensation strategies for overcoming limitations in language learning such as guessing, getting help, and using clues contains 6 items; 4) metacognitive strategies for planning, monitoring, directing, evaluating learning contains 9 items; 5) affective strategies for controlling emotions, anxiety, and motivation contains 6 items; and 6) social strategies for cooperating with others in language learning contains 6 items. The item numbers in each category represents the number of different strategies that can be used within that category. The SILL uses a five-point Likert-scale system for each strategy ranging from 1 being never use to 5 being always use. The English version of SILL was translated into Chinese to maximize the comprehension of the questionnaire and minimize any possible errors from misunderstanding English. Both Chinese and English version of the questionnaires were read and reviewed by a Chinese student at the university and the two versions were compared for accuracy.

Data Collection and Analysis

Data from the SILL was collected while these undergraduate Chinese students were attending their English class. Descriptive statistics were computed for summarizing demographic information and describing participants' use of language learning strategies. An ANOVA test was utilized to determine if the differences in mean scores were statistically significant in strategy use among the six strategy categories as well as in strategy use by academic year and their self-rated language proficiency levels (Beginning, Intermediate, and Advanced) in Chinese, Korean, and English.

Findings

Research Question 1

To answer Research Question #1, "What language learning strategies do Chinese university students prefer to use in a Korean context," three different sets of data were used.

Overall Strategy use. The overall strategy use was determined by grouping the use of language learning strategies into three ranges (High, Medium, and Low Usage). Based on the mean scores and frequency use of the strategy usage, as seen below in Table 1, 64% of the Chinese students reported low language learning strategy use ($M \leq 2.4$), 31% reported medium usage, and 5% reported high usage.

The mean scores of overall strategies used and standard deviations were calculated. As seen in Table 2, the students reported using a variety of language learning strategies at a low level ($M = 2.28$). Additionally, the mean scores and standard deviations of the six strategy categories were examined. The most preferred group of strategies used by the Chinese students were compensation strategies ($M = 2.52$) followed by cognitive strategies ($M = 2.30$), social strategies ($M = 2.25$), memory strategies ($M = 2.25$), and metacognitive strategies

TABLE 1
Reported Overall Strategy Use by Chinese Students

Usage	<i>n</i> of students	%
High ($M \geq 3.5$)	9	5
Medium ($2.5 \leq M \leq 3.4$)	55	31
Low ($M \leq 2.4$)	116	64
Total	180	100

($M = 2.20$). Affective strategies were the least used strategies category reported by the participants ($M = 2.18$). When looking at the different mean scores among the six strategy groups, the results of ANOVA showed that there was a statistically significant difference among the categories ($F = 4.36, p = 0.001$) at $p < 0.05$ level, indicating that the compensation strategy group was the most preferred by the Chinese students than any other strategy groups.

Strategy Use by Individual Item. The mean scores of individual items on the SILL were examined to determine the preference in strategies used by Chinese university students. Table 3 shows the mean scores and standard deviation of individual items and presents the ranking of strategy use in descending order from most to least preferred. The most preferred strategy category was in the cognitive category ($M = 3.04$), as seen by the results from Item 15 “*I watch English language television shows spoken in English or go to movies spoken in English.*” This was followed by three different strategies in the compensation category, “*When I can't think of a word during a conversation in English, I use gestures*” (Item 25, $M = 2.83$), “*To understand unfamiliar English words, I make guesses*” (Item 24, $M = 2.67$), and “*If I can't think of an English word, I use a word or phrase that means the same thing*” (Item 29, $M = 2.66$). The least preferred category was in the affective strategies, “*I write down my feelings in a language learning diary*” (Item 43, $M = 1.83$).

TABLE 2
Mean Scores and F-test for Six Categories of Strategies

Category	<i>M</i>	SD	Rank	<i>F</i>	Sig.	Difference*
Memory	2.25	0.79	3			
Cognitive	2.30	0.78	2			
Compensation	2.52	0.80	1	4.36	0.001	Compensation > Affective, Metacognitive, Memory, Social
Metacognitive	2.20	0.79	5			
Affective	2.18	0.76	6			
Social	2.25	0.85	3			
Total	2.28	0.80				

* $P < 0.05$ level (Scheffé post-hoc test)

TABLE 3
Preference of Language Learning Strategies by Chinese University Students

Strategy Category	Strategy No.	Strategy	Rank	<i>M</i>	<i>SD</i>
<u>Medium Usage ($2.5 \leq M \leq 3.4$)</u>					
Cog	15	I watch English language television shows spoken in English or go to movies spoken in English.	1	3.04	1.29
Com	25	When I can't think of a word during a conversation in English, I use gestures.	2	2.83	1.22
Com	24	To understand unfamiliar English words, I make guesses.	3	2.67	1.14
Com	29	If I can't think of an English word, I use a word or phrase that means the same thing.	4	2.66	1.16
Met	32	I pay attention when someone is speaking English.	4	2.66	1.15
Soc	45	If I do not understand something in English, I ask the other person to slow down or say it again.	6	2.63	1.17
Cog	22	I try not to translate word-for-word.	7	2.58	1.15
Mem	4	I remember a new English word by making a mental picture of a situation in which the word might be used.	8	2.52	1.06
<u>Low Usage ($M \leq 2.4$)</u>					
Cog	12	I practice the sounds of English.	9	2.42	1.13
Cog	18	I first skim an English passage (read over the passage quickly) then go back and read carefully.	9	2.42	1.28
Mem	1	I think of the relationship between what I already know and new things I learn in English.	11	2.40	1.07
Cog	19	I look for words in my own language that are similar to new words in English.	12	2.40	1.13
Mem	9	I remember new English words or phrase by remembering their location on the page, on the board, or on a street sign.	13	2.39	1.06
Com	26	I make up new words if I do not know the right ones in English.	14	2.38	1.14
Aff	39	I try to relax whenever I feel afraid of using English.	14	2.38	1.07

TABLE 3 (Continued)

Com	27	I read English without looking up every new word.	16	2.37	1.17
Met	33	I try to find out how to be a better learner of English.	16	2.37	1.09
Soc	50	I try to learn about the culture of English speakers	16	2.37	1.21
Mem	3	I connect the sound of a new English word and an image or picture of the word to help me remember the word.	19	2.36	1.09
Cog	20	I try to find patterns (grammar) in English.	19	2.36	1.10
Aff	41	I give myself a reward or treat when I do well in English.	21	2.35	1.13
Met	31	I notice my English mistakes and use that information to help me do better.	22	2.34	1.06
Aff	42	I notice if I am tense or nervous when I am studying or using English.	23	2.32	1.09
Cog	13	I use the English words I know in different ways.	24	2.31	1.05
Met	30	I try to find as many ways as I can to use my English.	25	2.28	1.08
Cog	10	I say or write new English words several times.	26	2.27	0.98
Cog	11	I try to talk like native English speakers.	27	2.26	1.19
Aff	40	I encourage myself to speak English even when I feel afraid of making a mistake.	27	2.26	1.06
Soc	46	I ask English speakers to correct me when I talk.	29	2.25	1.01
Mem	6	I use flashcards to remember new English words.	30	2.23	1.1
Cog	21	I find the meaning of an English word by dividing it into parts that I understand.	31	2.18	1.09
Com	28	I try to guess what the other person will say next in English.	31	2.18	1.02
Mem	5	I use rhymes to remember new English words (e.g., know-no, nail-snail, cat-bat).	33	2.15	1.06
Mem	2	I use new English words in a sentence so I can remember them.	34	2.14	0.99

TABLE 3 (Continued)

Soc	48	I ask for help from English speakers.	34	2.14	1.07
Soc	49	I ask questions in English to other students or native speakers of English.	34	2.14	1.07
Met	37	I have clear goals for improving my English skills.	37	2.12	1.02
Cog	16	I read magazines, books, newspapers, and textbooks written in English.	38	2.09	0.95
Mem	7	I physically act out new English words.	39	2.04	1.06
Cog	23	I make summaries of information that I hear or read in English.	39	2.04	0.94
Meta	36	I look for opportunities to read as much as possible in English.	39	2.04	0.99
Met	38	I think about my progress in learning English.	42	2.03	0.88
Mem	8	I review English lessons often.	43	2.01	0.95
Met	34	I plan my schedule so I will have enough time to study English.	44	2.00	0.99
Soc	47	I practice English with other students or native speakers of English.	45	1.99	0.97
Met	35	I look for people I can talk to in English.	46	1.94	0.93
Aff	44	I talk to someone else about how I feel about learning English.	46	1.94	0.94
Cog	14	I start conversations in English.	48	1.93	0.88
Cog	17	I write notes, messages, letters or reports in English.	49	1.88	0.89
Aff	43	I write down my feelings in a language learning diary.	50	1.82	0.93

Note. Mem (Memory strategies), Cog (Cognitive strategies), Com (Compensation strategies), Met (Metacognitive strategies), Aff (Affective strategies), Soc (Social strategies)

Research Question #2

To answer Research Question 2, “*Are there any differences in strategy use by students’ academic year and self-rated language proficiency in Chinese, Korean, and English,*” two different data were examined.

Strategy Use by Academic Year. The strategy use was grouped by academic year and the mean scores of each group were examined. As seen in Table 4, seniors reported higher strategy use ($M = 3.33$) than other academic groups

(Freshmen, $M = 2.02$; Sophomore, $M = 2.77$; Junior, $M = 2.38$). This difference when looking at their academic year was statistically significant ($F = 21.72$, $p = 0.000$).

Strategy Use by Language Proficiency. The strategy use by language proficiency of the students in all three language (Chinese, Korean, and English) were examined. As seen in Table 5, even though the mean scores of students in the Advanced language proficiency level are higher than those students in Beginning and Intermediate levels, the ANOVA results indicated that the differences were not significant.

TABLE 4
Summary of Differences in Strategy Use by Academic Year

	n	M	SD	F	Sig.	Difference*
Freshman	97	2.02	0.48	21.72	0.000	Senior > Freshman, Sophomore, Junior Sophomore > Junior, Freshman
Sophomore	11	2.77	0.52			
Junior	59	2.38	0.81			
Senior	13	3.33	0.09			

* $P < 0.05$ level (Scheffé post-hoc test)

TABLE 5
Summary of Differences in Strategy Use by Language Proficiency

	Chinese			Korean			English			F	Sig.	Difference*
	n	M	SD	n	M	SD	n	M	SD			
Beginning	1	1.66	0.71	7	2.06	0.79	102	2.30	0.70	0.48	0.62	—
Intermediate	12	2.37	0.76	145	2.29	0.73	76	2.24	0.71	0.34	0.71	—
Advanced	167	2.28	0.70	28	2.29	0.53	2	2.50	0.39	0.25	0.78	—
Total	180	2.28	0.70	180	2.28	0.70	180	2.28	0.70			

* $p < 0.05$ level (Scheffé post-hoc test)

Discussion and Conclusion

Even though there were some surprising outcomes, one must remember the limitations of the study which impacts generalizability. First, there were only 180 Chinese undergraduate students studying in a Korean context. Second, the sample was limited to students who voluntarily participated in the study. Third,

the questionnaire (SILL) used in the study was a self-reported survey and some beliefs or strategies might be missed and may not have captured the actual strategies used by the participants. The participants may report what they think or believe instead what they are actually doing when learning a language. Finally, the current study employed only quantitative approach to collect and analyze data. Other descriptive information or data are not included.

The 180 undergraduate Chinese students in this study spoke three language, Chinese, Korean and English and had received formal instruction in these language for at least 12 years. Thus, when looking at Table 5, it was interesting to note that only 92% of these Chinese students felt they were very fluent in Chinese which leads one to wonder if some of these students were struggling in their native language or were from one of the minority groups in China whose first language is not Chinese. Additionally, 81% of these students considered themselves to be only intermediate learners in Korean but all of them were able to submit a passing score of the TOPIK (Test of Proficiency in Korean). Further, these students had all have at least 12 years of formal instruction in all three language but more than half (57%) felt they were only beginner learners in English. This could explain why in this study language proficiency did not show any statistical differences as some of these students did not feel they had language proficiency in any of the three language.

The findings of data analysis showed that the Chinese students preferred to use compensation strategies over other strategy groups. Language learners employed compensation strategies to overcome the limitations or difficulties in language learning (Oxford, 1990). The participants were studying in a Korean university where the instructional language was mainly Korean, which can be very challenging for many Chinese students to successfully comprehend the course materials written in Korean or English. It makes sense that the Chinese students in this study tended to rely heavily on compensation strategies to process information due to their lack of Korean and English language knowledge and competence. The frequent use of compensation strategies by language learners also have been reported in some previous research studies (Bremner, 1999; Hong-Nam & Leavell, 2007; Oxford & Ehrman, 1995; Wharton, 2000). This indicates that many language learners in various contexts felt comfortable using the compensation strategies to make up their limited knowledge or ability in a target language.

The participants in this study reported affective strategies were their least-preferred strategies. Affective strategies assist learners to control their feelings, emotions, anxieties that can occur during learning a language. Oxford (1990) stated that although affective strategies have big influences on success or failure

of language learning and can be very useful for learners, utilizing affective strategies can be challenging. The Chinese students in this study left their family and friends to study abroad in a new environment. They may have experienced many emotional challenges or difficulties in adjusting to new social and academic environments as all international students do. Reading and writing in Korean or English can be another challenge for many Chinese students, which could lead to low academic performance and feeling burnout or anxious. This may have influenced low use of affective strategies by the Chinese students because they may have felt uncomfortable facing their feelings and controlling their emotion through affective strategies.

Upon further examine when looking at Table 1, it was found that these Chinese students did not use many strategies as only 5% reported a high strategy use. This goes against previous research in which it has been found that good language learners are more strategic, metacognitively aware of their own learning process, and able to problem solve regarding their learning (Rubin & Thompson, 1994; Sheorey, 1999). This may also mean that teachers who have these students at the university will have to purposefully and explicitly teach these students how to use more strategies, so they are more successful at the university level and stop relying on just the compensation strategies (Table 2) which are not used unless one finds themselves in trouble and then they try to compensate for it rather than purposefully planning to use other good strategies.

In this study, we also looked at the use of strategies by grade-level or academic year (Table 4). For this study, there were 97 freshman, 11 sophomores, 59 juniors, and 13 seniors. However, there was a statistical difference in the use of strategies by seniors. For this to occur, the seniors had to have used substantially more strategies than the other grade levels, for there to be a statistical difference as their numbers were so small. This does support some previous research that has shown students of at higher grade level use more strategies (Chamot, 1987; Ok, 2003; Oxford, 1994; Politzer, 1983).

When looking at the difference in strategy use by language proficiency levels (Beginning, Intermediate, and Advanced) in three languages (Chinese, Korean, and English), it was found that there were no statistically significant differences among the three proficiency levels. The consensus of previous research shows language learners at higher proficiency level tended to use more learning strategies (Fazeli, 2011; Rao, 2016; Zarei & Baharestani, 2014). The current study has found different findings and a likely explanation for the contrasting finding is that the big difference in sample size in their language proficiency levels (as seen in Table 5) may have influenced the different findings.

In conclusion, the researchers attempted to investigate the use of language learning strategy of the international Chinese university students attending a university in Korea as well as the difference in strategy use by their academic year and language proficiency levels. This study had presented the empirical evidence and insight of Chinese students' language learning behaviors and thoughts. It was interesting to note that these Chinese students did use a variety of strategies although they were used at low levels. The findings of this study address the needs of these Chinese students in order to enhance their study abroad experience and assist in their academic success and social adjustment. Instructors of universities in Korea should take the account of the findings of current study when working with Chinese students in classroom and encourage them to use more learning strategies to aid the development of their language knowledge and competence and academic performance. The higher education institutions in Korea also play an important role in international students' academic success. It is recommended that the higher education institutions in Korea need to provide the institutional support such as writing center and tutoring to overcome the language barriers. They also need to put more efforts and intentional support to build the education setting on campus that is more inclusive and multicultural-oriented to promote the equity and quality of international student education and their social adjustment.

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**SOCIALLY JUST
LITERACY TEACHER
EDUCATION**

MASTER COURSE DESIGN: EQUITABLE EDUCATIONAL OPPORTUNITIES FOR PRE- SERVICE LITERACY EDUCATORS

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Abstract

Many universities are faced with the challenge of ensuring sections of individual courses are delivered in a uniform manner. This can be a demanding task when faculty with varied levels of education and experience teach the same course with a shared syllabus. Based on the conceptual framework of systems theory and transformative learning theory, this article will explore the advantages and disadvantages of master course design and implementation, as experienced at a small liberal arts university in the Midwest. Issues explored include faculty responsibilities, administrator roles, scheduled trainings, content coaching, delivery methods, instructional practices, technology expertise, and student experiences.

Keywords: Curriculum Design, Higher Education, Master Course, Online Learning, Pre-Service Teacher, Professional Learning Community, Technology

Introduction

This article explores the advantages and disadvantages of master course design within a department of literacy at a small liberal arts university through the lens of systems theory and transformative learning theory. The term “master course”

refers to a course designed within an online learning management system. Those teaching a master course were provided with scheduled trainings and coaching with the curriculum designer, who also acted as lead instructor. In addition, master course curriculum designers also provided instructional procedures and grouping suggestions for faculty. The utilization of the required texts was outlined for faculty to ensure key concepts were discussed and put into practice during courses.

The university taking on the task of master course design has a unique organizational structure. It consists of a small residential campus, as well as multiple off-site campuses. Each off-site campus is made up of a partnership between the residential campus and a local, rural community college. These off-site campuses are positioned across the state. Due to distance, it became essential for the literacy department to ensure that offered courses were equitable among all university sites. In an effort to create equity, the literacy department, along with all other departments across the school of education, created a template that incorporated syllabi, transfer skills, and department pillars. It is of utmost importance for faculty members to ensure all students enrolled in education classes are engaging in similar academic learning experiences. Common higher education practices support the preparation of all pre-service teachers in creating fair and equal learning environments for all future students. Work groups developed a schedule that outlined the roll-out of each new master course with the end goal of all courses being complete by year three. These groups also created an online training course focused on curriculum design in order to provide consistency and understanding within the school. Upon completion of year three, the cycle schedule restarts to begin revisions and updates on a rotating basis.

Theoretical Framework

The framework for master course design consists of systems theory and transformative learning theory. In this context, systems theory is “a set of unifying principals” (Smith-Acuna, 2011, p. 6) around course alignment, process, procedure, and implementation. According to Senge (1990), systems-based organizations, like those found in higher education, must be able to make design decisions matching intended outcomes, recognize design decisions not matching the intended outcomes, and adjust where needed. However, transformative learning theory “seeks to explain the way adult learning is structured and to determine by what processes the frames of reference through which we view and interpret our experience (meaning perspectives)

are changed or transformed” (Mezirow, 1991, p. xiii). Additionally, transformative learning theory provides preservice teachers with the necessary tools to become agents of change within their schools, communities, and society at large. Therefore, system theory grounds the curriculum design process while transformative learning theory grounds instructional practice and social change.

Literature Review

Faculty Responsibilities and Administrator Roles

At the beginning of this process, the department chair reviews the experience and expertise of the full-time and part-time literacy faculty in order to determine which course is assigned to each person. However, before courses are officially assigned, the department chair and each individual have a discussion to determine if both sides feel that this is a good fit. Each curriculum designer/lead instructor is provided with training and coaching from the department chair. Oversight for development of faculty and course content is managed by the department chair, while curriculum design, mapping, and consistency across programs is managed by a curriculum coordinator. The curriculum coordinator is a faculty member outside the literacy department who oversees all School of Education master courses. Curriculum designers develop master courses and then serve as lead instructors over each developed course to ensure that full-time faculty receive the same quality information and level of support as part-time and adjunct faculty.

While developing the master course, the full-time or part-time curriculum designer employs an Understanding by Design (UbD) lesson development philosophy. McTighe and Wiggins (2012) shared that the UbD lesson embraces three stages during the backward design process. While working through the development process, focus on the three stages includes identify desired results, determine assessment evidence, and plan learning experiences and instruction. Stage one requires the designer to determine what students should be able to know, understand, and do after the completion of the course. After stage one is complete, stage two requires the curriculum designer to focus on assessments to demonstrate student understanding of the main concepts and skills. Finally, the master course designer will focus on creating experiences and instructional opportunities for students to interact with the main topics to increase his or her overall understanding of the concepts. As courses are delivered in a variety of digital formats, it is also important to ensure activities work in digital classroom settings as well as the traditional face-to-face classroom setting. Instructors work

through each of the three stages while developing a master course. Each master course includes a syllabus, instructional notes, transfer skills, essential questions, assignments, and final projects.

Next, the course designer is provided a template and meets with the curriculum coordinator for additional instruction over course structure. When literacy faculty complete the full design of the master course, a peer reviewer provides feedback. This feedback can address anything from grammar errors to missing components in content. In order for the feedback to be meaningful, a level of trust is required between designer and reviewer. The process of designing a master course takes over 100 hours, so the designer has a lot of time and energy invested in the course. It is important to have clear and open lines of communication, in order for the feedback to be constructive and valuable. The initial 100 plus hours creates a skeleton for the course. However, the course designer has a clear understanding that revisions will need to occur for the course to reflect the new instructional practices and additional research. Curriculum designers engage in various professional development opportunities with both the university and their own professional organizations to stay current on educational topics related to their courses.

As master courses are developed, the focus shifts to curriculum needs and instructional practices in the higher education classroom. It is key to ensure that the content developed in master courses is engaging as well as informative. Since courses are delivered to pre-service teachers, the master course curriculum designer must be mindful to include opportunities for students to model instructional strategies, interact with student data, and develop resource tool kits to take with them into their own future classrooms. Engagement strategies that are used in the class setting can be mimicked in the classrooms with elementary or secondary students. Technology tools are increasingly common in elementary and secondary classrooms. In fact, many schools are comfortable with technology as a part of the instructional process so that “discussions of whether they should adopt these technologies have given way to questions of how they will use them. In any case, technology should be seen as a way of supporting curriculum objectives rather than as an add-on” (Glatthorn, Carr, & Harris, 2001, para. 50). These are all considerations that need to be addressed by the master course curriculum designer during the development stage of this process. “It is not about the technology; it’s about sharing knowledge and information, communicating efficiently, building learning communities and creating a culture of professionalism in schools. These are the key responsibilities of all educational leaders” according to Marion Ginapolis (Trowbridge, 2014, para. 2). Table 1 below details the major responsibilities of faculty and administrators during this process.

TABLE 1
Faculty and Administrator Responsibilities.

Faculty Responsibilities		Administrator Roles	
Curriculum Designer	Lead Instructor	Department Chair	Curriculum Coordinator
Develop master course employing the UbD philosophy.		Review experience and expertise of faculty.	Manage course design, curriculum mapping, and consistency across programs.
Develop courses which include syllabi, instructional notes, transfer skills, essential questions, assignments, and final projects	Ensure full-time, part-time, and adjunct faculty receive the same level of support for master course.	Meet with faculty to discuss and determine appropriate course assignment.	Meet with curriculum designer upon course completion for additional guidance, as needed.
Design course material that is appropriate for both digital and face-to-face formats.		Provide training and coaching to faculty as both curriculum designers and lead instructors.	
Participate in a peer review process upon course design completion.		Oversee faculty development.	
Participate in professional development opportunities related to curriculum development.		Oversee and manage course content.	
Act as Lead Instructor for developed course.			

Scheduled Trainings and Content Coaching

Once the literacy master course has been developed and approved, the curriculum designer’s role changes to the role of lead instructor. Next, the lead instructor meets with other literacy faculty who will be teaching this course. Faculty are located all around the state as well as on the main campus. Students vary in diversity at all locations, and off-site campus have a higher population of non-traditional students. As the lead instructor, it is important to ensure that the designed course is a good fit for all students at all locations, main campus and off-site campuses. In order to ensure that instruction is delivered in a high-quality manner at all locations, lead instructors meet with faculty before the term starts. During the pre-term meeting, lead instructors provide an overview of the course, main assignments, final projects, and scheduling. This step is key in order to

ensure that communication is encouraged and supported. Lead instructors share how schedules can be developed for a 15-week or 8-week time frame. Students who attend classes on the home campus and students who attend classes at off-site campuses have different challenges, so the pre-meeting is a key collaboration component for all instructors teaching the course. "OBJ" Faculty is provided this information after the student surveys are completed and compiled. Some of the comments are reflective of the faculty; however, comments are also connected to the course as a whole. Prior to the team meeting, faculty have the opportunity to review feedback to share with the whole group. Full-time, part-time, and adjunct faculty can share challenges and solutions from past experiences. After the term has ended, the entire team meets for a post-conference session. During this time, all faculty will share successes and challenges as well as offer helpful suggestions. Student comments can also be shared at this time to ensure that the student evaluations are a valuable tool. If multiple sections of the course, experiences the same challenge, then it is likely that a component of the master course needs to be updated and revised. The lead instructor is mindful of the shared information and uses it to implement any needed changes to the master course.

Lead instructors have multiple responsibilities during the time that the course is being taught. However, communication prior to the beginning of the term is also important. Since adjuncts and part-time faculty members were not able to attend all of the trainings on campus with full-time faculty, a professional learning community (PLC) was developed. DeFour (2014) shared that collaboration is an important part of the PLC process. However, it is key for educators to understand that collaboration requires individuals working together in order to promote a more collaborative culture (para. 15). Due to the fact that multiple sections of each course are being run at various locations, the collaboration component is even more meaningful for the PLC members. During the PLC, full-time faculty members, part-time faculty members, and faculty adjuncts were able to complete common reads and have meaningful discussions about instructional practices, student engagement strategies for delivering content through a variety of formats, and changing needs of the students in the classroom. While all faculty are invited to the PLCs, conflicting schedules result in limited attendance for some individuals. As a result, it is important for the lead instructors to share the knowledge gained during the PLCs with individuals who may not have been in attendance. Also shared by Defour (2014) is the knowledge that the process of a PLC is a new way of working together as a team, but it is hard work to sustain any concept (para. 35). Full-time, part-time, and adjunct faculty have found that hard work and collaboration through the PLCs have led to common understandings associated with master courses.

Technology Expertise

During the development, design, and implementation of master courses, it is imperative that all stakeholders have technology expertise. Curriculum designers must have an in-depth working knowledge of the Learning Management System (LMS) housing the master course, in order to develop a comprehensive course online environment. This expertise includes, but is not limited to, the ability to create web-based content such as voice threads, instructional videos, digital presentations, and content specific websites. Once the course curriculum designer moves into the role of lead-faculty, they must also be able to navigate and explain the technological aspects of the course's communication, assignments, assessments, grading, and resources to all teaching faculty. Additionally, the lead instructor will need to develop web-based Professional Learning Communities (PLCs), in order to provide resources and support to teaching faculty.

Teaching faculty will need the technological expertise to understand the LMS and course components at a level where they can troubleshoot issues by providing and identifying resources and assistance to students. They must also understand how to set-up and navigate various web-conferencing tools and accounts for courses that have been designed to meet both synchronously and asynchronously. Web-conferencing tools can vary between courses and could include, but are not limited to, telepresence units, video conferencing software, and video conferencing websites. However, each teaching faculty member must keep in mind the importance of making connections with students as an avenue to build trust, develop motivation, and create engagement, and continue to engage and develop web-based expertise in order to create these opportunities.

Student Experiences

Technology in the K-12 classroom continues to increase in order to create a more engaging classroom and support students learning at their own rate. "Educators also recognize the importance of developing these technological skills in students, so they will be prepared to enter the workforce once they complete their schooling" (Cox, n.d., para. 2). With this in mind, technology becomes more than just a useful tool, it becomes a matter of social justice. These concepts highlight an area of need for the pre-service teachers. In order to ensure that these individuals are prepared to support the changing needs of the students in their future classroom, the master courses must also have embedded opportunities to teach with technology. Suggested lessons and activities provide exposure and experiences in

the classroom to practice instructional technology. Students are also expanding their own experiences with technology which often results in increased confidences and more willingness to embrace and implement technology in their future classrooms.

Students receive instruction on the home campus and at the off-site campuses; however, due to the fact that the student population is spread to different areas of the state, delivery methods vary. There is value in first reflecting about the types of students who are taking the course and their unique needs. Meral AKSU (2016) states that “Today’s students vary on their educational backgrounds, social backgrounds, lifestyles, life stages, and forms of engagement. Universities vary in curriculum organization, organization of staff, organization of students, organization of space, and reputation and tradition” (p. 9). While focusing both on the pre-service teachers and the needs of the future students in their classrooms, the learning environment and activities are able to reflect the need for social justice and equity. In order to honor students, educators must also create a learning experience that embraces these changes.

Face-to-face instruction is more common on the home campus; however, class instruction has increased using virtual platforms among the off-site campus classes. Blended classes where students receive some content in a life session and then work independently with the content changes the learning environment. Class sizes are expected to be at a minimum of five but, if a location has low enrollment, class delivery will occur in alternative methods. The increased use of technology has allowed students to interact with their peers while not physically being in the same classroom. Pre-service teachers can model lesson plans, have discussions with peers, and work on group projects with other classmates across the state. A benefit of this type of collaboration results in a deeper understanding about student needs across the state rather just in their specific location. However, this state-wide approach and varying delivery models highlight the needs for the master course development and lead instructor duties to ensure that all students are receiving an equal experience.

Conclusion

In conclusion, the process outlined is still in its pilot stages and is continuing to evolve. The advantages of master-course design, as experienced through two literacy curriculum designers and lead instructors, are many. They include opportunities to create equitable experiences for undergraduate students across the state and develop pre-service teacher supports for social change within PRK-12 classrooms. Additionally, advantages for faculty include time to purposefully plan

every aspect of a course before delivery and the clarity of the three-year roll-out. The disadvantages of master-course design are a lack of time and opportunity to collaborate across disciplines, to collaborate across the department, and to collaborate among faculty. One concern with courses designed to this intense level is that it “does not allow staff to change and be flexible as the learning occurs. Student groups differ in how they work through the learning and if teaching is too structured it does not allow for more interactive, flexible approaches for students” (O’Neill, 2015, p. 68). This drawback is an ongoing conversation to ensure that student background experiences and instructional needs maintain a connection to instruction. However, as this process continues to evolve, all involved parties continue to work toward inclusive, thoughtful, and differentiated practices throughout each master course in order to provide a model for equitable quality education for all students.

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CLINICAL LITERACY EXPERIENCES: INFLUENCING PRE-SERVICE TEACHERS' SELF-EFFICACY AND BELIEFS

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Abstract

When well-organized, literacy clinics can serve the needs of university students, researchers, and the greater community. However, university-based clinics have been on the decline since the 1970s. In the present study, we examine this approach to preparing reading teachers – a clinical tutoring experience – to describe how this real-world application of skills influences undergraduate teacher candidates' self-efficacy for and beliefs regarding reading instruction. Our purpose is to advocate for similar field experiences, as we believe the opportunity to design and implement targeted instruction for children can provide mastery experiences known to have a strong positive effect on teacher self-efficacy. Our findings here demonstrate that engaging in supervised literacy tutoring improved students' beliefs about literacy instruction and self-efficacy as reading teachers. Our study has implications for university departments and literacy faculty as they determine the best methods for supporting future literacy teachers in developing literacy content knowledge and self-efficacy.

Keywords: Literacy Instruction; Pre-service Teacher Self-Efficacy; Pre-Service Teachers Beliefs; Clinical Teaching

Introduction

Since the *No Child Left Behind Act* in 2001, great emphasis has been placed on reading education to promote capable readers in all content areas. However, the most recent results from National Assessment of Educational Progress (NAEP, 2015) showed the average reading performance of 4th, 8th, and 12th graders remains below the proficient level. Based on the Peter Effect (the idea that teachers cannot give to their students what they themselves do not possess; Applegate & Applegate, 2004; Binks-Cantrell, Washburn, Joshi, & Hougen, 2012), teachers can hardly be expected to teach what they themselves do not possess; that is, teachers cannot be effective reading instructors if they have not received sufficient preparation and training. If our goal as teacher educators is to promote education for a just society, we need to ensure all teacher-candidates are prepared to be effective teachers of reading.

When well-organized, literacy clinics can serve the needs of university students, researchers, and the greater community. As demonstrated in the opening reflection, these clinical experiences provide teacher candidates with a space to apply knowledge gained from university classrooms and begin to see themselves as professional reading teachers. At the same time, these clinics serve the literacy needs of the community and provide opportunities for research. However, despite these benefits, university-based reading clinics have been on the decline since the 1970s (Morris, 1999).

In the present study, we examine one approach to preparing reading teachers – a clinical tutoring experience – to describe how this real-world application of skills influences undergraduate teacher candidates' self-efficacy for and beliefs regarding reading instruction. Our purpose is to advocate for similar undergraduate field experiences, as we believe the opportunity to design and implement targeted instruction for a small group of children can provide mastery experiences known to have a strong positive effect on the self-efficacy of teacher candidates (Haverback & Parault, 2008). To this end, we collected survey data at the beginning and end of three semesters at a university-based literacy clinic, aimed at answering the following research questions:

1. How does a tutoring experience in a university-based literacy clinic impact pre-service teachers' self-efficacy for reading instruction?
2. How does a tutoring experience in a university-based literacy clinic impact pre-service teachers' beliefs about reading instruction?

Literature Review

Historical Context

Understanding our current context first requires an understanding of the history of university-based reading clinics, as significant changes have occurred since their initial establishment in the 1920s. In the following section, we present a brief overview of this history to better illustrate the potential of reading clinics, as well as help illuminate why they have been on the decline in recent years.

The first reading clinic for remedial instruction was established in 1921 at the University of California, Los Angeles by Grace M. Fernald (Smith, 2002). Additional clinics and laboratories, often associated with university psychology departments, were established during the early 1920s by William S. Gray at the University of Chicago, Samuel Orton at Iowa State University, Mary Dougherty at Johns Hopkins University, and Helen Clowes at Western Reserve University (Pelosi, 1977).

With the advent of standardized testing in the early 1920s, public school administrators began realizing that some children had reading deficits and initiated remediation for what they termed their “retarded” readers (Smith, 2002). Also during this period (early 1920s), William S. Gray and Arthur I. Gates published the first articles pertaining to diagnostic and remedial techniques relying on information gathered in school-based and case studies of reading difficulties (Smith, 2002). The purpose of reading clinics during this early period was to research the nature of reading difficulty, offer tutorial instruction to children experiencing reading difficulties, and to provide graduate students the means by which to learn about reading diagnosis and instruction (Kibby & Barr, 1999).

During the 1930s, the case study approach to reading diagnosis was more fully developed in clinical work. In this approach, a four-step process became the norm: (1) provide description of the child’s personal and academic history; (2) determine results of diagnostic assessments; (3) determine instruction based on the assessment results; and (4) monitor the results of instruction (Pelosi, 1977). A reading clinician or a team of specialists from various medical and areas of social science worked with the child. Standardized reading and intelligence measures, in addition to informal measures, were used to characterize the child’s reading strengths and weaknesses. These were classified in terms of phonics, spelling, word recognition, auditory discrimination, oral reading and comprehension.

From the 1920s through the mid-1970s, reading clinics continued to be associated with universities, and they served to train graduate and doctoral

student practitioners (Morris, 2003). From the 1970s through 1990s, however, university-based reading clinics began losing their prestige and disappearing from major research institutions. A focus on reading comprehension in the 1980s, interest in literature-based instruction, and the whole language movement of the 1980s and 1990s changed the attention of reading professionals from clinical to classroom practice (Morris, 1999). Additionally, inadequate funding for clinical programs, due to limited class enrollment and alleged cost ineffectiveness, lessened administrative support for clinics (Bader & Wiesendanger, 1986; Cassidy & Hanes, 1992). Also during this period, many diagnostic and remediation techniques were published in textbooks; therefore, the apparent need for clinical practice declined.

Potential for Teacher Preparation

Currently, existing literacy clinics typically serve three main purposes: prepare literacy specialists, serve the literacy needs of a community, and provide a site for conducting research (Ortlieb & Pearce, 2013). In the following section, we detail how contemporary literacy clinics train specialists in diagnosis and remediation of reading disabilities.

In many university clinics, graduate students (and occasionally undergraduate students) learn by administering formal and informal diagnostic tests. Following test results, they make diagnoses and typically work with children in one-on-one tutoring situations to practice and experiment with remedial techniques. University faculty supervise the clinical experience and provide input in the decision-making process. Such reading clinic practica allow students to apply information learned in courses to authentic teaching situations (Laster, 1996). In a survey designed to evaluate the effectiveness of one university-based clinic, Carr (2003) determined that classroom teachers and reading professionals felt well prepared in assessment and knowledge of instructional strategies as a result of their participation in an eight-week summer clinical experience. In the same study, both classroom teachers and reading specialists reported they frequently use informal literacy assessment techniques and instructional strategies – learned in the clinical experience – in their daily teaching. Carr concluded that the experiential learning in the collaborative, problem-solving clinical environment was relevant to the clinic students' expertise and professional work in schools.

In order to support struggling readers in classrooms, Strickland, Ganske, and Monroe (2002) suggest that preservice teachers should have experiences administering assessments, analyzing results, and planning instruction to meet student-specific needs. The International Literacy Association's newly released

Standards for the Preparation of Literacy Professionals 2017 (International Literacy Association, 2018) also outlines classroom teacher expectations related to understanding appropriate assessments to gather information and apply literacy content knowledge in designing, implementing, and evaluating instructional materials and approaches. A university-based literacy clinic can provide this service to pre-service teachers as well as professional development for in-service teachers. Allen and Swearingen (2002) examined pre-service and in-service teachers in a clinical setting. The researchers determined that the teachers' direct experiences with at-risk students, supervised by university reading faculty, resulted in a higher level of proficiency in instructional decision-making skills. The pre-service and in-service teachers progressed to higher stages of pedagogical awareness because of their clinical experience.

Theoretical Framework

Our study is grounded in Bandura's (1986) concept of *self-efficacy*, as well as Expectancy-Value Theory (EVT, Eccles & Wigfield, 2002). Self-efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (Bandura, 1986, p. 391). Teachers with high levels of self-efficacy have been shown to be more satisfied in their jobs and experience lower levels of emotional exhaustion (Skaalvik & Skaalvik, 2010). In the present context, this means that a reading teacher with a strong sense of self-efficacy will believe he or she can design and implement effective lessons and instruction and will likely be more satisfied in his or her job. It follows that for a novice teacher to be well-prepared for literacy instruction, he or she needs strong self-efficacy to persevere through the challenges inherent in teaching.

University-based literacy clinics are an ideal place for teacher candidates to build their self-efficacy as literacy teachers. Mastery experiences, or individuals' actual performance of a task, are the strongest and most reliable source of self-efficacy (Schunk & Pajares, 2004). Because of this, it is essential to scaffold early teaching experiences to promote a high chance of success as well as provide opportunities for teacher candidates to make (and recover from) missteps. Without such support, teacher candidates may have negative experiences that lead to poor self-efficacy.

In addition to self-efficacy, we draw upon Expectancy-Value Theory (EVT, Eccles & Wigfield, 2002) to explain why a clinical literacy experience is important to developing literacy teachers. Expectancy-Value theorists posit that people engage in a task when they believe there is a value to it and that they have some

chance at being successful (i.e., expectancy). Expectancies and values are task-specific and influenced by individuals' perceptions of their own competence, their perception of the task difficulty, and their related goals (Eccles & Wigfield, 2002). This suggests that pre-service teachers need experiences and support specific to literacy instruction in order to develop a sense that they may be effective literacy teachers.

There are limited studies examining pre-service teachers' self-efficacy and teaching reading; however, researchers determined that teachers with high self-efficacy demonstrated higher organizational skills, were more willing to try new teaching methods, and engaged students more during instructional time (Leader-Janssen & Rankin-Erickson, 2013). Likewise, a firm understanding of reading content is a key factor in how well a pre-service teacher or teacher can use curriculum materials, assess student progress, determine instructional needs, and differentiate the materials according to student needs (Ball, Hill, & Bass, 2005). Swackhameer, Koellner, Basile, and Kimbrough (2009, p. 72) found that "increasing content knowledge in concurrence with demonstrating the appropriate teaching methods contributed to an increase in levels of outcome efficacy in pre-service teachers." These teachers valued the content combined with pedagogical practices. The combination of content knowledge and the practice of pedagogy is crucial for pre-service teachers' abilities to develop a positive self-efficacy (Meyers & Gray, 2017). Haverback and Parault (2011) found that content specific field experiences, such as tutoring in a university-based reading clinic, had a positive impact on pre-service teachers' understanding of pedagogical practices in reading because the experience allowed the pre-service reading teacher to put learned literacy theories into practice.

Much university-level coursework focuses on the value of literacy education – that is, students learn about the importance of teaching reading and possible strategies for instruction. However, it is frequently not until they reach the end of the preparation programs that they are able to spend extensive time in K12 classrooms developing their instructional skills. In short, prior to these professional experiences, students may value literacy instruction but do not have sufficient evidence to believe that they will be successful as literacy teachers.

As pre-service teachers transition from the role of student to teacher, it is important to have guidance from knowledgeable colleagues. Practical experiences combined with self-reflection have a positive influence on professional growth (Collet, 2012). When university reading instructors modeled, made recommendations, asked questions, affirmed teachers' decisions, and used praise, they scaffolded pre-service reading teachers toward interdependence and collaboration. In a recent review of literacy tutoring in initial teacher preparation programs, the

importance of one-to-one and small-group experiences as a means to transform literacy teaching was noted (Hoffman, Svrcek, Lammert, Daly-Lesch, Steinitz, Greeter, & DeJulio, 2019). Based on self-reflections, the studies indicated that pre-service teachers' confidence in their content and pedagogy increased as a result of their tutoring experiences (Hoffman et al., 2019).

We argue that a clinical tutoring experience, such as those provided in university-based literacy clinics, provide a safe space for pre-service teachers to develop their instructional skills and professional identities. Literacy clinics offer a unique space between the university and K12 classrooms where teacher-candidates are provided with mentoring and support to develop their instructional skills. Frequently, tutors' lesson plans are reviewed by a mentor (either a professor or experienced graduate student) before they are taught, allowing for feedback and revisions. Tutors are also observed by their mentors on a regular basis and receive extensive feedback on their performance. This sort of support provides a proverbial "safety net" for the developing teachers, who then have the opportunity to grow and experience success in literacy instruction.

The purpose of the present paper is to explore the impact of a clinical tutoring experience on pre-service teachers' self-efficacy for and beliefs about reading instruction. We hypothesize that the support provided by graduate students and instructors in this setting will allow pre-service teachers to have mastery experiences that will build their self-efficacy as future reading teachers. Furthermore, we believe that this experience will help cement their beliefs about the critical components of reading education.

Methodology

This study is part of an on-going data collection project at a university-based literacy clinic. The university is located in the western United States in a small metropolitan area. This clinic offers tutoring each fall and spring semester to children from the community, and all tutors are enrolled in a 300-level course focused on literacy assessment and instruction. Prerequisites for tutoring in the literacy clinic include the completion of a comprehensive literacy class (with a 20-hour field experience) and a content-area literacy course focused on instructional practices.

During the tutoring semester, the students first attend five weeks of intensive coursework (five hours per week) focused on reading assessments and data analysis. Students then assess and tutor children from the community twice a week for nine weeks, for a total of 18 contact hours. At the end of the semester, students write a formal report summarizing their assessment results, instructional strategies, and recommendations for future instruction that is shared with the

parents. The participants include 54 undergraduate pre-service teachers seeking elementary level teaching certifications with a focus in literacy instruction.

Measures

At the beginning and end of each semester, we administered the Perceptions, Knowledge, and Interpretation of Reading Assessment survey (PKIRA) (Beachy, 2017). This tool was previously validated with in-service teachers. Beachy (2017) first administered the survey to 178 teachers from 13 different states and conducted exploratory factor analyses to establish the model structure and made revisions to survey items. Next, she administered the survey to a group of 77 teachers in one district and conducted a confirmatory factor analysis. Both absolute and relative fit indices indicated that the model was a strong fit for the data.

For the purpose of the present manuscript, we focused on two sections of the survey. We used the first section to explore *How a tutoring experience in a university-based literacy clinic impacts pre-service teachers' self-efficacy for reading instruction*. This section posed three questions, asking participants to rate how prepared they feel they are to teach children how to read, to support the reading growth of struggling readers, and to use phonological awareness and phonics in teaching reading. These items were answered on a scale of 1 (“not prepared”) to 4 (“well prepared”) and constitute our measure of self-efficacy for reading instruction.

We used the second section of the survey to answer our second research question: *How does a tutoring experience in a university-based literacy clinic impact pre-service teachers' beliefs about reading instruction?* This section asked participants to rate their level of agreement (1 being “strongly agree” and 4 being “strongly disagree”) to a series of 21 statements about literacy instruction. Statements included both practices specific to early literacy development (e.g., “it is important for teachers to demonstrate to struggling readers how to segment words into phonemes when reading”), and comprehension instruction (e.g., “Comprehension can be supported through teaching students explicit strategies to monitor their understanding”). All statements describe research-based best practices for reading, so ideally participants would select “strongly agree” to each.

Analysis

We conducted paired sample *t*-tests to identify areas of statistically significant change. However, because statistical significance is strongly influenced by sample

size (Thompson, 2006), we also calculated Cohen's d effect sizes to describe areas of practical significance.

Findings

Students' self-efficacy for reading instruction yielded both statistically and practically significant growth, suggesting that their clinical literacy experience helped them feel more confident as future teachers of reading. Additionally, we observed shifts in their views of literacy instruction, although not all items demonstrated statistically significant changes. In this section, we first review students' growth in the area of self-efficacy for reading instruction. Next, we examine how students' view of literacy instruction shifted during the course of the semester.

Self-Efficacy for Reading Instruction

All three items measuring students' self-efficacy for reading instruction demonstrated statistically significant changes ($p < .000$) from the pre- to post- tutoring experience administration (see Table 1). Additionally, all three items yielded effect sizes well over 1.00, ranging from 1.54 to 1.92.

Knowledge and Beliefs about Reading Instruction

Of the 21 items measuring students' knowledge and beliefs about reading instruction, 15 demonstrated statistically significant growth. The 15 items demonstrating statistically significant growth yielded effect sizes ranging from modest ($d = 0.34$) to strong (0.86) (See Table 2).

TABLE 1
Growth in Self-Efficacy for Reading Instruction

	Pre-assessment	Post-assessment	p – value	Cohen's d
How prepared do you feel to teach children how to read?	2.35 (0.482)	3.35 (0.555)	<0.000	1.92
How prepared are you to support the growth of struggling readers?	2.15 (0.684)	3.26 (0.589)	<0.000	1.74
How prepared are you to use phonological awareness and phonics in teaching reading?	2.15 (0.596)	3.13 (0.674)	<0.000	1.54

Note: Where appropriate, standard deviations are displayed next to means in parenthesis

TABLE 2*Statistically Significant Growth in Knowledge and Beliefs about Reading Instruction*

	Pre-assessment	Post-assessment	<i>p</i> -value	Cohen's <i>d</i>
Children should read different types of text for different instructional purposes (i.e., decodable texts, genre based children's literature, rhyming texts).	3.38 (0.656)	3.59 (0.532)	0.047	0.35
K-2 teachers should know how to teach phonics (letter/sound correspondences).	3.16 (1.08)	3.85 (0.358)	<0.000	0.86
Picture cues can help children identify words in the early stages of reading.	3.55 (0.571)	3.75 (0.511)	0.026	0.37
It is important for teachers to demonstrate to struggling readers how to segment words into phonemes when reading.	3.41 (0.566)	3.68 (0.507)	0.012	0.50
Phonics instruction is beneficial for children who are struggling to learn to read.	3.29 (0.570)	3.52 (0.540)	0.017	0.41
Repeated readings of the same text is an example of an instructional strategy to improve fluency.	3.20 (0.786)	3.62 (0.595)	0.030	0.60
Teacher modeling of skills during guided reading will help foster student's ability to utilize these skills.	3.55 (0.501)	3.85 (0.407)	<0.000	0.66
Phonics instruction promotes decoding skills.	3.13 (0.701)	3.46 (0.605)	0.004	0.50
Direct, explicit, instruction in phonemic awareness supports students' ability to rhyme.	2.98 (0.764)	3.40 (0.599)	<0.000	0.61

TABLE 2 (Continued)

The teacher thinking aloud during reading promotes students' active construction of meaning and comprehension	3.26 (0.711)	3.72 (0.529)	<0.000	0.73
Comprehension can be supported through teaching students explicit strategies to monitor their understanding	3.35 (0.648)	3.55 (0.475)	0.002	0.35
Literal comprehension instruction can include retelling the beginning, middle, and end of a story	3.12 (0.701)	3.44 (0.571)	0.005	0.50
To grow students' understanding of the relationship between written and spoken word, a teacher could read aloud from a big book while pointing to each word as it's read.	3.29 (0.662)	3.50 (0.574)	0.047	0.34
Effective instruction for word recognition and decoding emphasizes students' development of graphophonemic skills.	3.18 (0.585)	3.38 (0.563)	0.047	0.35
Having students write in a learning log about what they learned and what they do not understand, during and after reading, supports self-monitoring to improve comprehension.	3.05 (0.810)	3.43 (0.503)	<0.000	0.56

Note: Where appropriate, standard deviations are displayed next to means in parenthesis.

The remaining six items did not demonstrate growth that was either statistically or practically significant (see Table 3).

The potential reasons and implications for this finding are discussed in the following sections.

TABLE 3**Non-statistically Significant Growth in Knowledge and Beliefs about Reading Instruction**

	Pre-assessment	Post-assessment	<i>p</i> – value	Cohen's <i>d</i>
K-2 teachers should know how to teach and assess phonological awareness	3.81 (0.437)	3.88 (0.317)	0.252	0.183
Literacy experiences in the home contribute to early reading success.	3.72 (0.492)	3.74 (.442)	0.811	0.042
Time children spend reading or being read to contributes directly to reading improvement.	3.72 (0.452)	3.74 (.520)	0.799	0.041
Learning to use context clues is more important than learning to use graphophonemic cues when learning to read.	2.25 (0.846)	2.36 (0.965)	0.664	0.121
Students without access to literature at home will struggle to become successful readers.	2.58 (0.962)	2.42 (0.991)	0.314	0.163
The teacher is the most influential factor in a student learning to read	2.42 (0.926)	2.45 (0.879)	0.915	0.144

Note: Where appropriate, standard deviations are displayed next to means in parenthesis

Discussion

At the conclusion of their clinical experiences, teacher candidates demonstrated growth in both self-efficacy for and knowledge and beliefs about reading instruction. This finding aligns with Bandura's (1986) theory of self-efficacy being related to mastery experiences – after a multi-week tutoring experience (with mentor guidance and support), students' self-efficacy for reading instruction grew. Not only is this encouraging for the 54 students in this study, but also suggests that similar experiences can help better prepare novice reading teachers.

However, we did not observe growth on all items related to knowledge and beliefs about reading instruction – six items did not demonstrate statistical

significance, and any practical significance was minimal. While we can only speculate as to why these items did not demonstrate the same level of growth, we believe that it is likely due to either (a) superlative wording of items leading to ambiguous responses or (b) students' strong background knowledge leading to ceiling effects.

Relating to the superlative nature of items, two specifically (i.e., Learning to use context clues is more important than learning to use graphophonemic cues when learning to read; The teacher is the most influential factor in a student learning to read) used phrasing such as "more important" or "most influential". We believe that students' individual experiences (both in the clinics and other field experience) would likely influence how they answered these questions. For instance, depending upon the developmental needs of the clients in the clinic, tutors may have spent more or less time on context clues as a comprehension strategy. Such an experience would likely influence whether they believed this was "more important" than graphophonemic cues.

The remaining four items (see Table 3) focused on emergent or early literacy development – topics covered at length in earlier coursework. In fact, the students at this university had already completed a 20-hour field experience in a K-2 reading classroom, so they likely entered their clinical semester with strong beliefs about the importance of early literacy experiences.

The high pre-assessment scores (many averaging 3.7 out of 4 of higher) indicates that the early literacy coursework at this university is developing strong background-knowledge in their teacher candidates. These high scores likely resulted in ceiling effects, where the measure did not allow for student growth to be quantified.

Considered in concert, many of these findings are supported by Expectancy-Value Theory (Eccles & Wigfield, 2002). As we expected, students entered their upper-division clinical experiences with some knowledge of what was important for literacy instruction. For instance, students scored highly on the pre-assessment item *K-2 teachers should know how to teach and assess phonological awareness* (average score = 3.81 out of 4). However, they did not feel well prepared to teach reading using phonological awareness and phonics (average score = 2.15 out of 4). Their beliefs about the importance of this aspect of literacy instruction remained stable throughout the semester, but their self-efficacy for teaching rose to 3.14, yielding a Cohen's *d* effect size of 1.54. In short, at the end of the semester not only did students believe that literacy instruction was important, they also believed they had the skills to be effective teachers.

Implications

Our findings here demonstrate that engaging in supervised literacy tutoring improved students' beliefs about literacy instruction and self-efficacy as reading teachers. Similar to Leader-Janssen and Rankin-Erickson's (2013) work, the current study provides support for the importance of providing opportunities for pre-service teachers to increase their content knowledge and self-efficacy for teaching literacy skills through the means of a supervised clinical practicum experience. Combining the collective content and pedagogical experiences of the group with faculty expertise provides growth opportunities for teacher candidates to link theory with practice and reflect upon their skills as novice literacy teachers (McGrath & Erwin, 2015). The current study has implications for university departments and literacy faculty as they determine the best methods for supporting future literacy teachers in developing literacy content knowledge and self-efficacy.

Limitations

While offering encouraging evidence of the impact of clinical literacy experiences on pre-service teacher development, this study is not without its limitations. Most notably, we collected this data from one university, and further data collection and analysis is required before these findings can be generalized. However, the data was collected over the course of three semesters, suggesting that the findings are not limited to a single group of students or one positive classroom environment. Additionally, as this clinical literacy experience was a requirement for all of our participants, we cannot compare their growth against students in more traditional university coursework. Finally, growth in self-efficacy does not necessarily correlate with growth in skills. Future researchers may wish to conduct longitudinal studies investigating the long-term impact of an early clinical literacy experience on teachers' later instructional practices.

Conclusions

As this study demonstrates, the real-world application of skills provided by a clinical literacy experience has the potential to influence undergraduate teacher candidates' self-efficacy for and beliefs regarding reading instruction. We hope these findings provide teacher-educators the evidence necessary to advocate for similar undergraduate experiences in teacher preparation programs. University-based literacy clinics have been on the decline in recent decades (Morris, 1999). However,

these settings have the potential to further research, serve the community, and, most importantly, prepare teacher candidates to excel as literacy educators.

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1:1—THE POWER OF WORKING WITH ONE CHILD TO DEVELOP CHILD CENTERED PEDAGOGY FOR LITERACY INSTRUCTION IN TEACHER EDUCATION

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Abstract

This study explored the impact of tutoring in a literacy clinic on preservice teachers' understanding of teaching and learning within a situated community of practice. Their stories of pedagogical development are intertwined with their realizations of the complexities of teaching, while focusing on the individual literacy instructional needs of a child through the lens of data informed teaching. How teacher education programs might consider the role of tutoring as clinical field experiences in the pedagogical development of preservice teachers is explored.

Keywords: Literacy clinic, teacher education, communities of practice, Zone of Proximal Teacher Development, preservice teachers

Introduction

In 2011, Etta Hollins called attention to the intensively challenging work of teachers when she said,

Teaching is a complex and multidimensional process that requires deep knowledge and understanding in a wide range of areas and the ability to synthesize, integrate, and apply this knowledge in different situations, under varying conditions and with a wide diversity of groups and individuals. In quality teaching, this knowledge is applied in ways that provide equitable access and opportunities that build upon and extend what learners already know in facilitating the ability to acquire, construct and create new knowledge. (p. 395)

Teacher Education Programs (TEP) are charged with preparing teachers who are able to attend to the complexities of this work, putting into action their pedagogical and content knowledge in order to facilitate learning gains for the children in their classrooms. TEPs need to examine their approaches in order to provide the best possible opportunities within teacher preparation. Research (Darling-Hammond, 2000, 2006) indicates that teachers benefit from education coursework in their preparation that provides opportunities to develop and practice pedagogical understandings. Within teacher education programs (TEP) the role of clinical field experience has been elevated with one of the four standards, Standard Two, of the Council for the Accreditation of Educator Preparation (CAEP) devoted to clinical practice. How these expectations are enacted is worthy of closer study as we consider how preservice teachers navigate the theory and practice of teaching and learning (Ball & Forzani, 2009; Zeichner, 2010), especially with consideration of the possibilities of a social justice lens within child centered teaching.

This move to elevate the role of clinical experience in TEPs is based in the research demonstrating the positive impact of clinical experiences on future teachers' understandings of pedagogy, students, and curriculum (Sayeski & Paulsend, 2012; Leinhardt & Greeno, 1986; Shulman, 1987). However, the aforementioned research centers on the traditional internship models where preservice teachers work in a classroom setting with a mentor teacher and a University supervisor. While these whole classroom experiences are essential in the making of teachers as they learn to navigate the complexities of classroom teaching, one might ponder if preservice teachers attempting to address these complexities with one child might offer a future teacher the opportunity to focus on developing their understandings and skills before attempting to do so while balancing the needs of an entire classroom of children all at once.

Theoretical Framework

The theoretical framework for this study is centered in social constructivism. Constructivism is based on three components: much learning is not seen by an external viewer, learners move through phases of hypothesis-testing, and filling in gaps is a major part of learning. (Tracey & Morrow, 2017). Social constructivism within teacher education addresses the theory of learning with consideration of the preservice teacher's background knowledge and current understandings, the experiential learning opportunity within the clinical experience, and the role of the teacher educator as factors which contribute to the development of knowledge and understandings with real world meaning (Will-Dubyak, 2016).

Teaching is more than content knowledge (Darling-Hammond, 2000, 2006). Teacher preparation cannot happen solely within the context of university coursework, but instead requires consideration of enactment of practice within context. Preservice teachers need to have experiential opportunities to enact content knowledge into practice. Tatto (1996) found that preservice teachers in programs with an integration of field experiences and coursework were better prepared than in programs with a set of required courses and number of hours in the classroom to complete. The experiences of the learner and new learning are the foundations of pedagogy development (Vygotsky, 1997) within the "embryonic community" (Dewey as cited in Cremin, 1961, p. 177). Two key constructs which facilitate the development of these are, situated learning in communities of practice and the zone of proximal teacher development (ZPTD). These two components are grounded in the theory of social constructivism, but further address the role of the community of learners and the scaffolding specific to teacher education.

Literature Review

The foundational framework of social constructivism provides the structure for the learning that can occur in clinical practice such as a literacy clinic. Hollins (2017) called for purposeful, focused opportunities for preservice teachers to develop their responsive teaching skills and to practice their pedagogical decision making in clinical practice where it is highly contextualized in practice. In a literacy clinic, the preservice teachers are able to work with one another and the university faculty to develop and enact instruction, while being immersed in a supportive learning community. With only one child to attend to in determining instructional needs and designing and enacting instruction, the preservice teachers are able to practice the skills they need to provide effective literacy instruction.

Situated Learning in Communities of Practice

Lave and Wenger (1991) put forth the idea that learning occurs through participation in a community of space in social and physical contexts. Teaching is highly contextualized and situated in classrooms (Brown, Collins, & Duguid, 1989), and embedded in the personal experiences of teachers and students (Clandinin & Connelly, 1996).

Wenger (1998) claimed that it is through the recalibrations of experiences and knowledge, new meaning is created and teachers can envision new understandings of themselves within the context that learning occurs. It is through this situated learning in a community of practice that includes faculty, preservice teachers and the children, focused on learning and teaching that preservice teachers build their understandings of teaching practices and develop their beliefs about their impact on learners. Being a member of this community of practice can provide the scaffolded support that Vygotsky referred to as the zone of proximal development (Vygotsky, 1978).

Zone of Proximal Teacher Development

Within clinically based teacher education, Vygotsky's work in developing the zone of proximal development has a significant role. The idea of the Zone of Proximal Teacher Development (ZPTD), developed by Warford (2011), incorporates Dewey's principle of reflection into Vygotsky's ZPD. Warford defines the ZPTD as "the distance between what teaching candidates can do on their own without assistance and a proximal level they might attain through strategically mediated assistance from more capable others" (Warford, 2011, p. 253). The preservice teachers are able to construct their understandings as they navigate between theory and practice in the active, situated context where they are being given the responsibility of one child's literacy instruction. In this way preservice teachers begin at what they know and carefully scaffold their learning in their development as teachers through carefully selected situated and mediated learning contexts that are within their ZPTD. Within the clinical field experience preservice teachers are challenged to develop and strengthen their understandings with consideration of how their work with the child will inform their pedagogical and content learning, as well as the benefits it has to offer for growth opportunities and future application (Warford, 2011). As preservice teachers grapple with instructional decision making based on children's needs, they must respond to the multidimensional situations as they emerge in practice (Hammerness et al., 2005) to meet the immediate and long-term instructional goals adapting to the situation with what they know as they engage in reflective decision making.

Clinically Based Teacher Development Scaffolded in Communities of Practice

The intersectionality of preservice teachers learning from one another within a community of practice, supported by a teacher educator who scaffolds the instruction to provide opportunities for them to develop their understandings with consideration for what they know, and how they enact their learning are the foundational principles upon which this study is both designed and examined.

Methodology

A case study methodology was used to examine the impact participation in the literacy clinic had on the development of the preservice teachers' understandings of the work of teaching and learning within literacy instruction. Trainor and Graue (2013) speak of the "qualitative touchstones" (p. 58) of case studies being complex, evolving, and contextualized. This study was built upon each of these touchstones.

Within an afterschool program held at a local elementary school in a rural area of New England, a literacy clinic was created in the fall of 2017. Kindergarten through fourth grade children attended the program at no cost. The literacy clinic was part of a six-credit literacy course in a teacher education program. For ten weeks of the Fall semester each of the 15 preservice teachers developed and enacted learning opportunities centered on literacy practices twice weekly for 30 minutes with the same first or second grade child. These children were identified by school personnel as children who would benefit from instructional support in literacy. The preservice teachers at the junior level were enrolled in the Dual Certification for Birth to 5 years and Kindergarten-3rd grade in Early Childhood (n13) and Early Childhood Special Education (n2) programs at a small state liberal arts school. In the first five weeks of the semester, the focus was on developing content knowledge that would be foundational for their work including an understanding of children's literature, the relationship between reading and writing, and research-based decision making in a balanced literacy program. In the remaining ten weeks, the class met at the University for the first 1.75 hours before walking over to the literacy clinic together and finishing the remainder of the class.

Within the literacy clinic requirement of the course, several structures were put into action to support the preservice teachers in their work in the literacy clinic. These included a daily log where they submitted their daily plans and rationales for activities planned prior to the clinic and subsequently reported the outcomes and next planned steps following their work with the

student, as well as their daily reflective journal. The students were also divided into triads so they had a smaller peer group for discussion. These triads changed during the semester as the preservice teachers learned more about their students, and transitioned into groups where they had opportunities to collaboratively plan based on children's literacy needs. During the ten weeks of the literacy clinic, time was provided each class period for students to share with the whole class data they had collected at the previous literacy clinic, events that had occurred, or challenges they were facing with their child or data. They also worked in their triads with more specific rehearsals of their plans. At the end of the semester, the preservice teachers each completed a case study on their child and an exit survey.

This research drew upon the experiences of the preservice teachers throughout the semester long experience. Ravitch and Carl's (2016) three-pronged data analysis which includes data organization and management, immersive engagement, and writing and representation, was used as the framework for the data analysis. Data was collected throughout the semester in the form of reflective journals and daily logs, but not considered for the purpose of research until the conclusion of the course. The exit survey was digitally administered on the last day of class. Examination of the data began with the exit survey of the participants recording my noticings as I developed a general understanding of the content of the survey results. Multiple readings of the survey data provided opportunity for the iterative development of codes and themes (Creswell, 2013) which were then triangulated with the reflective journals, and daily logs (Ravitch & Mittenfellner-Carl, 2016) before returning to the theoretical framework so the coding could be both inductive and deductive (Creswell 2013). Through this immersive engagement with the data, memos were used to capture the progression as an active process (Corbin & Strauss, 2015) as the descriptions of the findings developed.

Findings

In examination of the data, themes emerged that provided insight into the impact of participation in the literacy clinic for the preservice teachers' understanding of the work of teaching and learning. The findings suggest that responsibility for a child's learning impacts the preservice teachers' engagement in the course material, opportunities to practice what they were learning about literacy instruction with one child was beneficial, and peer support matters as a context for pre-service teacher development. All names listed are pseudonyms to provide anonymity to the participants.

Responsibility for the Process of Teaching and Learning in the Literacy Clinic

The preservice teachers felt the need to know the material they were learning in the course. Jan said, “It brought our studies to life. We had to do it for our child”. Mary confirmed this when she shared, “It allowed us to experience, to understand, and to have the responsibility for a child’s growth as a reader”.

The responsibility for planning and enacting the learning opportunities for the children was not easy, but they felt the benefit of doing it. As noted by Kelly, “It was hard, but productive work. My child learned, I learned. I was always thinking about how I could make things better, help him learn”. Emily said, “It kind of scared me when I realized how challenging it was with one child, but doing it made me believe I could do it”. They were able to see and experience how their work was impacting the children.

The preservice teachers recognized the role of responsibility and the impact it had on their ways of thinking about teaching and learning. Lori stated,

So much about this experience has helped me grow into a stronger and more confident educator. This is one of the few experiences that I have had at the University where I really felt that I could implement my instructional decisions. I always knew that I had support, but I was on my own, one on one with the student, and I was the one who knew her best. I enjoyed being able to follow through with every step of the instructional process from pre-assessment, planning, implementing, to collecting more data. Because of this, I knew that progress or lack of progress was partially due to my actions.

They realized that the work they were doing for the child was impacting the child’s literacy skills, but also their learning and their abilities to think like a teacher. These experiences where the preservice teacher was responsible for the assessment, analysis of the data, crafting of the instruction, and implementation provided the motivation and engagement for them. They were able to deeply experience how their actions impacted the child’s learning. These experiences provided an authentic and purposeful context for learning.

Opportunities for Practice

The preservice teachers gained insight into the role of practice in the learning process both for the children with whom they were working, and for themselves as they sought to develop their teaching skills. Emily said,

Students need bite-sized pieces of information to learn something and repetition to know it deeply. This is how it worked for me in literacy clinic too. I'm glad I had the chance to practice and grow my understandings of data driven teaching with just one child.

As the semester progressed, the participants came to understand how talking about something and actually trying to do it with the students are different levels of learning, "much like telling your child something versus having him do it" (Mary). The students came to understand how the kinds of tasks we ask learners to do matters in the level of understanding that can be achieved. Lori shared,

It helped me understand how to use the data to plan instruction. Each time, I researched what I needed to do, made a plan, moved forward with my plan (often making changes as it happened), and then reflected on what happened. Doing this process over and over helped me get better at it. It was really hard and sometimes I wanted to give up, but you helped me see that it takes time and effort to grow my teaching practice.

Kelly made connections to motivating her child to practice a skill she was learning and striving to keep her actively engaged. She realized that there was, "So much planning, and then having to change plans as I went". Several students acknowledged that they were able to think more quickly in adapting to the situation in front of them as the semester moved forward.

Over time, they also gained a deeper understanding of how knowing your students impacts the kind of work you can do with them. Jen shared her realization that, "Teaching is so complicated. Trying to do instruction with one child required me to consider so many things, but it also helped me understand the importance of knowing my students, their strengths and needs". Chris acknowledged, "I think I have insight into some of the challenges I will face in balancing the needs of the children in my classroom. This was really hard work".

Throughout the literacy clinic, the preservice teachers were able to develop their content knowledge and pedagogical practices. They were able to make connections between the learning experiences they were having and the learning of the children with whom they were working. They realized the role of practice and nimbleness within practice as being essential to their learning to teach. They

were able to understand the parallelism between “telling” and “doing” for both themselves and for their students.

Peer Support Matters

The preservice teachers worked with one another in different ways throughout the literacy clinic. Within our class they had opportunities to share out the results of assessments they completed with their children. This was beneficial in that even if it was an assessment they did not give to their child, they had the opportunity to see it and consider the results. Alternatively, they could see different results from an assessment given to a different child. One participant said, “In talking with my peers I was able to problem solve the challenges of looking for the important pieces in the data, or see things in a new way”. They spoke to how working in their triads provided opportunities to look beyond just their child. Lori said,

Working in my triad gave me the chance to understand the use of data informed instruction better. Although I was only working with one child, I was looking at data from three children, generating ideas, and helping my classmates with their work.

The work within peer groups led the preservice teachers to think about the individual needs of children as a significant consideration of teaching. Sam said,

Working with the children in literacy clinic reminded me of how unique each and every child is. Hearing from my peers each class about their students had me thinking about my own child. This developed my teaching practice because I was able to create instruction for my child each time we met. In my future classroom, I know I will be differentiating for many students at a time, but being able to do it for one child gave me a clear picture of what this may look like.

The preservice teachers learned much from working with one another. Whether it was specific to their child, or not, the peer-to-peer support and conversations within the class discussions about the happenings in literacy clinic provided opportunities for the preservice teachers to look at their situation more closely or with a different perspective, or it provided them an opportunity to look outward to another tutoring pair to share their perspective

and knowledge. The faculty member was able to pose questions and share insights as the collective knowledge was developed.

Discussion

Darling-Hammond's work (2000, 2006) speaks to the importance of learning in practice within teacher education programs, and how this shapes the work of future teachers. Through this experience in the literacy clinic, the pre-service teachers were able to practice their teaching skills using the literacy content they were learning in the University course with one child in a community of practice. This situated community of practice (Lave and Wenger, 1991) allowed them to develop their identities and confidence as teachers in a way that asked them to develop new understandings while focusing on the literacy needs of one child, not balancing the needs of many children in a classroom setting. They worked together sharing their knowledge and understandings and benefited from the support they offered one another through their personal experiences (Clandinin & Connelly, 1996) within the literacy clinic context (Brown, Collins, & Duguid, 1989).

In consideration of the ZPTD (Warford, 2011), this appears to have been effective as the preservice teachers considered what they were actually experiencing and how they were thinking about their future classrooms. On many occasions they talked about the complexities and challenges of the work they were doing within the literacy clinic. This experience allowed them to stretch the boundaries of their knowledge and understandings of teaching and learning while focusing on the literacy development of one child. Through authentic engagement with the actual work of teaching a child, the preservice teachers felt ownership of the iterative process of teaching and learning and were motivated to engage purposefully to meet the children's needs. The literacy clinic was an experiential learning opportunity for the preservice teachers to construct their understandings of teaching and learning in an authentic setting (Will-Dubyak, 2016), and thus provided many opportunities for the development of pedagogical understandings (Vygostsky, 1997) in ways that allowed the preservice teachers to be successful in developing their teaching skills. With consideration of CAEP Standard 2, this experience demonstrates the importance of a variety of clinical field experiences, not just related to grade level, or location, but the type of experience for preservice teachers. Preservice teachers need opportunities to focus on the impact of their teaching on learning. Just as we do not ask young readers to read entire paragraphs before we ask them to recognize letters or sight words, why would we ask future teachers to balance the needs of an entire class without first focusing on one child?

Limitations

The limitations in this study include the volunteer nature of this study as well as the population of preservice teachers and the geographical region in the study. The findings are highly contextualized and generalizability is not recommended, nor can broad assumptions be made from the findings. Although this was a highly contextualized case study of preservice teachers in a literacy-based clinical experience, the findings from this research might be applicable to other TEPs who are considering how they might structure clinical field experiences within their program.

Implications for TEPs

Opportunities for preservice teachers in a community of practice to focus on an individual child's needs as the future teachers enact their learning over time has the potential to benefit the growth of teaching practices and ways of thinking (Darling-Hammond, 2000, 2006; Tatto, 1996). With consideration of the ZPTD, the consideration of smaller scale or a 1:1 context can provide opportunities for preservice teachers to develop a child centered framework to focus their pedagogical practices (Warford, 2011). As the preservice teachers actively engage in the work of teaching they will have opportunities to build their understandings in purposeful ways that lead to higher levels of transference (Bereiter, 2001). TEPs should consider the progression, scaffolding, and types of clinical experiences the preservice teachers have as they develop their pedagogical frameworks for meeting children's learning needs.

Conclusion

As TEPs consider how they might best prepare teachers for the complexities of the classrooms ahead, it is important not to just add additional field experiences in classrooms, but instead consider how they might scaffold opportunities for preservice teachers. Hammond's work (2000, 2006) has shown the essential nature for future teachers to learn from practice, but TEPs must consider how the experiences provided shape the foundational understandings of teaching and learning for the preservice teachers. We need to know more about how we might best structure these experiences, the effective lengths of such experiences, and also how we might best align or integrate the course and field work to best serve the preservice teachers in their preparation for the classroom.

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MAKING WRITING ASSESSMENT PERSONAL: IMPLEMENTATION OF A REVISED WRITING INVENTORY IN A READING DIAGNOSIS COURSE

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Abstract

The purpose of this study was to implement a revised informal writing inventory in an undergraduate reading diagnosis course and obtain information on how teacher candidates (also tutors) learned how to administer the writing inventory and what they noticed after conversing with and constructing a narrative with their tutees. Collected data in the form of writing inventory administration recordings, accompanying transcripts, writing samples, and scoring rubrics were analyzed and the following themes emerged: making the most of the photo to prompt conversation; the hard parts and the ways tutors and tutees worked together; the asymmetry of tutor and tutee talk; and a heavy emphasis on spelling and using the scoring guide. The findings of this study lead to several implications, especially ways to enhance not only the reading diagnosis course, but other reading courses leading to elementary certification.

Keywords: Informal writing assessment, authentic writing, discourse, qualitative research

Introduction

Quite often, when children write in school, it is on demand and in response to a prompt, an idea that an adult has generated. However, children need to “feel some ownership” of their stories (Clay, 2005, p. 55). Calkins (1994) said,

we care about writing when we write with, for, and about the people who matter to us, and when we write about or ‘off of’ the issues and experiences that matter to us. Youngsters aren’t any different. They, too, will care about writing when it is personal (p. 14).

It is important that children’s stories are heard and that all voices are valued (Calkins, 1994; Graves, 2013). Teachers can promote equity for all learners by “celebrating and encouraging” children while they compose and construct narratives (Routman, 2018, p. 239). Clay (2005) wrote about the process of eliciting children’s ideas for writing as the following steps: the teacher poses a question to the child about an experience; she builds on the child’s story if and as needed; and prompts the child to write what was said. Furthermore, teachers who excel at this process are truly interested in hearing what the child has to say and children are aware of this (Graves, 2013). Rodgers (2000) described this process:

What seems to be a casual conversation between child and adult...is actually an excellent example of a highly skilled adult moving a child through his zone of proximal development...The teacher does [this] through her questioning, telling, directing, demonstrating, praising, and confirming moves (p. 79).

Traditionally, reading diagnosis courses at the university have been designed to prepare future educators to administer reading assessments and use the collected data to plan reading instruction (i.e., building comprehension, fluency, phonological awareness, and word study skills). Writing instruction often takes a backseat. A review of the literature revealed that reading clinics across the country invest more time and resources into reading than they do writing (Bader & Wiesendanger, 1986; Bates, 1987; Cuevas, Schumm, Mits-Cash, & Pilonieta, 2006; Garrett, Pearce, Salazar, & Pate, 2005; Hoffman & Topping, 2001; Irvin & Lynch-Brown, 1988). However, it is wise to incorporate writing into tutorial sessions when possible because “if assessments focus on reading and ignore writing..., instruction will be...narrow” (Johnston, 2010, p. 603).

The purpose of this study was to implement a revised informal writing inventory in an undergraduate reading diagnosis course and obtain information on how teacher candidate (TC) tutors learned how to administer the writing inventory and what they noticed after conversing with and constructing a narrative with their tutees. The original inventory, developed by Dr. Jack Cassidy specifically for this course, consisted of a composition writing task where the children were asked to respond to a stimulus, in the form of a photo, that their tutor brought to the tutorial session based on previous conversations with the child. These were stock photos that tutors located on the Internet and usually contained images of animals, sports, and popular television or movie characters. We have revised the inventory to address the children's experiences by instead inviting the children to bring photos of family members, friends, or pets. We made this change so that the tutor might engage the child in a more meaningful conversation and help compose a personal narrative, thus motivating the child to write.

The findings from this study may help instructors of reading diagnosis courses implement a useful tool that teacher candidate tutors can utilize to engage their tutees, get them excited about writing, and design subsequent instruction that meets students' needs. Analyzing the tutors' writing assessments may help instructors to build on the writing instruction knowledge base of students enrolled in this course. The findings from this study will also add to the sparse literature that exists on writing instruction in reading diagnosis courses.

The research questions that guided the study were: In what ways do teacher candidate tutors enrolled in a reading diagnosis course administer and reflect on an informal writing inventory in which they use a photo that is meaningful to the student as a prompt? How do teacher candidate tutors support meaningful talk before and during writing?

Theoretical Framework

Children learn by engaging in social acts with others and their oral language supports later written language (Vygotsky, 1978). This includes conversations that occur between a tutor and child prior to inviting the child to write. These conversations are part of the composition process, before pencil hits paper. Clay (2005) encouraged the teacher to talk about something meaningful to the child first in order to "extend language" (p. 51). Clay asserted, the "best available opportunity for the...teacher lies in the conversations she has with the child" (p. 51).

Gambrell (2011) and Guthrie and Wigfield (2000) emphasize that readers must be engaged to be proficient at the task. So must writers. Cambourne (1988) emphasized engagement in and modeling of writing are requirements

for learning to write. Bromley, (2015 added that this includes being “allowed to make decisions” (Bromley, 2015, p. 290). In a study where seven-year-olds were allowed to choose their topics for writing, they wrote four times as much as children who were provided with topics (Graves, 1975).

Literature Review

Writing Assessments

Certain components are essential for administering an effective writing assessment, such as utilizing a well-constructed rubric and making observations of students’ writing processes (Gunning, 2017; Miller, 2009; Teale, 1988). Information about students’ strengths and weaknesses in writing should not come solely from data collected during formal tests, but from other assessments that are observational in nature (Teale, 1988). A wide variety of formal and informal writing assessments are needed to accurately portray students’ writing abilities in order to create appropriate interventions. Romeo (2008) recommended that students be interviewed individually to learn about their interests and feelings. This inventory of information allows teachers to determine students’ writing interests, their perception of their writing abilities, and their self-efficacy as a writer (Romeo, 2008). In addition, it is important for educators to pay attention to how assessment administration may affect students’ ability to remain attentive and follow instructions, as well as their reaction during individual versus large group testing.

According to Teale (1988), it is important to not overgeneralize about a child’s capabilities, as the complexity of writing requires a number of processes and tasks. Teachers need to establish the purpose for writing and gradually help students do the same (Miller, 2009). Often, students do not know what to write or how to find ideas and this can adversely affect their attitude toward writing.

Teacher Candidate Attitudes Toward Writing

One study by Hall (2016) suggested that TCs’ attitudes toward writing instruction are well established by the time they enter college. Other researchers (Gallavan, Bowles, & Young, 2007; Morgan, 2010) suggested that teachers entering the field who carry negative perceptions of themselves as writers or who have had limited experience writing may be less likely to engage students in regular writing in the classroom due to lack of confidence in writing instruction. Alternately, TCs who see themselves as writers tend to teach writing more regularly and elicit a love for writing in their students (Street, 2003).

Teacher candidates' beliefs can evolve if they engage in critical self-reflection, receive instruction in writing methods, and practice implementing new forms of instruction (Mezirow, 1990; Ng, Nicholas, & Williams., 2010; Zimmerman, Morgan, & Kidder-Brown, 2014). Zimmerman et al. investigated the experiences of 43 early childhood TCs and found that introducing research and theory related to writing instruction, pedagogical tools (e.g., how to organize and manage a writing workshop), and opportunities to use these tools in the field had positive effects on shifting their attitudes toward teaching writing.

Teacher Candidate Experiences with Writing Instruction and Assessments

Although the amount of literature related to teacher candidates and writing instruction and assessment is slim, there is evidence that, during a structured course in writing, or a literacy course with a heavy emphasis on writing instruction, teacher candidates can develop pedagogical knowledge in this area. Three studies (Fey, 2003; Friedman, Zibit, & Coote (2004); Fry & Griffin, 2010) reported that preservice teachers exhibited growth in the kinds of feedback they gave their students and how they evolved from simply grading students' work to responding meaningfully and with care. Gibson (2007) discussed how their preservice teachers' knowledge about writing instruction expanded in depth, as well as breadth.

Several studies looked closely at teacher candidates' knowledge of writing assessment, specifically. Bintz and Shake (2005) required undergraduate teacher candidates in their course to create their own writing portfolios with a variety of genres in an effort to stress the importance of teachers as writers and teachers as assessors of authentic writing. After having the preservice teachers reflect on the writing process and their growth as writers, the researchers determined several positive outcomes. The teacher candidates better understood the process of collecting and assessing writing and they learned ways to help their future students engage in the writing process. In a study by DelleBovi's (2012), nine preservice teachers enrolled in a foundations of literacy instruction course learned how to score writing holistically. They practiced scoring essays alone and with partners and compared their results. As a class, they noted their most frequent comments and collected these to use in the future. These preservice teachers grew in their abilities to use rubrics to evaluate student writing. Dempsey, PytlikZillig, & Bruning (2009) found that their preservice teachers' skill in assessing students' writing using a writing traits rubric grew, as did their self-efficacy in the area of writing assessment.

Dialogue and Interactions During Writing Instruction and Assessment

Dialogue, interactions, and relationships formed between tutor and tutee during writing interventions and tutoring sessions contribute to the success of the tutoring. Hardman (2016) explained how a teaching exchange occurs, and that it includes an initiation (the tutor asks a question), a response (the student answers), and a follow up (the tutor provides feedback). The tutor prompts the student to stay focused on content and organization and there is discussion and negotiation of the meaning behind their writing (Weigle & Nelson, 2004).

Tutors need to know how to build rapport, how to talk about writing, and ways to guide children through the writing process (North, 1982). Weigle and Nelson (2004) found that extended tutoring sessions of 10 weeks allowed the relationships of tutors and tutees to develop and they learned to “read” each other in the process. The tutor was able to understand the tutee’s nonverbal communication and respond appropriately when the tutee was discouraged.

Research has explored the idea of children’s oral storytelling and how this contributes to their oral language development (Wright & Dunsmuir, 2019); allows children to speak at length on a topic (Riley & Burrell); and improves students’ use of oral story grammar (Spencer, Petersen, Slocum, & Allen, 2015). Wright and Dunsmuir (2019) found that storytelling interventions may provide children with frameworks of oral language that help to develop their writing skills. According to Dunsmuir and Blatchford (2004), a student’s oral vocabulary when they begin school is often a predictor of their later writing skills. Furthermore, oral vocabulary has been found to contribute to the writing abilities concerning children with specific language difficulties (Dockrell, Lindsay, Connelly, & Mackie, 2007).

Gunning (2017) and Lily and Fields (2014) asserted that utilizing photographs assists students in the writing process and can draw out a student’s interest. Lily and Fields conducted a study where informal assessments were administered before and after using students’ photographs during writing. The findings revealed students were excited and motivated to write; their written texts were expressive and detail-oriented; their critical thinking skills increased; and they participated in more conversation with their peers and families. The same study also found that English Learners were more talkative, creative, and involved in their projects. Combining photographs and writing allows students to write real or imagined stories that have personal meaning (Lily & Fields). When students use their own photos as stimuli for writing, they understand the subject matter better, they become the expert, and they enjoy writing (Van Horn, 2008).

A review of the literature illustrates the need for further research in the area of preservice teachers' pedagogical knowledge related to writing. There is a need for the inclusion of more writing instruction and assessment in reading education courses. Teacher candidates deserve authentic practice in tutorial settings to implement what they are learning in courses and to see themselves as writing teachers. In 2014, Morgan and Pytash wrote that, during the course of the previous 20 years, there were few articles published on preparing preservice teachers to be teachers of writing. This study supplements the literature by describing how writing can be included in a reading diagnosis course.

Methodology

The purpose of this qualitative multi-case study was to explore the ways in which teacher candidate tutors enrolled in a reading diagnosis course administer and reflect on an informal writing inventory in which they use a photo that is meaningful to the student as a prompt. Case studies of tutor and tutor pairs were conducted in order to “recognize essential similarities” and “add to experience and improve understanding” of the ways in which teacher candidates initiate dialogue with children for writing assessment purposes (Stake, 1978, p. 7).

Role of the Researchers

The first author is an associate professor of reading education and has taught the reading diagnosis course several times (the context in which this study occurred). The second author is a former doctoral student at the same university as the first author and has assisted with the reading diagnosis course. The third author is a current doctoral student at the same institution and previously taught the reading diagnosis course. None of the researchers were instructors for either of the two courses where data was collected for this study.

Participants and Setting

The participants for this study were eight undergraduate teacher candidates enrolled in three sections of a diagnosis and correction of reading problems course at a regional university in South Texas and their tutees, ages six through twelve. See Tables 1 and 2 for demographic information.

The first five sessions of the course were taught traditionally, as the instructor disseminated information about children reading and writing below grade level and the assessments that might be used to determine who these students are as readers and writers and how to best provide intervention. In the following

TABLE 1*Demographic information about tutor participants*

Tutor	Age	Sex	Ethnicity	Degree Program
Beth	21	F	White	All Level Special Education
Heather	21	F	White	Secondary English
Juanita	26	F	White	4-8 Math
Katia	23	F	Hispanic	EC-6 Reading
Kristina	20	F	White	All Level Special Education
Melanie	29	F	Hispanic	EC-6 Reading
Molly	22	F	Hispanic	EC-6 Reading
Rosie	33	F	White	Applied Science

TABLE 2*Demographic information about tutee participants*

Child	Age	Sex	Ethnicity
Beth's tutee	8	F	Hispanic
Heather's tutee	10	F	Hispanic
Juanita's tutee	7	F	Hispanic
Katia's tutee	8	M	Hispanic
Kristina's tutee	7	F	Hispanic
Melanie's tutee	10	M	White
Molly's tutee	8	M	Hispanic
Rosie's tutee	8	F	White

eight class sessions, traditional class was held for one hour, and each undergraduate student then tutored an elementary-aged child for one hour on the university campus. The course instructor was present during this time, moving throughout the classroom and stopping every few minutes to listen in on lessons. Tutoring sessions consisted of instruction in the areas of reading comprehension, fluency, vocabulary, word study, and writing.

Data Collection

The following data was collected to be able to view the informal writing inventory through several lenses.

Informal writing inventory sample, photo stimulus, and rubric. Each tutor submitted the writing sample collected during the administration of the writing inventory, along with the photo stimulus and a completed scoring rubric (see Appendix A, adapted from Culham, 2003) and anecdotal notes related to the child's writing. These writing samples and photo stimuli assisted in the data analysis process, as they served as visuals of what the tutors and tutees were discussing. The rubric was collected as a means to see how tutors described their students' use of the six traits.

Recordings and transcripts of the tutors' administration of the informal writing inventory. The first author trained the tutors in both sections of the course on how to administer the writing inventory and provided explicit instructions and demonstrations. The tutors recorded their writing assessment administrations (the conversation prior to and any discussion that occurred during the actual writing time) with their students. It was necessary to record and transcribe this part of the lesson to be able to analyze the tutor and child discourse.

Written interview with teacher candidate participants. Each teacher candidate completed a written interview (Appendix B) immediately following the informal writing inventory administration with their student during the second session of tutorials. The written interview was collected in order to compare what the tutors said they did with what they actually did during the lesson as evidenced by the recording and transcript.

Data Analysis

We listened to each writing inventory administration recording, while reading the accompanying transcript, in order to analyze the language, volume, tone, and amount of talk that occurred while the tutors engaged their students in conversations about their photos. Initial (open) and line-by-line coding (Saldaña, 2013) were conducted on hard copy transcripts of the writing inventory administration. These codes were then grouped together to form the following themes: making the most of the photo to prompt conversation; the hard parts and the ways tutors and tutees worked together; the asymmetry of tutor and tutee talk; and a heavy emphasis on spelling and using the scoring guide. Finally, we analyzed the written interviews, using these determined themes, to understand how the tutors felt about using the inventory and the ways in which it helped them get to know their children as writers. See Figure 1.

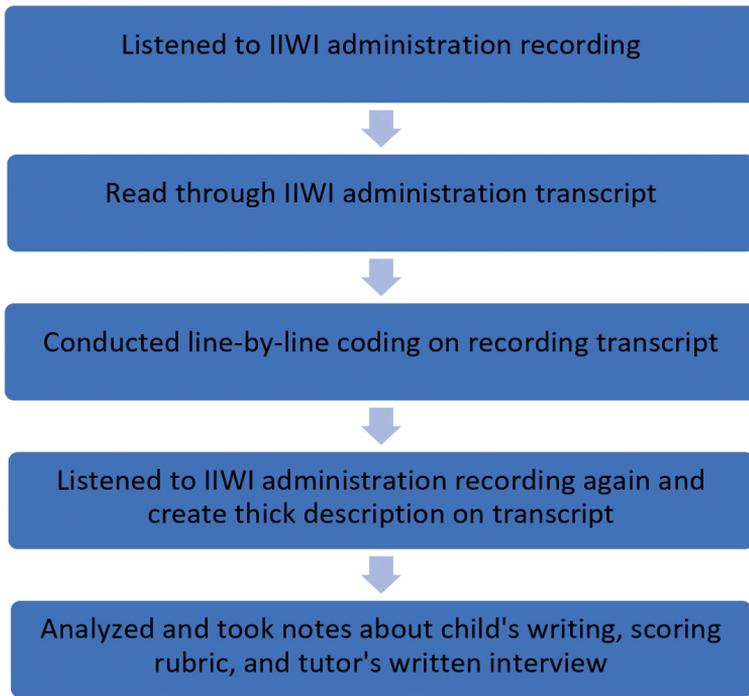


Figure 1. Data Analysis Procedures

Trustworthiness

Triangulation was used in that four pieces of data were collected: child's writing sample; tutor's written interview; and the recording of the inventory administration, as well as the accompanying transcript. Two of the research team members listened to the recordings and read through the transcripts separately and then convened to compare notes and refine categories. Thick descriptions of writing inventory transcripts were created while listening to the accompanying recordings of each conversation. The informal writing inventory used to assess the children's writing has been used in some form in this course on our campus for about 15 years. The rubric was adapted from the 6+1 Traits of Writing rubric that has been widely used since its publication in 2003.

Findings

The findings are presented here by theme to answer the research questions. Major findings were related to: making the most of the photo to prompt

conversation; the hard parts and the ways tutors and tutees worked together; the asymmetry of tutor and tutee talk; and a heavy emphasis on spelling and using the scoring guide.

Making the Most of the Photo to Prompt Conversation

Use of the photo. Five of the tutors mentioned that the photo was a helpful tool in prompting the conversation and subsequent writing. The children enjoyed sharing their photos with their tutors and were excited to tell their stories. The photos served their purpose of sparking ideas for writing and two tutors, Beth and Katia (all names are pseudonyms), discussed in their interviews how they made it “easy” to engage their tutees in authentic conversations. The personal nature of the photos was also included in comments. As one tutor, Rosie, stated, “That was really cool. . . I’m not showing her a picture of any puppy; I’m showing her a picture of her puppy. She wouldn’t have been as excited with any photo.”

Prompting and conversing. Most tutors prompted their tutees while they were constructing their stories on paper. In all cases, the goal of the prompting was to entice the children to add to their writing. Four of these tutors, in their written interviews, discussed their reasons for doing so. They mentioned that the prompts that were provided as part of the writing inventory administration directions and suggested for use were “easy to use to talk to [the] student” (Melanie) and helpful, especially in case the child and tutor got “stuck” (Kristina). Other tutors commented that “[the prompts] didn’t seem scripted” (Kristina) and that they helped them learn what “would invite the student to write” (Juanita). One tutor wrote that she had difficulty coming up with other prompts on the spot and knowing for sure how to use the prompts to solicit more writing (Rosie). Table 3 lists some examples of this prompting, as well as the correlating tutor comments.

Learning the importance of the discourse that sometimes occurs prior to writing was evident in the tutors’ comments about the assessment. Having time for genuine conversation, for them, made the task seem less like a test, as the following comments show. “It [the inventory] wasn’t too extensive, like administering a [state standardized test]” (Kristina); “It made it not so much like an assessment, but something fun to do” (Rosie). They also said that the inventory set up the discussion over the photo to be “more natural” (Rosie) and “like a chat” (Kristina). The children, therefore, seemed more excited to write since they “talked about what [they] might write before [they] wrote it” (Molly).

TABLE 3*Tutor Prompting During Children's Construction of Text*

Tutor	Prompt	Tutor Comment
Molly	Was this your first time seeing snow? (when the child was telling a story about her snowman's eye falling out)	I was doing the questioning for him so he could like get his thought process going about the picture
Melanie	Anything else you want to add? Anything about that day?	He wanted to stop writing after two sentences, but with prompting he was able to complete one more.
Beth	Write it like a story. Like someone who has never seen the picture... you want to tell a story about that day.	I tried to give her some ideas by prompting her.

Tutees' strong storytelling skills. All tutors reported that their tutees were strong oral storytellers. Here are two examples.

This was the day of my percussion performance. My grandma and my grandpa were there to see it and um, I think it was like really special because My teacher isn't going to be here for much longer. Because she still has to do college and stuff. And I think it's funny how long she took the picture with me. She did the same face that I always make in pictures to... to just be funny. (Melanie's tutee)

And my grandma got caught taking the picture. And we built like the miniature snowmen and we used my grandpa's hat, but it covered the whole entire snowman. Then we made another one and well its eye fell out. My mom just told me to break it. So I did that, but I did it a way that I like to. I started yelling, then I ran right into the snowman. It was cold. (Molly's tutee)

In these examples, the children shared their stories using details and complete thoughts. They responded fully to their tutors' prompting about the photos they brought to the lesson. Three tutors wrote how their students had many ideas, yet were unsure of how to put everything together into a coherent piece of writing. One tutor discussed how "chatty" her student was (Kristina). Another (Katia) said that her student "talked a lot about the photo, but struggled with recreating the story on paper." Yet another (Juanita) told us that her student

displayed “easy confidence” when talking about her photo and responding to the tutor’s questions, but had trouble writing down her ideas. Heather experienced a similar occurrence when her child had a “very hard time thinking of things to write down even though [they] had just spent time discussing all of the details that she could write.”

Kristina wrote that her child was “kind of all over the place,” but that she could tell she “knew what she was talking about,” so it was up to the tutor to help the child encode the story onto paper. She went on to say that the child told her story in complete and complex sentences, but when she went to write it, she would just shorten her sentences, “just to get through with [the writing].” Another tutor, Juanita, similarly reported that her student had “extreme difficulty” figuring out a story plan, so the tutor provided her with open-ended prompts, to which the child responded with one-word statements. Likewise, Rosie lamented that her student wanted to initiate the writing, but kept getting “lost” and did not want to finish a sentence, so she said she had to keep “redirecting” her. This was verified in the transcript, as the analysis revealed that the tutor continuously redirected her and the child did eventually get back on track. A similar situation occurred with Kristina who redirected her tutee by saying, “Well, maybe we should get started writing. Don’t you think? So tell me about this day, but write it down. What you just told me you can write down.”

The Hard Parts and the Ways Tutors and Tutees Worked Together

The tutors were surprised that their students experienced so much difficulty when asked to write. They entered the tutoring experience with high expectations and seemed disappointed by the reality of what their students could actually do, calling it an “eye-opening” experience. One tutor (Heather) said, “She is a great reader, so I expected the writing to match – that’s not what happened.” This section provides findings related to these difficulties.

Tutees’ attitudes toward the writing task. On their written interviews, four tutors commented on the attitudes of their tutees during the informal writing inventory administration. The following comments demonstrate how the tutors perceived their students’ attitudes related to writing.

- *[My student] seemed excited to write at first during our conversation, but was then negative when asked to start writing – his attitude and demeanor changed* (Katia).

- *She told me that she does not enjoy writing* (Beth).
- *She enjoyed sharing information about the picture, but when it came time to write, she completely shut down* (Heather).

When asked to write about the assessment, four tutors wrote about how their students seemed unsure of how to go about the task of recording their stories on paper. One tutor said, “He kept asking me, ‘What do I write?’” (Katia). Juanita indicated that, when it came to the actual writing part of the assessment, her child “appealed for confirmation” and “struggled with the free-flowing and creative process of writing.” The audio recording revealed this, as Juanita asked a couple times, “What else can you write?” Heather experienced something similar with her tutee, as she said she was “hesitant” and “look[ed] at [her] because she didn’t know what to write.”

Tutor encouragement and frustration. There were many instances where the tutors gently encouraged the children and showed patience and understanding, as coded throughout notes taken on the recordings and transcripts. Three tutors (Kristina, Juanita, and Melanie) used calm and soothing voices during most interactions with their tutees and rapport was evident because of the natural conversations that occurred. One tutor, in particular, Rosie, had to continuously encourage her student, as she veered from the task several times by telling silly stories about her dog. Rosie patiently nudged her by reinforcing the child’s ideas and steering her back toward her topic. An example of this from their conversation is as follows.

Okay, are you going to write anymore? Tell me about who’s in the picture – your family. Let’s talk about that. Remember everything we talked about? Let’s write about that.

In her written interview, Rosie wrote that she had to “keep pushing her” and that it took “a lot of encouragement to keep her going.” The notes taken on the transcript indicated that the tutor was “enthusiastic” and “encouraging.”

Because all tutors expressed that they experienced difficulty getting their tutees to construct a story on paper, each of them also expressed a small amount of frustration. For example, Molly said, in her written interview, that it was “hard to get [her child] to write a whole page.” It was evident when reading the conversation transcript and listening to the accompanying recording that three tutors felt discouraged near the end of the writing time. When her tutee had only

written a few lines after 10 minutes, Katia said, “Just try... or you know what we can just do? Let’s just try writing their names and then we’ll do everything else. Okay? Just keep writing what you think. Everything you can.” This resulted in a long silence, and the child did not continue to write.

The Asymmetry of Tutor and Tutee Talk

After the transcripts were completed, it was immediately noticed, that in most of the interactions, there was a lack of balance in tutor and tutee talk. There were, however, two tutors who spoke fewer words than their tutees. See Table 5 for ratios of tutor/tutee words spoken.

Six of the eight tutors spoke almost twice as many words during the conversations than did their students about the photo that occurred prior to and during the writing assessment administration. After a careful coding of these conversations, the following findings were discovered, which may explain the high amount of tutor talk. Tutors used some strategies that were positive and that were necessary to move the conversation and writing forward, and others might have actually been counterproductive. For example, one tutor used many words to direct the student what to do on the inventory.

Okay, now what we’re going to do is...all those details and everything you told me about this picture, I want you to take those and put it into your writing. We’re going to write for a little while, okay? So, everything you want to tell me about the stuff we just talked about that makes the picture special... who’s in it, why you like it, you can write about any of

TABLE 5
Ratios of tutor and child talk

Tutor	Tutor-to-child talk ratio
Beth	3.5 : 1
Heather	2.3 : 1
Juanita	2 : 1
Katia	1.6 : 1
Kristina	1 : 1.1
Melanie	1.7 : 1
Molly	1 : 2.3
Rosie	1.6 : 1

that stuff. Just write about that picture. And no rush, take your time.
(Melanie)

This tutor gave the child so much information in one prompt that the child responded with a very brief answer that was in the form of a question because she was unsure what to do next. Other children, after presented with several questions in a row, responded with a one- or two-word response or “mhm.”

Let's see... you could start off with the beginning of the day, or you could start by describing what happened in this picture... Think of something that happened that day that was really fun. Like usually with the story you start with the beginning of what happened. So start it however you think you should. Like what happened after y'all got to the beach? (Beth)

A large amount of tutor talk was also found during two of the tutors' conversations at points when they redirected their tutees to keep them focused on the task. This occurred in the three forms. Tutors were specific and directive, as in this example.

All right, so what I'm going to get you to do... (Rosie)

Several tutors kept children focused by reinforcing their tutees' ideas by restating or paraphrasing them, as this tutor did:

Child: *I'm just pretending that I'm cheering.*

Rosie: *You're pretending that you're cheering?*

Another noticing that added to the word count of three tutors was that they read their tutees' written story back to them during the writing assessment administration, rather than allowing the child to reread it on their own.

Two of the tutors had an even or lesser amount of words than did their students. Relevant information discovered in these two cases was that the conversations seemed more natural than the other six, as the tutors skillfully navigated the conversations to get their students back on track only when needed. There were few interruptions by the tutor and fewer questions asked of students. These two tutors also demonstrated more wait time than the other six tutors, allowing for pauses in the conversation when needed and allowing the child time to write.

A Heavy Emphasis on Spelling: Using the Scoring Guide

An analysis of each child's writing was conducted and laid alongside the tutor's scoring rubric and written interview comments, as well as the conversation recordings and transcripts themselves, which revealed interesting information related to the six traits of writing, which will be presented in order of frequency discussed on the tutors' written interviews.

Two tutors wrote about the scoring guide that they were required to use to rate their students' writing. They both commented how it was easy to use because they could "match [their] students' writing to the different traits listed" (Melanie) and the rubric was "descriptive and specific" (Beth). Four tutors wrote about the usefulness of the writing inventory in the real classroom. Rosie said, "This assessment is a true-life experience – something that I would do in a real classroom to get to know my kids and know where to start teaching." They mentioned that they would be able to use the information garnered from this assessment to "target instruction" (Molly). Only three tutors discussed specific areas on which they might work with their tutees after administering the inventory. One said she would plan "engaging activities that would hopefully change her [student's] attitude about writing" (Heather). Another (Rosie) stated that teaching phonics would be helpful. Utilizing "lively" and "less repetitive vocabulary" and brainstorming ideas were offered as possible teaching points by Beth.

Conventions, namely spelling. Even though the scoring rubric contained six dimensions (traits) of writing conventions to consider while reviewing their tutees' writing, the tutors were especially focused on spelling when asked to comment on what they learned about their student during the assessment. Thus, this will be the only trait discussed. Juanita said her student was "hyper-focused" on details instead of the message she was trying to convey and that she overtly tried not to make errors, which "crippled her abilities to put all the ideas on the page." Others commented that their tutees "struggled" (Katia) with spelling, had a "fear" of misspelling words (Melanie), and asked "multiple times" (Beth) how to spell something. Three tutors (Rosie, Kristina, and Melanie) noticed that their students sounded out words that they wanted to write by saying the parts. Only three tutors (Katia, Melanie, and Beth) mentioned that their students showed little control over using capital letters correctly and only one (Beth) discussed punctuation.

The only convention item that was prompted for during the actual inventory by seven of the tutors was related to spelling. Table 4 lists the tutor actions taken when their tutees solicited assistance for spelling.

TABLE 4*Tutor Actions Taken When Tutees Solicited Assistance with Spelling*

Tutor	Action
Beth	“What does it start with?”
Heather	Spelled several words for the student.
Juanita	Confirmed student’s spelling of several words.
	“We’ll fix it later.”
Molly	Took no action
Kristina	“Just try.”
	“Sound it out.”
Rosie	“Ch- what makes that sound?”

What we noticed about spelling as we perused each child’s writing was quite different than what the tutors discussed during their written interviews. The tutors paid much attention to spelling and commented that their tutees experienced great difficulty in this area. We noticed that only three children’s writing contained a high amount of misspelled words (Katia, Beth, and Melanie’s tutees). The other children spelled most high frequency words correctly and used some phonetic spelling. One convention overlooked by tutors that frequently caught our eye was capitalization. Half of the children used capital letters inconsistently (Katia, Rosie, Melanie, and Juanita’s tutees), sometimes placing a capital letter where one was not needed and, at other times, omitting a needed capital letter.

Discussion

The purpose of this study was to explore the implementation of a revised informal writing inventory in a reading diagnosis course where undergraduate teacher candidates tutor children as part of the course requirements. By requiring that the tutor participants record their conversations during the writing assessment time, score their students’ writing by using a rubric and complete a written interview about their experiences, we were able to analyze how they approached and reflected upon the task.

The photo, in combination with the conversation and the children’s ease with which they told their stories, made the inventory easy to administer, according to the evidence in the conversation and transcripts and their written

interviews. The photo was a meaningful stimulus for the assessment and was a tool that the tutors used to extract children's stories and get them excited about writing. This aligns with information provided by Gunning (2017) and Lily and Fields (2014), where photos can help students to be more involved in their writing.

Weigle and Nelson (2004) discussed tutors' prompting during writing instruction and how this helped keep both the tutor and the student on track and to focus on meaning, rather than just the conventions of writing. Our tutors used consistent prompting prior to and throughout the writing assessment administration, mainly as a way to draw out more information about their students' story and keep them focused on their topic.

Children's oral language is often a predictor of writing skills (Dunsmuir & Blatchford, 2004), and when a more knowledgeable other scaffolds their stories, they support this oral language that will eventually lead to stronger writing skills (Wright & Dunsmuir, 2019). So, just having the tutors extend their tutees' language by prompting and simply responding is a helpful method of moving children toward writing down their stories, as Romeo (2008) found when working with students who had difficulty writing.

There were, of course, surprises during each tutor's administration of the writing inventory, some of which they wrote about on their interview forms and some that the researchers noticed while listening to conversation recordings and reading the accompanying transcripts. All tutors experienced difficulty with getting their students to construct their stories on paper, noting that the children were stronger verbally. Miller (2009) recommended that teachers explicitly state for students the purpose for writing, which may help with the transfer from verbal storytelling to the construction of the text on paper.

Many of the children with whom they were working seemed unsure of themselves and the tutors commented on this. This may be because the active and fun storytelling time all of a sudden became an intense "work" time! Tutors might plan for a way to keep the momentum going by scaffolding the writing task (Romeo, 2008) and helping students stay interested in the topic that they chose to write about (Norris, 2015).

There were also many times where tutors exhibited patience and some moments where frustration was evident. This is understandable, as the tutors were excited to write with students, and yet were surprised when the task became difficult and they were not quite sure what action to take next. Providing support in the teaching of writing can assist teachers with this issue (Zimmerman et al., 2014), as can having the tutors and tutees write together each week until it becomes routine and a more solid relationship is formed (Nelson, 2004).

Even though the tutors completed a rubric that contained many dimensions of writing (ideas, organization, sentence fluency, word choice, voice, and conventions), most of their written comments on the rubric, responses to written interviews, and prompting during the actual writing inventory administration centered on conventions (namely spelling). Gunning (2017) and Miller (2009) advised the use of well-constructed rubrics to guide teachers to look at writing samples with a wide lens in order to effectively score them and look for patterns over time (Teale, 1988). Although Hwang & Lee (2017) and Romeo (2008) recommended that teachers conduct a writing inventory, Teale asserted that more information needs to be collected routinely to get to know children as writers.

During the informal writing inventory training we conducted with the tutors, we emphasized that they were to have a *conversation* with their tutees and not a question-response period. It seems that most of the tutors, however, fell into a pattern they thought might elicit more responses from their students: where the tutor asked a question about what was happening in the photo and the child answered, sometimes quite briefly. Morris (2000) found that preservice teachers grew in their understanding that writing should be authentic after taking a course in which this concept was emphasized.

The directions the tutors gave were sometimes lengthy, as well. Clay (2005) and Johnston (2010) have consistently recommended teachers use as few words as possible to get the message across and Weigle and Nelson (2004) found that tutors who allow their students to talk more than they do hold effective tutorial sessions. Students must be given opportunities to expand their thinking, justify and clarify their opinions, and make connections to their experience in the writing process (Hardman, 2016). Teachers need to allow the writer to do the work and understand the writing concerns of their students.

Limitations

While the findings of this study are not generalizable, there is some information to be gleaned that can be used when working with teacher candidates on the teaching of writing. This study took place at one university and only four teacher candidates from each course section chose to participate in the study, since many cited the main reason they shied away from participating was that they would be recorded. We were also limited to the children with whom the teacher candidates who wanted to participate were assigned to tutor. Also, conversations varied based on the tutor, the child, and how comfortable they were with one another; however, these conversations occurred during the second tutoring session, so that the tutor and child had one full session to get to know one another.

Implications for Practice

The findings of this study lead to several implications, especially ways to enhance not only the reading diagnosis course, but other reading courses leading to elementary certification. The information gathered from the small sample of recorded conversations indicate that including more instruction on how to teach writing in all reading courses would be advantageous, as “reading coursework cannot dominate literacy teacher education preparation” (Morgan & Pytash, 2014, p. 28). This aligns with the findings of Hall (2016), Grisham and Wolsey (2011), and Norman and Spencer (2005). It would not be an addition to the courses, but rather an embedment into the existing reading instruction. Our state recently revised its English Language Arts and Reading standards and they now reflect an integration of reading and writing, so it makes sense that our courses align with this shift.

Teacher candidates need more time and experiences working with children to learn how to hold genuine conversations where they are listening more than they are talking. Videos can be shown in class of conversations prior to and during writing so that teacher candidates have examples of what is expected during writing time. Providing more ideas for prompting children when they stall or balk while writing would be ideal, similar to what they are taught about prompting during guided reading instruction. The use of the photo was successful, as evidenced in the children’s motivation to tell their stories and the tutors’ comments that it helped to initiate writing, so this will continue to be used as a starter for the writing inventory. Finally, engaging teacher candidates in more writing experiences of their own (and scoring their own writing, as well as their peers’ writing), might help them understand that writing is more than just reviewing and correcting conventions. There has been a fair amount of literature published that supports how preservice teacher attitudes toward writing can shift from the negative memories of their own schooling to positive experiences in the university classroom (Graves, 1983; Grossman et al., 2000; Hall, 2016; McDonald, Buchanan, & Sterling, 2004; Morgan, 2010; Murray, 1999).

Implications for Research

An advantageous next step would be to conduct a content analysis of all the undergraduate reading courses offered at our university in order to ascertain what is occurring in each course in regard to writing instruction. Researchers could then conduct a similar study where all undergraduate students’ scoring rubrics are collected over the course of a year in the reading diagnosis course to look for

trends and patterns. To add to the literature in this area, a study might be done where reading diagnosis course instructors across the country are interviewed to learn how they approach the assessment and teaching of writing in courses.

Conclusion

After analyzing conversations between tutors and their students, we strongly support the continued implementation of a writing assessment and writing instruction component in the reading diagnosis course at our university. It is also apparent that having tutors use a meaningful photo that the child brings to the lesson is suggested, as this was part of the reason why the children were motivated to engage in the writing task and why the conversations were natural. Two significant findings that may affect the way instructors teach about writing in the course is the lack of the tutors' economy of words and the lack of variety in the types of prompts and questions delivered during the conversations. The results of this study enhanced what is currently found in the literature regarding preservice teachers' approaches to writing assessment and instruction by demonstrating the authentic conversations before and during writing that facilitate storytelling. Improving these facets of the inventory will give the children space to respond to the task and create meaningful narratives. Teachers can promote equity among all learners by listening intently to the stories they have to tell.

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APPENDIX A

Scoring Rubric

	Ideas	Organization	Voice	Word Choice	Sentence Fluency	Conventions
Established/ Exceptional	Offers a clear, simple theme. Narrows the theme or topic. Provides enough evidence to support the theme. Offers credible, accurate details.	Grabs the reader's attention from the start. Uses a variety of carefully selected transition words. Creates a piece that is easy to follow by fitting details together logically. Sums up thinking in a natural, thoughtful way.	Writing is expressive and compelling. Offers a point of view that is appropriate for the mode. Speaks in a way that makes the reader want to listen. Expresses ideas in new ways.	Writer uses many lively action words. Makes use of creative and effective literary techniques. Uses words with precision. Uses words that enhance the piece's meaning.	Carefully and creatively constructs sentences for maximum impact. Uses various types of sentences. Thinks about how the sentences sound if read out loud. Diverges from standard English to create interest and impact.	Spelling is controlled. Uses punctuation and paragraphs skillfully. Uses capital letters consistently and accurately. Forms grammatically correct phrases and sentences.
Extending/ Expanding	Offers a recognizable but broad theme. Does not focus on a specific aspect of the topic. Does not offer a unique perspective. Offers details that are inaccurate or irrelevant.	Presents an unoriginal introduction. Uses obvious transition words. Sequences events logically, for the most part. Ends the piece on a familiar note.	Establishes a generic tone. Chooses a voice that is not completely clear. Keeps the reader at a distance. Piece sounds like anyone could have written it.	Uses passive voice a lot and includes few action words. Uses some common literary techniques. Words used rarely capture the reader's imagination. Fills piece with unoriginal language.	Offers simple sentences. Attempts to vary the beginnings and lengths of sentences. Offers some sentence variety. Some sentences are smooth; some are uneven.	Incorrectly spells some words. Handles basic punctuation. Inconsistent use of capitalization. Some grammar and usage errors.
Exploring/ Emergent	Offers a series of unfocused, repetitious, or random thoughts. Has not narrowed topic in a meaningful way.	Does not give reader any clue about what is to come. Does not provide transition words. Does not show clearly what comes first, etc. Ends the piece with a bland conclusion or none at all.	Produces a lifeless piece. Piece has random thoughts, making it difficult to discern how the writer feels about the topic. Mismatch between the piece's tone and the intended audience.	Makes no attempt at selecting verbs with energy. Uses words that are repetitive and vague. Misuses words. Uses many words and phrases that do not work.	Even simple sentences are flawed. Sentences are repetitive and flawed. Uses repetitive sentence patterns. Sentences are incomplete and choppy.	Has misspelled many words. Neglected to use punctuation or used punctuation incorrectly. Uses capitals inconsistently. Makes frequent mistakes in grammar and usage.

From Traits of Writing Scoring Guide for Grades 3-12, The Culham Writing Company

APPENDIX B

Written Interview Protocol

1. What did you learn about your student after administering the Informal Writing Inventory?
2. What did you expect to have learned?
3. What was easy about administering and scoring this assessment?
4. What was difficult about administering and scoring this assessment?
5. How did your student affectively respond to the assessment?
6. How did your student cognitively respond to the assessment?
7. How will you now take this information and plan individual tutorial writing lessons for your student?

SOCIALLY JUST LITERACY STRATEGIES

READING IN THE 21ST CENTURY: USING AUGMENTED REALITY ENHANCED TEXT TO ENGAGE YOUNG READERS

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Abstract

Augmented Reality, a technique of blending virtual objects with the physical environment for presentation in real time, has been highlighted as an emerging technology with considerable possibilities for enhancing students' engagement and motivation in reading. This exploratory study explored, through a descriptive phenomenological lens, eight elementary school students' experiences when using an iPad to interact with an AR enhanced text in a reading summer camp setting. Data was collected on participant's reading experiences through participant observations (recorded as field notes) and transcriptions from individual, semi-structured interviews with each of the eight participants. The findings revealed the following: (a) high level of student engagement and enthusiasm when interacting with the AR enhanced text; (b) insights about student reactions to manipulations of animations; and (c) usability concerns for elementary age children. These findings provide research insights about ways to improve design and usability features of AR to maximize its potential in supporting the development of engagement and motivation in reading.

Keywords: Digital literacy, twenty-first century literacy, augmented reality, reading motivation, reading engagement, technology

Introduction

What does it mean to be literate in the 21st century? Teaching and learning in a highly connected world includes learning in various learning spaces, learning with new technologies, and reading multimodal texts, to name a few. Information Communication Technologies (ITCs) have impacted the way society communicates, including social practices and skills required for participation in global communities (International Reading Association [IRA] 2009). In addition, the Internet and technological advancements have also transformed the definition of literacy and how we view literacy in the workplace and in society.

According to the International Literacy Association [ILA] (2018), Literacy is the ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines and in any context.

Twenty-first century literacy is cross-cultural and it has the power to build relationships and solve problems (National Council of Teachers of English [NCTE], 2008). For students to become global citizens in an advancing technological world, they need to engage in 21st century contexts and be given opportunities to read, synthesize, and construct knowledge using print and non-print media, on a variety of virtual platforms (IRA, 2012). This interaction occurs across many modalities and incorporates skills from multiple forms of literacy.

Students' twenty-first century literacies are developed as they interact with digital texts and with peers and others in digital contexts. Kiili, Mäkinen, and Coiro (2013) defined the digital context of literacy as, "diverse meaning making practices wherein digital tools and multiple digital sources are used to make sense of the world, build new knowledge, and exchange ideas within and across communities" (p. 5). Teachers across the nation are incorporating more and more technology in their daily lessons. Mobile readers, hybrid courses, fully computerized assessments, one-to-one computing initiatives, and digital curricula are nowadays used in many classrooms. These digital texts, digital mediums, and digital contexts present both unique opportunities and challenges for students and teachers.

Augmented Reality (AR), in particular, has been highlighted as an emerging technology with considerable possibilities for enhancing teaching and learning (Johnson, Levine, Smith, & Haywood, 2010). AR is a technique of blending virtual objects, particularly 3-dimension (3D) objects and computer graphics, with the physical environment for presentation in real time (Cheng,

2017; Vate-U-Lan, 2012). When developing an AR book, computer-generated graphics and/or animations are superimposed on the pages, thus enhancing students' reading experiences beyond simple electronic book reading (Cheng & Tsai, 2014; Sellen & Harper, 2003; Yilmaz, Kucuk, & Goktas, 2017).

There has been a recent surge in studies endeavoring to explore how AR technology integrated with paper books (referred to in this study as AR enhanced text) can support students' reading. For example, in 2011, Abas and Zaman described how the AR storybook they developed could support students' visualization processes when reading, particularly those with poor reading ability. Vate-U-Lan (2012) found that both students' reading comprehension and engagement was enhanced when reading an AR enhanced text. Most recently, Cheng (2017) found that students perceived less cognitive load, stronger motivation, and more positive attitudes when engaged in an AR book reading activity.

Given potential to improve student motivation, engagement, and possibly even reading comprehension, further exploration of students' experiences with reading AR enhanced text is warranted. Thus, the purpose of this exploratory study was to explore, through a descriptive phenomenological lens, eight elementary school students' experiences when using an iPad to interact with an AR enhanced, well-known children's book for the first time. The following research question guided this study: *What are the experiences, in terms of reading motivation and engagement, of eight elementary school children when interacting with an AR enhanced text?*

Theoretical Framework

Despite the increased need for literacy in the 21st century, a large number of today's students are struggling with reading and reading comprehension. According to the most recent data from the National Assessment for Educational Progress (NAEP), 68% of fourth-grade students have reading scores that are designated as below "Proficient" (National Center for Educational Statistics [NCES], 2017). One potential way to increase students' reading performance and comprehension is to promote engaged reading in the classroom (Guthrie & Wigfield, 2000).

Engaged readers are those who apply cognitive strategies for comprehension, seek to understand, are motivated to learn, and believe in their own reading abilities (Guthrie, Wigfield, & You, 2012). According to Guthrie and Wigfield's (2000) reading engagement theory, engaged reading is based on both motivational and cognitive processes of the reader. Cognitive processes include activating prior knowledge, forming text representations, constructing causal inferences, and integrating prior knowledge with textual information.

In addition to these cognitive processes, several motivational variables, such as goal orientation, intrinsic motivation, self-efficacy, personal interest, and transactional beliefs, also play a role in promoting engaged reading. Research has found that these motivational variables, in combination with cognitive processes, are strongly associated with reading outcomes, such as students' text comprehension. For example, high personal interest leads to deeper conceptual processing and greater text comprehension (Alexander & Jetton, 1996; Cordova and Lepper, 1996). Likewise, high intrinsic motivation leads to increased reading amount, which then increases text comprehension (Guthrie, Wigfield, Metsala, & Cox, 1999). Given the important role motivation plays in developing engaged and proficient readers, it is crucial for teachers and other educators to seek ways to enhance students' reading motivation.

Literature Review

Reading in the Twenty-First Century

Reading has undergone a dramatic transformation in recent years. The Internet and other ICTs have dramatically changed how we read, write, view, listen, compose, and communicate information (Coiro, Knobel, Lankshear, & Leu, 2014). For students to succeed in today's ever-evolving technological society, they must develop what researchers call "new literacies," which involve *new skills, strategies, and dispositions for interacting* with emerging technologies. *These include the ability to locate, critically evaluate, communicate, and construct new ideas within networked communication environments such as the Internet (International Reading Association [IRA], 2009)* - all skills that are becoming critical to success in the 21st century economy and workforce.

Leu, Kinzer, Coiro, Castek, and Henry (2013), have shown that New Literacies are: (1) deictic, (2) multi-faceted and multimodal, and (3) require new forms of strategic knowledge. Furthermore, the integration of technology in schools has increased the vital role teachers play in supporting students' learning within new literacy classrooms. According to the IRA (2009), all teachers have a responsibility to integrate these new literacies into the curriculum to prepare students for their future in the digital age. This means that teachers must not only develop these new literacies themselves, but also learn how to effectively guide students in navigating these richer and more complex learning contexts. These specialized 21st century expectations raise new questions about the reading process, how to support readers in technological environments, and how to meet all readers' needs.

Given recent advancements in digital age technologies, researchers are now exploring the role of digital reading environments (e.g., eBooks, interactive storybooks, transmedia storytelling) in motivating reluctant readers (Lamb, 2011). These digital devices invite young children to interact with books in ways that were never before possible. Multimedia and multisensory features such as narration, music, animation, hyperlinks, and embedded games are powerful attractors that can enhance and stimulate children's interest, motivation, and engagement (Ciampa, 2012; 2015). With these features, a book can seem to literally come to life for the reader. There is evidence to suggest that the features embedded within online technologies, such as electronic storybooks (eBooks), contribute to children's language and literacy skill development (Blok, Oostdam, Otter, & Overmaat, 2002) and motivation to read. For example, in an investigation of the eBook reading experiences of eight primary-grade students, Ciampa (2012) found that eBook reading enhanced students' reading motivation and self-efficacy, particularly for those who struggle with reading.

Augmented Reality

AR is one of the various digital technologies now available for educational purposes (Ozdemir, 2017a). What is AR? AR integrates digital information with the user's existing environment in real time (Zhou, Duh, & Billingham, 2008). The benefit of AR versus virtual reality (VR) is that it enhances the existing environment by overlaying digital information on top of it. This technology is heavily used by Google and by many inductors such as healthcare, engineering, and tourism.

AR applications are designed using special 3D programs that enable the developer to connect animation in the computer program to an augmented reality market in real time (Ke & Hsu, 2015; Wojciechowski & Cellary, 2013). In other words, AR uses computer-generated enhancements on top of a reality and makes it possible for the user to interact with it. For example, AR applications for smartphones include a global positioning system (GPS) to specify one's location and its compass to detect the device's orientation. AR objects can be displayed on mobile devices, projection systems and also on head-mounted screens such as the Google Cardboard.

There are many uses of AR in education. AR is used for classroom tours, word walls, lab safety, homework, creating and sharing video-based book reports, etc. and provides students with the opportunity to practice their knowledge and skills in unique ways. For example, students in one class video-taped commercials about the books they each read. Then they used Aurasma, an AR application (see <http://aurasma.com>), that allowed the students to link the cover of a book to a

peer's photo to see who had made a commercial about that book. Tapping on the photo of the peer would take students to a page that included the commercial. Using the application, teachers were able to make their students' book recommendations available to the entire student population (Beutow, 2016).

AR systems can also provide interactive activities (Chen & Wang, 2015) to increase collaborative learning experiences (Billinghurst et al., 2001) and allow students to present what they learn in a 3D format. Proponents of AR use in the classroom state that one of the most important advantages of AR is helping to create a blended learning environment that promotes the development of critical thinking, problem solving skills, and communicative skills - all important 21st century literacies. AR also has considerable application value for enhancing the reading experience for young children (Bhadra et al., 2016). Linking AR technology with reading creates a rich and vivid reading experience. The interactive features provided by AR technology evoke a magical feeling and high degree of surprise as well as curiosity during the reading process (Cheng, 2017; Cheng and Tsai, 2016; Yilmaz et al., 2017). As such, AR enhanced text has the potential to extend children's knowledge and cognitive development, as they read, explore, and interact with story content in a wide variety of ways (Yilmaz, 2016).

Researchers have suggested that the immersive learning environment provided by AR technology has the potential to increase students' engagement in learning and support content learning (Billinghurst, Kato & Poupyrev, 2001; Chen & Wang, 2015). Studies have documented positive influences of AR enhanced text on students' attitudes and reading engagement (e.g., Yilmaz et al., 2017), cognitive processing (e.g., Cheng, 2017), and reading comprehension (e.g., Abas & Zaman, 2011; Vate-U-Lan, 2012). Other studies show the impact of AR technology on young children's storytelling abilities (e.g., Vafa, Richardson, & Murphree, 2017; Yilmaz & Goktas, 2017). For example, Yilmaz and Goktas (2017) studied the effects of AR technology on elementary students' creativity with regard to storytelling and narrative skills. They found that students who used AR created longer, more creative stories than students who did not use AR to develop their stories.

Overall, there is evidence to suggest that AR enhanced text may play a positive role in motivating students to read and engaging them with text in a multi-sensory way. However, it is important to note that research on AR enhanced text is still in its infancy and much remains unknown. Dünser and Hornecker (2007) argue that assessing the educational value of AR enhanced text can be a challenging endeavor since a range of factors contribute to the user's experience, including "the story itself, the visuals, the interactive sequences and how the user interacts with these, how 3D elements, interactive sequences and traditional text relate to

each other, and the handling of the overall augmented book” (p. 179). Thus, our study aimed to explore how eight elementary school children interacted with and handled an AR enhanced text, and how the integration of AR may enhance the reading and learning experience.

Methodology

Context

This study took place in a voluntary summer reading camp setting which operated in partnership with a large Southeastern university. Local school districts provided parents with information about the camp program towards the end of the school year. All elementary-grade children, regardless of reading proficiency level, were invited to participate in the camp program. The camp met two days a week for a period of three weeks in a college campus classroom that was designated for related services. During each camp session, undergraduate education students, under the supervision of a university reading education faculty member, engaged camp children in a variety of interactive activities with children’s literature.

The overall purpose of the camp was to introduce children in grades K-5 to a wide variety of books and reading genres and foster their engagement and motivation through quality children’s literature. The summer reading camp context was an “augmented” reading experience context in itself as the students who participated in the camp engaged with a variety of multimodal texts and had numerous opportunities to read, use technology, be read to, discuss, and explore ways to use technology to read and learn. The final camp session included a celebration of students’ experiences with books. Participating camp children shared with their parents and families about what they read and engaged their parents in a variety of show and tell family literacy activities.

Participants

The sample consisted of eight elementary school children (four males and four females), drawn from the total number of students who were enrolled in the summer reading camp. During the first week of camp, the camp coordinator briefly modeled proper usage of the AR application with the children in a whole-group setting. After this brief introduction, the students were informed that they would have an opportunity to “try-out” the application for themselves during center rotations. Each child was provided with the opportunity to interact with the application at the “AR Book Station” during their regularly-scheduled center time.

While a total of ten children interacted with the application at the “AR Book Station”, the researchers were not able to obtain written consent from the parents/guardians of two of the children. For this reason, data was only collected and analyzed from eight of the ten children. Thus, the final sample of eight elementary school children were considered both a purposive and convenience sample (Martella, Nelson, Morgan, & Marchand-Martella, 2013).

In order to protect the participants’ identities, pseudonyms are used. Table 1 displays each child’s gender and grade-level. While some of the children were familiar with other AR game applications (e.g., Pokemon Go), none of the children reported having any prior experience with using an AR application when reading.

Research Design

This exploratory study used a phenomenological case study research design (Moustakas, 1994) to explore the lived experiences of eight elementary school children when using an iPad to interact with an AR enhanced, well-known children’s book for the first time. Phenomenology, defined by Edmonds and Kennedy (2013), is “the description of an individual’s immediate experience” (p. 136). A descriptive phenomenological research design was chosen as the appropriate methodology for this study since the researchers were exploring the meaning of the lived experience of a specific phenomenon. This research design requires the researcher to collect data, analyze it and report on the findings. The findings are a collection of descriptions of meanings, usually in the form of

TABLE 1
Participant Demographics

Child Name (Pseudonyms Used)	Gender	Grade Level
Tony	Male	4th
Gia	Female	3rd
Thomas	Male	6th
Jane	Female	4th
Ryan	Male	3rd
Elena	Female	4th
Sophia	Female	3rd
Alex	Male	4th

phrases or statements, for study participants of their lived experiences (Cresswell, 2007). The focus of descriptive phenomenology is the “correlation” of the experience (i.e., the ‘what’) and the ‘how’ a phenomenon is experienced. The primary data sources for this study were (a) participant observations of children as they interacted with an AR enhanced text during the AR reading sessions (recorded as field notes) and (b) transcriptions from individual, semi-structured children interviews about their experiences with the AR enhanced text. Cresswell (2007) describes interviews as the primary means of collecting information for a phenomenological study and recommends describing the meaning of a phenomenon for a small number of individuals who have experienced the phenomenon.

The Augmented Reality Enhanced Book

This study was a part of a collaboration with Team Launchable, an immersive technology company that specializes in AR. Team Launchable’s CEO and developers have designed an AR application that allows children to view three-dimensional images and text overlaid on select books in real time. As researchers, our goal in the collaboration was to explore how children interacted with and handled the AR enhanced text. As developers, Team Launchable’s goal was to receive valuable feedback regarding the usability of their product.

For the purpose of this study, Team Launchable brought a popular children’s book to life using AR technology. The text was specifically selected by the application developers because they wanted to use a text that was familiar to most elementary students and appealed to both emergent and intermediate readers.

When aiming the camera on an iPad at the pictures on the printed book, the application allowed children to view computer-generated animations augmented on the book pages. Participants were able to navigate through the story by turning the pages of the physical book. Through movement of the iPad, children could move, scale, and rotate the three-dimensional animations on each page.

Data Collection

Augmented Reality Reading Observations

AR reading sessions were held individually with each participant in the regular classroom as a center activity. During each AR reading session, the participant was provided with 10 minutes to read and interact with the selected children’s book while using the AR application. The same children’s book was used during each reading session. A researcher observed each reading session and took field notes to record specific behaviors and level of engagement of every child,

including any comments made by the participants regarding the animations, features, and/or functions on the page. If a child had difficulty using the application, the researcher provided prompting and support.

A child's high level of engagement during the reading session was defined as those times when the student was always attending to the iPad's screen, turning the page of the physical book, making comments to the observer about the text, or demonstrating other positive verbal and nonverbal behaviors (e.g., giggling at the images). On the other hand, a child's low level of engagement during the reading session was defined as those times when the student had their eyes closed or oriented toward another object in the classroom rather than the iPad's screen and was not following along with the story.

Participant Interviews

Individual semi-structured student interviews were conducted at the end of each reading session. Students were asked if they enjoyed reading with the application and to share what they specifically liked or did not like about it. Additionally, students were asked if they would like to read other types of books with this application. Lastly, students were asked to share their views on how the application could be improved. These semi-structured interviews were transcribed and later analyzed. The following interview protocol was used:

1. Did you enjoy reading with this app?
2. What do you like about it? or What did you not like about it?
3. Would you like to read other types of books with this app?
4. Can you think of a way we could make this app better?

Data Analysis

The researchers used a constant comparative approach (Glaser & Strauss, 1967) to analyze interview data and field notes (see Figure 1). The constant comparative method involves breaking down the data into discrete 'incidents' (Glaser and Strauss, 1967) and coding them to categories.

To gain a sense of the data, the researchers first read and reread the transcribed field notes and transcripts. This was followed by open coding. During this phase, the researchers highlighted interesting sections, certain words, phrases, patterns of behavior, and repeating occurrences. The open coding phase was preceded by two additional rounds in which the researcher further refined the categories. These categories were continually refined until saturation was reached.

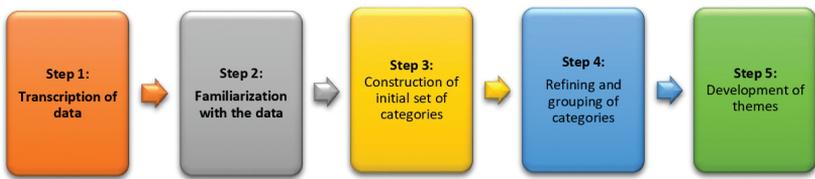


Figure 1: Analysis of Data

The constant comparative method of reflecting, exploring, and refining the data allowed emerging themes to collectively surface.

In order to achieve inter-rater reliability, each author independently coded the interviews and field notes. Inter-rater agreement was reached through a process of initial coding, discussion of codes and disagreements, and resolution of discrepancies. The point-by-point formula (agreements/agreements + disagreements \times 100%) was used to calculate interrater reliability (Miles, Huberman, & Saldana, 2013). As part of this process, the researchers examined interpretations of the codes and revisited codes (i.e., definition of each code and number of codes) as needed to ensure that the codes would be consistent. Each of the coders independently reviewed more data and tested out the revised codes. The coders repeated the process until they achieved a minimum of 85% inter-rater reliability on 95% of the codes.

Findings

Descriptive phenomenology seeks to identify the commonalities of how something is experienced from the perspective of the participants. In terms of reporting the results of descriptive phenomenological data analysis, participants' experiences are typically represented through the use of themes (Moustakas, 1994). These themes are carefully derived from data collected during the study. The analysis of the collected data revealed three major themes about the participants' experiences when interacting with an AR enhanced text. The following three themes present the complexity of the findings and also provide a summary of the 'essence' of the AR enhanced text experience.

Theme 1: High Level of Student Engagement and Enthusiasm

Observations of the children participating in the AR reading sessions revealed that seven of the eight participants were always on task, engaged,

and enthusiastic. For example, a third grade female's enthusiasm for the augmented reality application was evident when, referring to the animations, she excitedly yelled, "Oh my gosh! It's coming out!" with a big smile on her face. Another female participant (fourth grade) also made several comments, connections, and interpretive observations relevant to the augmented reality application (e.g., "He is literally walking!" "It's moving!" and "This is cool!"). One female fourth grade student compared the application to reading a pop-up book.

Unlike the other seven participants, one third grade male displayed little interest and said "it was hard to hold" while using the application. He asked to leave the "AR Book Station" to return to a former activity after viewing three pages of the book through the application.

Theme 2: Physical Manipulation of Animations

Students' interest in the physical manipulation of the three-dimensional animations was reflected both in the researcher observations of student behavior and in the students' comments. All eight participants interacted with the application by moving, scaling, and/or rotating the three-dimensional animations on each page.

For example, a fourth-grade male's awareness of the ability to manipulate animations was apparent when he stated, "The train moves wherever I move the tablet". Another fourth-grade male student said the application "was like a movie".

Theme 3: Usability Concerns

Most children were able to interact with the application without much prompting or support. While most students did not express difficulty in using the augmented reality application, two of the eight students voiced concerns regarding difficulty handling the device. For example, one student had trouble holding the iPad with one hand while turning the pages in the physical book with the other hand. This student asked a researcher to turn the pages for him while he used both hands to hold the device. With support, he was able to successfully finish reading the book while using the application. As mentioned previously, the other student who experienced difficulty with the handling of the iPad became quickly frustrated and chose to leave the "AR Book Station" to return to a former activity.

Discussion

This exploratory study aimed to explore, through a descriptive phenomenological lens, eight elementary school students' experiences when using an iPad to

interact with an AR enhanced, well-known children's book for the first time. The findings from this study suggest that AR enhanced text could serve as a promising tool for fostering students' reading motivation and engagement. The use of AR allowed the eight children in this study to view text in a new and exciting way.

The ability to move, scale, and rotate the 3-D animations seemed to have played a large role in participants' engagement during the observed AR reading sessions. The AR application used in this study brought a well-known children's book to life and provided an immersive reading experience. Many children compared the AR reading experience to watching a movie or reading a pop-up book. Additionally, several children expressed interest in reading other texts with the AR application.

Educators are continuously seeking new and innovative methods to increase students' motivation and engagement in reading; this tool may prove to be useful in this area. Furthermore, by effectively integrating new technologies into the literacy curriculum, such as AR enhanced texts, teachers can provide equitable opportunities for *all* students to develop the practices, skills, strategies, and dispositions required for participation in today's global environment.

Limitations and Future Research

The present study was designed to gain a deeper understanding of how the participating elementary school children interacted with an AR enhanced text. Although the findings are intriguing about the use of AR for engaging and motivating students to read texts, this study has several limitations. First, this study was exploratory in nature. Although the research design of the study was appropriate for the research question under study, it has a number of a core inherent limitations such as the lack of generalizability to the population at large. Although the researchers cannot assert that the findings of this study represent the AR enhanced book experience of all elementary school students, we can assert that the findings are representative of the AR enhanced book reading experience of the participants in the study, and can be used as foundational elements for further investigation in this area.

Second, this study was limited to a single reading session per child using only one AR enhanced book. The described lived experiences of the study participants are limited to the duration of the study, the context of the study, to each reader's characteristics, motivation, and other non-examined experiences with reading and with AR and are not representative of other elementary school children's experiences. To obtain more reliable data and to eliminate novelty effects, the implementation process should be extended and include a wider variety of

AR enhanced texts and students in a variety of contexts. Third, only qualitative sources of data were collected and analyzed. It is likely that the addition of quantitative measures (e.g., Motivations for Reading Questionnaire (MRQ; Wigfield & Guthrie, 1997) would provide additional data on students' motivation when engaging in AR reading activities. Although trustworthiness was established through inter-rater reliability, researcher bias remains another important methodological limitation. Last, the AR application utilized in this study was still in the development phase. Students experienced some technical difficulties during the reading sessions, including technical glitches with the application and unsteady animations. It is possible that these technical difficulties could have affected participants' level of engagement and interest in the activity.

Future studies should also explore students' interactions with a variety of AR-enhanced texts (i.e., fiction, non-fiction, wordless books) over time. Children need time to explore multimodal texts and listening to children read and share their experiences is a valuable way to learn about what they like, what might support their reading and motivation to read more, and also what challenges different students might experience with the texts and with the App itself. For example, it is worth further researching whether an augmented text is motivating to children to read and in what contexts and purposes? In addition, in what ways would be most beneficial for teachers to engage students with AR enhanced texts? Lastly, it will be useful to explore longer-term observations of children engaging with AR enhanced text and collect quantitative data such as length of time students spend on AR enhanced texts, how they navigate reading such books, and what aspects of the augmented reading process might support or impede their motivation and the overall reading process. This would help researchers identify the specific contributions and related challenges of AR on the motivation and engagement of students in reading.

Conclusion

Augmented reality is no longer just technology; it is a potential context for literacy, for motivating students to read, and for engaging them with text in a multi-sensory way. Could AR engage students in reading who otherwise would not be interested in reading? That remains to be seen. Results from our small-scale exploratory study raised many questions for us as literacy professionals about the role of AR in student engagement and motivation and also about why, how, and when teachers or literacy professionals would incorporate AR experiences in their classrooms or in contexts where reading support and services are provided outside the classroom.

Will AR replace students' time with print text? We hope not. Our purposes with exploring how students engaged with AR for reading purposes was to listen to the students' perspectives and observe how students engaged with the device and used the AR application to read the text. AR is on a developmental trajectory and although it is finding its way in classrooms, very little evidence focuses on how the use of AR impacts students' learning experiences.

Although we do not have many answers to questions associated with the role of AR in reading, we do plan to continue to experiment with new technologies that will not only stretch our professional boundaries but will also help us to better understand how reader-AR transactions can become motivating, meaningful, and productive for students' reading growth and 21st century skills. The goal of AR is not fully reached yet; although emerging technologies and multimodal texts exist in classrooms, homes, and other settings, AR embedded texts are not part of the everyday educational world. There are many possibilities with using AR to create active reading and learning experiences for students, and in the process explore and redefine the learning spaces of the 21st century.

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RELATIVE CONTRIBUTIONS OF LITERAL AND INFERENTIAL READING AND LISTENING COMPREHENSION TO THE READING COMPREHENSION OF NARRATIVE AND EXPOSITORY TEXTS IN MIDDLE GRADE STUDENTS

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Abstract

This study investigated the extent to which the literal and inferential reading and listening comprehension of narrative and expository text contributed to the overall reading comprehension of each text type. The study included 938 students in grades 4, 6, and 8, employing a counter-balanced design to measure listening and reading comprehension. The Reading Comprehension sub-test of the Gates-MacGinitie Reading Test Fourth Edition (GMRT-4) was administered to measure both reading and listening comprehension. For the reading comprehension of expository/more difficult texts, inferential reading comprehension explained the greatest amount of the variance, with listening comprehension explaining increasing amounts of the variance at later grade levels. Literal reading comprehension explained the greatest amount of the variance for the reading comprehension of narrative/easier texts. Similarities and differences between this study and other studies are discussed as well as implications for instruction and research.

Keywords: Reading comprehension; listening comprehension; narrative text; expository text

Introduction

Investigating aspects of narrative and expository text comprehension is quite apropos to the 2018 Association of Literacy Educators and Researchers Conference Theme of *Educating for a Just Society*. Indeed, data from the National Assessment of Educational Progress (NAEP) suggest that the reading ability of the majority of US public school students is below a level considered proficient, and that this condition has persisted for several decades (NCES, 2015). Initiatives such as the Common Core State Standards for English Language Arts (CCSS) (National Governors Association, 2010) have been undertaken to address concerns regarding how well US high school graduates are prepared for college and/or workforce entry (Adams, 2009), and more than 40 states have adopted these standards to date. One of the key threads running through the CCSS is the requirement that students demonstrate comprehension of increasingly complex texts as they advance from school entry through grade 12. Because students are required to comprehend expository texts in content areas such as math, social studies, and science as early as grade 3, with the complexity of these texts steadily increasing throughout their education, the CCSS emphasize the role of expository texts in the development of reading comprehension. By including listening comprehension standards worded very similarly to the reading standards, the CCSS also acknowledge the important role that oral language ability plays in the development of reading comprehension.

Some of the research studies cited by the CCSS in their justification for including listening comprehension standards are based on the *simple view of reading* (SVR), which emphasizes the important role of listening comprehension in facilitating reading comprehension after a text has been successfully decoded (Catts, Adolph, & Weismer, 2006; Hoover & Gough, 1990; Joshi & Aaron, 2000). Models like the SVR are premised on theories suggesting that once a text has been decoded, the same or similar cognitive processes that are used to facilitate comprehension via listening are also employed to achieve comprehension via reading (e.g., see Hoover & Gough, 1990; Sticht, Beck, Hauke, Kleiman, & James, 1974). The similar or shared nature of the cognitive processes involved in reading and listening comprehension has been supported by studies indicating that reading and listening comprehension become significantly correlated subsequent to the acquisition of decoding ability (Badian, 1999; Curtis, 1980; Diakidoy, Stylianou, Karefillidou, & Papageorgiou, 2005; Hoover & Gough, 1990; Stanovich, Cunningham, & Feeman, 1984; Vellutino, Tunmer, Jaccard, & Chen, 2007; Verlaan, Pearce, & Zeng, 2017). A number of researchers, however, have suggested that some of the cognitive processes used in reading comprehension might differ from those employed in listening comprehension (Caplan, Waters, Bertram, Ostrowski, & Michaud, 2015; Horowitz & Samuels, 1987; Nagy, Berninger, & Abbott, 2006).

In addition, the SVR model has been critiqued for a lack of specificity regarding the cognitive processes by which the comprehension component of the model is accomplished (Hanon, 2012; Kirby & Savage, 2008).

Other models of comprehension, such as the construction-integration (CI) model (Kintsch, 1998, 2004) and Dual-Coding Theory (DCT) (Sadoski & Paivio, 2004, 2007), have sought to clarify some of these comprehension processes. Although the CI and DCT models have their differences, they both posit that comprehension involves obtaining explicit/literal information from the text via word identification, deriving inferential/associative information based on language usage such as semantics and syntax, and combining/integrating the explicit and inferential information with other information that the reader/listener already possesses (e.g. “background knowledge”) to create a cognitive representation/mental image of the text. Interestingly, research suggests that the end product of comprehension, i.e. a cognitive representation/mental image of a text, seems to be similar whether one reads a text or hears it read aloud (Kintsch & Kozminsky, 1977). However, recent studies have indicated that some of the cognitive processes employed in creating this end product, such as the identification of morphologically complex words and sentence processing, both of which become more necessary as students progress from the later elementary through the secondary grade levels, can differ depending on whether a text is read or heard (Caplan et al., 2015; Nagy et al., 2006).

Different cognitive processes might also be employed depending on text type, with research indicating that narrative texts tend to be easier to comprehend than expository texts via both reading (Best, Floyd, & McNamara, 2008; Diakidoy et al., 2005; Eason et al., 2012; McNamara, Ozuru, & Floyd, 2011; Thompson et al., 2012) and listening (Diakidoy et al., 2005). Moreover, there is evidence to suggest that the relationship between the reading and listening comprehension of expository text does not seem to follow the same pattern as that of narrative text (Diakidoy et al., 2005). In addition, text type might also place different requirements on inferential ability, an important component of comprehension models, with research indicating that expository texts tend to require more inferencing skills than narrative texts (Eason, et al., 2012). However, there is little research investigating the interrelationships between listening and reading comprehension in terms of the relative contributions of literal and inferential comprehension abilities in both modalities to the reading comprehension of narrative versus expository text. Because standards such as the CCSS emphasize the role of listening comprehension in helping to develop the reading comprehension of both narrative and expository texts, it is important to understand the interrelationships between reading and listening comprehension in each of

these two text types. For example, understanding differences in the contribution of inferential listening comprehension of narrative versus expository text to the reading comprehension of expository texts could have implications for instructional methods and approaches. Therefore, we conducted the present study to examine the relative contributions of literal and inferential reading and listening comprehension of narrative and expository texts to the overall reading comprehension of these two text types.

Literature Review

Reading Comprehension of Narrative versus Expository Text

Research suggests that children's familiarity with narrative text structure is one of the primary reasons that narrative texts tend to present fewer comprehension challenges than expository/informational texts; young children gain significant exposure to narrative text structure and format not only through the oral discourse in which they engage as they learn spoken language, but also via the stories they encounter through various media at a young age (Graesser, Singer, & Trabasso, 1994; Neuman, 1996; Williams, Hall, & Lauer, 2004). Therefore, by the time children enter school, they have had significant oral language experience and practice with narrative text structure; narrative texts also tend to predominate those used to deliver reading instruction in the early grades, with expository texts used minimally if at all (Duke, 2000; Yopp & Yopp, 2006). Conversely, children will tend to have much less experience with the main rhetorical structures contained within expository texts, such as description, sequence, comparison/contrast, problem/solution, and cause/effect (Meyer, 1985). Not only do expository texts contain a greater number of text structures than narrative texts, but the structures themselves can present comprehension challenges (Coté, Goldman, & Saul, 1998; Richgels, McGee, Lomax, & Sheard, 1987), especially for younger readers (Englert & Hiebert, 1984; Reutzel, Jones, Clark, & Kumar, 2016).

Because background knowledge and vocabulary knowledge contribute to the comprehension process by supporting the construction of inferences regarding information not specifically stated in the text (Kintsch, 1998, 2004), another comprehension challenge presented by expository texts is that they often address topics for which younger students might have limited background and/or vocabulary knowledge, both of which contribute to the comprehension process by supporting the construction of inferences regarding information not specifically stated in the text (Kintsch, 2004). Background knowledge figures prominently in models of reading comprehension (e.g., Anderson & Pearson, 1984; Kintsch, 1998) and is

integral to the creation of a cognitive representation of a text during the comprehension process (McNamara, Kintsch, Songer, & Kintsch, 1996; van den Broek, Rapp, & Kendeou, 2005). In addition, research tends to confirm that background knowledge plays a key role in the comprehension of expository texts (Afflerbach, 1986; Ozuru, Dempsey, & McNamara, 2007) even more so than narrative texts (Best et al., 2008; McNamara et al., 2011).

Research also confirms the high correlation between vocabulary knowledge and comprehension (Anderson & Freebody, 1981; Baumann, 2005; Tannenbaum, Torgesen, & Wagner, 2006), and research suggests that vocabulary knowledge is a significant predictor of expository text comprehension (Liebfreund & Conradi, 2016). However, vocabulary used in expository texts tends to present greater challenges than that used in narrative texts; for example, the concepts addressed by unknown words in expository texts are frequently less familiar to students than the concepts addressed by unknown words in narrative texts (Heibert & Cervetti, 2011). Furthermore, to the extent that background and vocabulary knowledge contribute to the comprehension process by enabling the construction of inferences (Kintsch, 2004), expository text can present greater challenges to generating inferences than narrative text. (Eason et al., 2012; Singer, Harkness, & Stewart, 1997; Singer & O'Connell, 2003).

Listening Comprehension of Narrative versus Expository Text

Because research indicates that the cognitive representations of a text created via the comprehension process seem to be fairly similar whether a text is read or heard (Kintsch & Kozminski, 1977; Smiley, Oakley, Worthen, Campione, & Brown, 1977), it seems reasonable to assume that the listening comprehension of expository texts would be influenced by some of the same factors affecting expository reading comprehension. For example, vocabulary and background knowledge would likely affect the formation of inferences during expository listening comprehension in a manner similar to that of expository reading comprehension. However, the ephemeral nature of a text presented orally could make it more difficult to construct inferences, especially in longer or more complex texts, for which being able to refer back to a text could be beneficial to the inference construction process. Though not exactly a direct comparison between listening and reading comprehension, studies of text availability (having or not having access to the text during question answering) on reading comprehension measures can serve as somewhat of a proxy for the potential effects of the lack of text availability on listening comprehension. One study of text availability indicated that college students having access to a

text after reading performed better on longer (Ozuru, Best, Bell, Witherspoon, & McNamara, 2007) expository passages than those without access to the text. However, text availability data are more mixed for shorter passages. For example, a study by Schroeder (2011) of high school students found that text availability positively affected reading comprehension for shorter expository passages but had no significant effect for shorter narrative passages. In addition, Schaffner and Schiefele (2013) found that text availability had little effect on the reading comprehension of extended expository texts for students in grades 8 and 9.

Although many studies have compared the reading and listening comprehension of narrative text, fewer studies have compared the reading and listening comprehension of narrative text with that of expository text. A study conducted by Carlisle and Felbinger (1991) using only expository texts found that for students in grades 4, 6, and 8 without comprehension challenges, mean listening comprehension equaled or exceeded mean reading comprehension (comparison scores at each grade-level were not reported). However, when Horowitz and Samuels (1985) compared the reading and listening comprehension of proficient and non-proficient grade 6 students using both less difficult and more difficult expository texts, they found that for less difficult texts, proficient readers' reading comprehension exceeded their listening comprehension scores, while for more difficult texts, their reading and listening scores were the same; for less proficient readers, however, they found that listening comprehension exceeded reading comprehension for both more and less difficult texts.

Perhaps the most in-depth study of this type to date was conducted by Diakidoy and her colleagues (Diakidoy et al., 2005), who compared the reading and listening comprehension of narrative and expository texts in 612 Greek-speaking students in grades 2, 4, 6, and 8. They found that for both text types, reading comprehension exceeded listening comprehension at grade 8, while they were comparable at grades 4 and 6. Moreover, they found that narrative reading and listening comprehension exceeded expository reading and listening comprehension at all of the grade levels tested. Diakidoy and her colleagues also examined the relationships between input modality and text type. Using either narrative reading, narrative listening, expository reading, or expository listening as outcome measures, they ran a series of regressions to determine the relative contributions of the other three variables. They found that narrative listening comprehension was the largest contributor to both narrative and expository reading comprehension at grades 4, 6, and 8. However, Diakidoy examined the contributions only of overall narrative and expository reading and listening comprehension and did not distinguish between literal and inferential comprehension within each modality/text type.

Diakidoy and her colleagues called for further studies that would attempt to replicate/verify their results due to potential limitations from the materials and/or measures they employed, but there are additional reasons to attempt to reproduce and/or expand on their findings. First, because Greek is much more orthographically regular than English (Porpodas, 1999), Greek students may have an advantage in the acquisition of decoding and fluency when compared with English-speaking students who are developing these same skills in their own language (Venezky, 1995). Consequently, the comprehension support afforded by proficient decoding and fluency may allow Greek-speaking students to read more proficiently at an earlier age than their English-speaking counterparts. Second, the schools in which Diakidoy and her colleagues conducted their study delivered specific instruction in listening comprehension as part of the standard curriculum throughout the elementary grades. It is thus likely that these students could have more developed listening comprehension skills than do students in US schools, many of whom do not receive specific listening comprehension instruction. Finally, Diakidoy and her colleagues' findings did not report distinctions between literal and inferential comprehension measures, and recent studies have indicated that inferencing demands during comprehension tend to differ depending on the text type (Eason et al., 2012).

Therefore, we conducted the present study to examine the extent to which the literal and inferential reading and listening comprehension of narrative and expository text are related to narrative reading comprehension and expository reading comprehension. Because the requirements for students to read and understand expository text increase significantly between late elementary school and the end of middle school, we investigated students in grades 4, 6, and 8. Collecting data from these grade levels would also allow us to confirm and/or expand the work of previous studies by answering the following questions: (a) How do the present study's results compare with previous studies of listening and reading comprehension investigating students in this grade range?; and (b) What are the specific contributions of *literal* and *inferential* comprehension in each comprehension modality for each text type to narrative reading comprehension and expository reading comprehension?

Methodology

Participants

The present study's participants included 223 grade 4, 347 grade 6, and 368 grade 8 public school students in a medium-sized city in the Southern US. The students in grade 4 were drawn from 5 elementary schools, and the students in grade 6 and

8 students were drawn from 3 middle schools. All of the schools were drawn from one school district except for one elementary school in a neighboring school district. All of the schools were meeting state guidelines for reading score levels based on state-wide test results. Demographic data indicated the student population of the school district was approximately: 79% Hispanic, 13.9% White, 4.2% African American, 1.6% Asian, 1.3% American Indian, Pacific Islander, or mixed ancestry, with 69% classified as economically disadvantaged, based on their qualifications for free or reduced lunch (FRL). We used convenience sampling to select schools for the study whose demographics would be approximately representative of the community as a whole. We conducted our study in regular classrooms, using all of the students in each classroom (a total of 15 grade 4, 21 grade 6, and 19 grade 8 classrooms were used). We excluded students that the school district classified as requiring EL services, which was less than 3% of the sample. The gender and FRL composition of the participants was as follows: grade 4 – 106 males, 117 females, 81% FRL; grade 6 – 169 males, 178 females, 60% FRL; Grade 8 – 166 males, 202 females, 57% FRL.

Reading and Listening Measures

To measure reading comprehension, we used the Reading Comprehension section of the *Gates-MacGinitie Reading Test* Fourth Edition (GMRT) appropriate for the participants' grade-level, i.e. Levels 4, 6, and 7/9 (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). The GMRT has two forms for each Level (S and T), with each form comprised of 48 questions spanning 11 different passages. Each passage is accompanied by three to six questions. The passages are unrelated to each other and include material that is categorized as fiction, social science, natural science, or the humanities, with the text-types of the passages classified as either *narrative*, *exposition*, or *setting*; passages classified as *setting* contain primarily description. Grade-level tests have the following passage combinations representing these text-types: Level 4 – six narrative, four exposition and one setting; Levels 6 and 7/9 – five narrative, five exposition, and one setting. The publisher indicates that the GMRT's 48 questions are almost evenly divided between *literal* (L) and *inferential* (I) question types as follows: Level 4 Form S – 25 L, 23 I; Level 4 Form T – 23 L, 25 I; Level 6 Form S – 24 L, 24 I; Level 6 Form T – 25 L, 23 I; Level 7/9 Forms S and T – 24 L, 24 I (MacGinitie et al., 2002).

Various researchers have recommended that comparisons of listening and reading comprehension employ reading and listening measures with task demands that are as parallel as possible, meaning that passages and questions

are very similar between the two measures (e.g., see Danks, 1980; Durrell, 1969; Tilstra, McMaster, Van den Broek, Kendeou, & Rapp, 2009). We believed the GMRT's alternate form reliability of above .8 (MacGinitie et al., 2002), lent itself to helping us meet this parallel task demand recommendation, so we decided to use the GMRT also as a listening comprehension measure. Moreover, comparing listening and reading comprehension through an oral administration of an identical/equivalent reading measure is a methodology that has been used in several studies (Brassard, 1970; Hedrick & Cunningham, 1995; Sticht et al., 1974; Verlaan et al., 2017). Furthermore, we standardized the administration of the GMRT as a listening comprehension measure by using a uniform presentation method, suitable presentation rate, and standard answer document.

To ensure a uniform presentation method for the listening comprehension measure, we produced a digital audio recording for each Level/Form of the Reading Comprehension portion of the GMRT. Each recording began with a standardized set of instructions, modeled after the Listening Comprehension subtest of the *Stanford Achievement Test, Tenth Edition* (SAT-10) (Harcourt Brace, 2003). We also included a brief statement at the beginning of each reading passage indicating which questions were associated with that passage. Each passage, the questions for that passage, and their respective answer choices were recorded exactly as written in the GMRT. The speaker identified each question and its corresponding answer choices by reading aloud the question number and the letters associated with each answer choice. We provided students time to choose their answers by including a three-second wait-time between the reading of the last answer choice for a question and the reading of the next question and/or the start of the next passage. We produced six audio recordings for the administration of the GMRT as a listening measure – one for each Level/Form that we used.

We derived a suitable presentation rate for the audio recordings based on available research regarding the relationship between oral and silent reading rates. Although public speakers in the media tend to speak at an average of 175 wpm +/- 25 wpm (Foulke & Sticht, 1969; Utterback, 2000), research suggests that comprehension may begin to decline at rates above 150 wpm (Carver, 1973). In addition, other researchers have found that the silent reading rate for average readers does not seem to be significantly faster than their oral language comprehension rate (Sticht et al., 1974). However, the present study included students across a fairly wide grade range, and silent reading rates increase rather rapidly during the elementary and middle school grades, ranging from 117 – 158 wpm in grade 4 to 165 – 204 wpm by grade 8 (Carver, 1989; NAEP, 1972).

Furthermore, slowing down oral language presentation rates below approximately 130 wpm causes language to begin to sound unnatural and can reduce the ability of short term memory to store enough information to allow for the effective connection and interpretation of phrases and clauses necessary for comprehension of a text (Aaronson & Scarborough, 1976; Haberlandt & Graesser, 1989). Based on the data in the aforementioned studies, we decided to record the GMRT with oral presentation rates of approximately 130 wpm, 140 wpm, and 145 wpm, for Levels 4, 6, and 7/9, respectively.

We chose to model the format of the answer document after the answer document used in the Listening Comprehension subtest of the SAT-10; the answer document we created contained the answer choices for the questions but did not include the actual questions. This particular format of answer document was also used in the *Durrell Listening-Reading Series* (Durrell & Brassard, 1970), another standardized measure of Listening Comprehension. In addition, we designed the format of the answer document to replicate as closely as possible the test booklet containing the Reading Comprehension Section of the GMRT; we grouped the question numbers and their answer choices together for each passage exactly as they were presented in the reading test booklet. We created six different answer documents for the listening measure, one for every Level/Form of the GMRT that we used.

Procedures

To ensure identical administration procedures across classrooms, we administered both tests ourselves in a single session using alternate test forms to measure each comprehension modality, e.g. Form S for listening and Form T for reading. We counter-balanced the order in which we administered the listening and reading tests; approximately half the participants received the reading measure first followed by the listening measure, with the other half receiving the listening measure first followed by the reading measure. We also counter-balanced the test forms used: approximately half the participants received Form S as a reading measure and Form T as a listening measure, while the other half received Form T as a reading measure and Form S as a listening measure. The GMRT reading test was administered per the publisher's instructions, with students provided 35 minutes to finish the test. The listening measure was also administered uniformly in each classroom by playing the digital audio recordings of the GMRT that we produced; the entire recording was played from beginning to end with no interruption. Data collection took place over a period of 6 weeks.

Findings

Preliminary Data Analysis – Dependent and Independent Variables

We conducted an item analysis of the results of the reading and listening measures to derive values for the dependent and independent variables. We categorized each test question as referring to either narrative or expository information based on the publisher's categorizations of the passages to which the questions referred (MacGinitie et al., 2002). We categorized the test questions associated with the *setting* passages as expository because they contain primarily description (MacGinitie et al., 2002), which is typically considered an expository text structure (Meyer, 1985). Based on these categorizations, we created two dependent variables for each student: overall narrative reading comprehension (NarRd) and overall expository reading comprehension (ExpRd). These variables were computed as the percentage of questions answered correctly that were associated with the passages for each text type. Because the participants at each grade level were drawn from different schools, we tested the dependent variables for group effects with a series of one-way ANOVAs. Significant group effects were detected only at grade 8 for narrative reading, $F(2,365) = 23.368, p < .01$.

We also calculated values for overall narrative listening comprehension and overall expository listening comprehension for comparison purposes (see Table 1). Although comprehension of narrative text typically exceeds comprehension of expository text, we found the opposite to be true at grade 6 for both reading and listening. By comparing the mean item difficulties (p -values) of the narrative and expository test items for each of the two GMRT Level 6 test forms (MacGinitie et al., 2002) using a t -test, we determined there was a significant difference between these values for Form S, with the mean p -value for expository items (.68) exceeding that for narrative items (.57), $t(46) = 2.31, p < .05$. It is therefore likely that the lower difficulty (i.e. higher p -value) of expository items than narrative items on Form S was reflected in our overall grade 6 results (approximately half the participants received Form S as either a reading or listening test).

The GMRT also categorizes each question as referring to either literal or inferential information. Using these categorizations combined with those for text type, we created eight independent variables from the listening and reading measures consisting of each student's performance in the following question categories (also calculated as percentage correct): narrative and expository literal and inferential reading comprehension (NarLitRd, ExpLitRd, NarInfRd, ExpInfRd), and narrative and expository literal and inferential listening comprehension (NarLitLs, ExpLitLs, NarInfLs, ExpInfLs).

TABLE 1

Descriptive statistics for overall mean narrative (Narr) and expository (Exp) reading and listening comprehension scores as a percent correct (SD in parentheses), along with comparison results (*t*) and effect sizes (*d*)

Grade	N		Read V. List			
			Read	List.	<i>t</i>	<i>d</i>
4	223	Narr	59.9 (18.9)	57.0 (16.8)	2.69*	.18
		Exp	55.6 (18.8)	46.0 (16.8)	7.48**	.50
		Narr V. Exp <i>t</i>	4.2**	11.5**		
		Narr V. Exp <i>d</i>	.28	.77		
6	347	Narr	58.7 (19.4)	52.6 (17.2)	5.70**	.31
		Exp	66.1 (16.5)	56.4 (15.6)	10.71**	.57
		Narr V. Exp <i>t</i>	8.7**	4.3**		
		Narr V. Exp <i>d</i>	.47	.23		
8	368	Narr	72.7 (17.3)	59.3 (18.6)	13.45**	.70
		Exp	65.3 (23.2)	51.5 (18.4)	13.25**	.69
		Narr V. Exp <i>t</i>	7.3**	9.9**		
		Narr V. Exp <i>d</i>	.38	.52		

**p* < .01 ; ** *p* < .001

We employed two methods of regression to compare the contributions of the independent variables to narrative reading versus expository reading: standard multiple regression to identify which independent variables were having a significant effect on the dependent variables, and hierarchical regression to examine the unique contributions of each of these independent variables to the dependent variables. Skewness figures for the dependent variables (NarRd and ExpRd) indicated that the data were normally distributed in the -1.00 to 1.00 range for each grade level. Correlation coefficients are located in Table 2. When we conducted the first series of standard multiple regressions, we also included variables to test for effects on the dependent variables resulting from demographic and/or test administration influences for which we would need to

TABLE 2

Grade 4, 6, and 8 descriptive statistics and correlation coefficients for the independent variables

Grade	Variable	D1	D2	1	2	3	4	5	6	7	8
4th	D1.NarRd	--									
	D2.ExpRd	.663*	--								
	1.NarLitRd	.851*	.546*	--							
	2.NarInfRd	.951*	.648*	.649*	--						
	3.NarLitLs	.523*	.377*	.423*	.507*	--					
	4.NarInfLs	.540*	.469*	.450*	.521*	.548*	--				
	5.ExpLitRd	.624*	.929*	.476*	.634*	.344*	.437*	--			
	6.ExpInfRd	.512*	.784*	.492*	.455*	.305*	.364*	.501*	--		
	7.ExpLitLs	.505*	.377*	.378*	.508*	.536*	.522*	.308*	.369*	--	
	8.ExpInfLs	.380*	.336*	.262*	.399*	.350*	.404*	.342*	.208*	.390*	--
	Mean (%)	59.9	55.6	68.6	55.1	60.5	55.2	55.9	55.2	46.4	45.3
	SD	18.9	18.8	21.1	20.3	21.0	17.8	19.1	27.4	17.7	24.7
6th	D1.NarRd	--									
	D2.ExpRd	.622*	--								
	1.NarLitRd	.889*	.665*	--							
	2.NarInfRd	.907*	.466*	.618*	--						
	3.NarLitLs	.384*	.392*	.355*	.337*	--					
	4.NarInfLs	.337*	.447*	.373*	.238*	.468*	--				
	5.ExpLitRd	.569*	.887*	.595*	.439*	.362*	.372*	--			
	6.ExpInfRd	.566*	.925*	.611*	.420*	.348*	.425*	.648*	--		
	7.ExpLitLs	.462*	.387*	.391*	.436*	.463*	.324*	.424*	.299*	--	
	8.ExpInfLs	.460*	.400*	.404*	.415*	.466*	.321*	.408*	.334*	.564*	--
	Mean (%)	58.7	66.1	60.1	57.4	55.3	50.5	70.8	61.4	59.1	53.5
	SD	19.4	16.5	20.4	22.5	19.3	20.9	16.1	20.0	17.5	17.6

TABLE 2 (Continued)

8th	D1.NarRd	--									
	D2.ExpRd	.578*	--								
	1.NarLitRd	.880*	.506*	--							
	2.NarInfRd	.935*	.547*	.660*	--						
	3.NarLitLs	.409*	.521*	.381*	.368*	--					
	4.NarInfLs	.399*	.513*	.368*	.367*	.632*	--				
	5.ExpLitRd	.566*	.959*	.490*	.540*	.483*	.471*	--			
	6.ExpInfRd	.526*	.906*	.467*	.493*	.499*	.505*	.753*	--		
	7.ExpLitLs	.527*	.500*	.470*	.491*	.584*	.572*	.462*	.490*	--	
	8.ExpInfLs	.446*	.530*	.370*	.432*	.489*	.562*	.496*	.509*	.602*	--
	Mean (%)	72.7	65.3	73.6	72.0	60.1	59.0	67.2	62.2	54.2	46.2
	SD	17.3	23.2	22.9	17.0	23.2	19.2	23.1	27.8	19.7	21.4

* $p < .01$

control in the hierarchical regressions; demographic variables included gender and SES, and test administration variables included presentation order (whether participants received the reading or listening test first), test form combination (i.e. Form S Listening/Form T reading, or vice-versa), and group effects. For Grade 4, a significant effect was detected for test form combination in narrative reading ($\beta = .110, p < .05$) and expository reading ($\beta = .227, p < .01$). For Grade 6, a significant effect was detected for test form combination in narrative reading ($\beta = .192, p < .01$) and expository reading ($\beta = .244, p < .01$), and also for gender in expository reading ($\beta = .080, p < .05$). For Grade 8 narrative reading, a significant effect was detected for test form combination ($\beta = .412, p < .01$), gender ($\beta = .079, p < .01$), presentation order ($\beta = .254, p < .01$), and group ($\beta = .271, p < .01$); for Grade 8 expository reading, a significant effect was detected for test form combination ($\beta = .407, p < .01$) and gender ($\beta = .078, p < .05$).

Narrative Reading versus Expository Reading

We conducted a series of hierarchical regressions to examine the unique contributions of each of the independent variables to overall narrative and expository

reading comprehension. We entered the variables representing demographic and/or test administration factors into the first step of each of the regressions to control for their effects. For the regressions used to analyze overall narrative reading, we entered variables 3 – 8 (see Table 2) in the second step of the regression, excluding narrative literal reading (NarLitRd) and narrative inferential reading (NarInfRd) due to their multicollinearity with overall narrative reading. For the regressions used to analyze expository reading, we entered variables 1 – 4 and 7 – 8 (see Table 2) in the second step of the regression, excluding expository literal reading (ExpLitRd) and expository inferential reading (ExpInfRd), due to their multicollinearity with overall expository reading. Limited data exist regarding the relationship between literal and inferential listening and reading measures and narrative and expository reading comprehension, so we entered the independent variables as a block in the second step of each the regressions (SPSS stepwise), allowing the statistical analysis software to determine the order in which the independent variables were entered into the regression model.

For narrative reading (see Table 3), the greatest portion of the variance in grade 4 was explained by expository literal reading (42.2%), followed by narrative inferential listening (9.4%) and expository literal listening (2.8%). For grade 6, the greatest portion of the variance was explained by expository inferential reading (38.1%), followed by expository literal reading (5.7%) and expository inferential listening (2.5%). For grade 8, the greatest portion of the variance was explained by expository literal reading (35.8%), followed by expository literal listening (4.3%) and expository inferential reading (2.1%).

For expository reading (see Table 4), the greatest portion of the variance in grade 4 was explained by narrative inferential reading (43.2%), followed by narrative literal reading (2%). For grade 6, the greatest portion of the variance was explained by narrative literal reading (41.3%), followed by expository literal listening (4.4%). For grade 8, the greatest portion of the variance was explained by narrative inferential reading (41.1%), followed by narrative literal listening (8.3%), narrative literal reading (4%), and expository inferential listening (2.3%).

Discussion

We conducted the present study answer the following questions: (a) How do the present study's results compare with previous studies of listening and reading comprehension investigating students in this grade range?; and (b) What are the specific contributions of *literal* and *inferential* comprehension in each comprehension modality for each text type to narrative reading comprehension and

TABLE 3
Hierarchical regression analyses for grades 4, 6, and 8 narrative reading comprehension

Grade	Variables	β	SE β	R^2	ΔR^2
4th	Test Form	0.109*	1.912	0.000	
	ExpLitRd	0.404***	0.056	0.422	0.422***
	NarInfls	0.169**	0.065	0.516	0.094***
	ExpLitLs	0.139*	0.061	0.544	0.028***
	ExpInfRd	0.159**	0.037	0.562	0.018**
	NarLitLs	0.147*	0.054	0.574	0.012*
6th	Test Form	0.269***	1.744	0.018	
	ExpInfRd	0.365***	0.052	0.399	0.381***
	ExpLitRd	0.245***	0.064	0.457	0.057***
	ExpInfls	0.143**	0.044	0.482	0.025***
	NarInfls	0.140**	0.051	0.495	0.013**
8th	Test Form	0.406***	1.422	0.183	
	Gender	0.106**	1.167		
	Presentation Order	0.246***	2.285		
	GroupDum Var1	0.007	1.891		
	GroupDum Var2	0.261***	2.323		
	ExplitRd	0.365***	0.039	0.541	0.358***
	ExpLitLs	0.207***	0.036	0.584	0.043***
	ExpInfRd	0.238***	0.034	0.605	0.021**

* $p < .05$; ** $p < .01$; *** $p < .001$

expository reading comprehension? The present study's results differ somewhat from those of previous studies in regard to: (a) the relationship between the reading and listening comprehension of narrative and expository texts, and (b) the relative contributions of reading comprehension and listening comprehension of narrative and expository texts to overall reading comprehension in each text type. Therefore, we investigate possible reasons for these differences more closely.

TABLE 4
Hierarchical regression analyses for grades 4, 6, and 8 expository reading comprehension

Grade	Variables	β	SE β	R^2	ΔR^2
4th	Test Form	0.221***	1.826	0.044	
	NarInfRd	0.536***	0.059	0.476	0.432***
	NarLitRd	0.186**	0.057	0.496	0.020**
6th	Test Form	0.286***	1.366	0.057	
	Gender	0.081*	1.251		
	NarLitRd	0.428***	0.042	0.470	0.413***
	ExpLitLs	0.164**	0.045	0.514	0.044***
	ExpInfLs	0.137**	0.044	0.528	0.014**
	NarInfRd	0.145**	0.038	0.539	0.011**
8th	Test Form	0.398***	1.614	0.062	
	Gender	0.076*	1.526		
	NarInfRd	0.335***	0.062	0.473	0.411***
	NarLitLs	0.196***	0.039	0.556	0.083***
	NarLitRd	0.262***	0.046	0.596	0.040**
	ExpInfLs	0.186**	0.043	0.619	0.023**

* $p < .05$; ** $p < .01$; *** $p < .001$

Regarding the relationship between reading comprehension and listening comprehension of narrative and expository texts, paired sample t -tests indicated that reading comprehension significantly exceeded listening comprehension for both narrative and expository texts at each of the grade levels tested (see Table 1). These results differ from those of Diakidoy and her colleagues (Diakidoy et al., 2005) who found that for both narrative and expository texts, reading comprehension exceeded listening comprehension only at grade 8, while being statistically equivalent at grades 4 and 6. Our results also differ from those of Carlisle and Felbinger (1991) who found that for expository text, comprehension in both input modalities was equivalent at grades 4, 6, and 8 for students without known

comprehension difficulties. Although our results are somewhat similar to those of Horowitz and Samuels (1985) who found that reading comprehension exceeded listening for proficient readers when presented with easier expository text, they found comprehension in both input modalities was equivalent for non-proficient readers with the easier text and for both proficient and non-proficient readers when they were presented with more difficult text.

One possible explanation for the differences between our results and those of Diakidoy's is that the participants in that study received explicit instruction in listening comprehension as part of their standard curriculum; other research has indicated that listening comprehension is malleable and can be improved with specific instruction (Pearson & Fielding, 1983; Sticht et al., 1974). In addition, it is not clear whether the developmental relationship between listening comprehension and reading comprehension is fixed or if this relationship is affected by language or other factors. For example, a meta-analysis conducted by Sticht and his colleagues (Sticht et al., 1974) indicated that listening comprehension tends to exceed reading comprehension up to about grade 6 or 7, at which point they equalize, with reading then exceeding listening at later grades. However, the studies examined in this meta-analysis were all conducted in the U.S. between 60 and 100 years ago with English-speaking students. Moreover, although Sticht's reading/listening equalization point of grade 6 or 7 was previously considered somewhat of a developmental norm, more recent data have indicated that the age at which reading comprehension begins to exceed listening comprehension might have shifted downward in the U.S. over the last several decades (Verlaan et al., 2017).

Our findings regarding the relationship between the comprehension of narrative vs. expository text were identical to those of Diakidoy's at grades 4 and 8, with narrative comprehension in both input modalities being superior to expository comprehension. In contrast to Diakidoy's results, we found that at grade 6, expository comprehension exceeded narrative comprehension for both input modalities. As discussed previously, these results were likely due to the greater difficulty of the narrative items on one of the GMRT's grade 6 test forms. It is interesting to note that the grade 6 results were also reflected in the listening measure, with expository listening comprehension exceeding narrative listening comprehension. Our finding of listening comprehension following the same pattern as reading comprehension in regards to relative text difficulty would tend to confirm views that some aspects of reading and listening comprehension are accomplished via similar or shared cognitive processes.

Our findings regarding the relative contributions of literal and inferential reading and listening comprehension of narrative and expository text to overall

narrative and expository reading comprehension also differed somewhat from those of Diakidoy and her colleagues (although their study did not distinguish between literal and inferential reading and listening comprehension). They found that narrative listening comprehension was the largest contributor at grades 4, 6, and 8 to reading comprehension for both narrative and expository text, explaining between 18% and 29% of the variance for expository text, and between 18% and 24% for narrative text. In contrast, we found that for expository reading comprehension, narrative inferential reading comprehension explained the greatest amount of the variance at grades 4 and 8 (41% – 42%), while narrative literal reading comprehension explained the greatest amount at grade 6 (41%). Moreover, we found that narrative listening comprehension contributed to expository reading comprehension only at grade 8, with narrative literal listening contributing an additional 8% of the variance.

For narrative reading comprehension, we found that expository literal reading explained the greatest portion of the variance at grades 4 (42%) and 8 (36%), while expository inferential reading explained the greatest portion at grade 6 (37%). We did find narrative inferential listening to be the second largest contributor to narrative reading comprehension at grade 4, explaining 9.4% of the variance; however, narrative inferential listening explained only 1.3% of the variance at grade 6, while neither narrative literal nor inferential listening explained any of the variance at grade 8. In summary, while Diakidoy and her colleagues found that narrative *listening* comprehension explained the greatest amount of the variance for both narrative and expository reading comprehension in grades 4, 6, and 8, we found that narrative *reading* comprehension explained the greatest amount of the variance for expository reading comprehension and vice-versa.

Again it is possible that the difference between our findings and those of Diakidoy and her colleagues might be partially explained by the listening instruction that the participants in their study received as part of their standard curriculum. Several studies have indicated that listening comprehension instruction can have a positive effect on reading comprehension (Boodt, 1984; Shany & Biemiller, 1995; Sheperd & Svasti, 1987; Sippola, 1988), which could help to explain why Diakidoy found narrative listening comprehension contributing the largest amount of the variance to both narrative and expository reading comprehension at grades 4, 6, and 8. In contrast, none of the schools in which our study was conducted had any sort of standard listening curriculum, which could help explain our findings of the dominance of reading comprehension's contribution to both narrative and expository reading comprehension across these grade levels. As mentioned previously, another possible explanation is that listening

comprehension might have decreased for a portion of the U.S. population over the last 50 years (Verlaan et al., 2017).

Discussion

Implications

One pattern that emerged from our study is that the relationship between inferential and literal reading comprehension to overall reading comprehension of narrative or expository text appeared to be related to relative text difficulty as well as to whether the text was narrative or expository. For narrative reading comprehension (the less difficult text type) at grades 4 and 8, we found that being able to attend to *literal* information in expository text while reading was the most important factor. The same pattern emerged at grade 6 for expository reading comprehension (the less difficult text type at grade 6), with attending to *literal* information in narrative text while reading being the most important factor. In other words, for less difficult text it appeared that *literal* reading comprehension was the most important contributor to reading comprehension. Our findings at grades 4 and 8 could possibly be explained by students' familiarity with narrative text structure. Because evidence suggests that inference construction might be easier for narrative than expository text structure (Eason et al., 2012; Singer et al., 1997; Singer & O'Connell, 2003), it is plausible that literal comprehension of the text would have thus been the most important determinant to overall comprehension.

For reading comprehension in the more difficult text type (expository text at grades 4 and 8 and narrative text at grade 6) the converse was true; being able to attend to *inferential* information in narrative text while reading was the most important factor at grades 4 and 8 while being able to attend to *inferential* information in expository text while reading was the most important factor at grade 6. Our results regarding the apparent primacy of inferential reading ability to the reading comprehension of more difficult text tend not only to confirm the findings of other studies that have indicated expository text can require greater inferencing demands than narrative text (Eason et al., 2012), but also to suggest that greater inferencing demands might be required by more difficult texts independent of text type. Interestingly, narrative inferential and literal reading were the only significant contributors to expository reading in Grade 4, and listening in either text type was not a significant contributor. A possible explanation for this finding is that students at this grade level tend to have had less exposure to oral language experience with expository text, such as presentations and class discussions, and they might thus be much more reliant on reading skills than oral language skills for comprehending this less familiar text type.

The increasing amounts of exposure to expository text that students receive through both oral and written input as they progress through the later elementary and middle school grades might also explain why our data from grades 6 and 8 no longer indicate the exclusive contribution of reading skills to expository text comprehension that we observed at grade 4. Listening comprehension skills actually contribute increasing amounts to expository reading comprehension between grades 6 (5.8%) and 8 (10.6%). These findings seem to confirm those of other studies, which indicate that listening comprehension continues to develop both independently from and reciprocally with reading comprehension subsequent to the acquisition of decoding ability (Berninger & Abbott, 2010; Diakidoy et al., 2005; Hedrick & Cunningham, 1995; Miller & Smith, 1989; Royer, Sinatra, & Schumer, 1990; Verlaan et al., 2017).

We believe our findings have several implications for instructional practice. Because inferencing skills seem to be the largest contributor to comprehension of more difficult text, it is important that educators focus on developing inferencing with explicit comprehension instruction (Dewitz & Dewitz, 2003). Comprehension instruction can proceed even prior to the acquisition of decoding ability through oral language interactions while books are read to the class (Kucan & Beck, 1997; Pearson & Fielding, 1983). In addition, as students begin to read, developing their abilities to recognize when questions are asking for literal vs. inferential information has also been shown to be beneficial in improving comprehension (Raphael, 1984, 1986). Indeed, the CCSS's first reading anchor standard emphasizes this ability: "Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text". Implementing assignments that require students to support their answers to inferential questions with specific textual evidence (Verlaan, Ortlieb, & Verlaan, 2014) can help develop this connection between the literal information in a text and the inferences one can draw from it.

Our findings also support the CCSS's emphasis on listening comprehension instruction and development, as we found that listening comprehension's contribution to the reading comprehension of more difficult text became larger at increasing grade levels. Although a recent study by Caplan and his colleagues indicated that reading comprehension might employ some different cognitive processes than listening comprehension at later grades (Caplan et al., 2015), they also concluded that some of the cognitive processes employed in both input modalities remained related throughout these grade levels. Moreover, a recent study found that the listening comprehension of proficient readers in elementary and middle school tends to remain very close to grade equivalent

reading comprehension; for less proficient readers, however, their listening comprehension was found to be already more than one year below grade equivalent reading comprehension at grade 4, with this gap increasing to over three years below grade equivalent reading comprehension by grade 8 (Verlaan et al., 2017). Therefore, we recommend that reading instruction curricula strive to begin to incorporate the CSSS listening comprehension standards.

Limitations and Future Research Directions

Several factors posed possible limitations to our findings. First, the listening instrument was based on and reproduced verbatim from a norm-referenced standardized reading assessment, but the listening instrument itself was not subjected to these same validation procedures. Although we used the listening instrument to derive *relative* rather than absolute measures of listening comprehension, there is the possibility that our results may have been affected by a non-standardized listening instrument. Second, the GMRT passages are relatively short, ranging from approximately 60–130 words for Level 4 to approximately 80–170 words for level 7/9, so it is possible that this shorter passage length was not fully representational of the type of narrative and expository texts to which students are exposed in their school curricula, especially at later grades. Finally, we had a fairly large sample of students at each grade level from different schools across the school district, but lack of random selection of the participants introduced another possible limitation to our study.

Based on our findings, we believe that there are several areas that warrant further research. One of the more important of these areas would be designing standardized listening comprehension assessments that are paired with comparable/parallel reading comprehension assessments. Designing and creating these assessments in unison would not only yield valuable insights into commonalities/differences between these input modalities, but would also provide a means with which the development of listening and reading comprehension could be more reliably investigated, especially longitudinally. In addition, because we found inferential comprehension to be the largest contributor to the reading comprehension of more difficult texts, it is important to examine the relationship between the development of inferential skills in listening comprehension and their development in reading comprehension, especially considering that students develop inferential comprehension skills long before they begin to read. Finally, we believe that it would be extremely beneficial to investigate the extent to which listening comprehension instruction can improve both listening and reading comprehension, given that listening comprehension is included in the CCSS.

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INSTRUCTIONAL STRATEGIES DOCUMENTED IN TEXT STRUCTURE LITERATURE: A REVIEW FROM 2000-2017

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Abstract

Text structures have gained the attention of researchers, but little consensus exists about which instructional strategies are best for this type of teaching. Text structures can aid students in improving their reading comprehension, but only through effective teaching methods. In this systematic literature review, we identify how text structures are taught for reading comprehension; additionally, we examine what age of participants are taught text structures and what types of text structures dominate instruction. We reviewed 53 studies conducted in PK-12 settings since 2000, and our results indicate that graphic organizers, think-alouds, and mentor texts dominate instruction while early childhood may be overlooked.

Keywords: Text structures; reading comprehension; pedagogy; early childhood education

Introduction

Education is a fundamental right within a just society, yet students in American schools may not be receiving the instruction they need (see *A Nation at Risk*, 1982). After revisions to the No Child Left Behind (NCLB) legislation, governors, superintendents, and education scholars determined the previous standards may not be adequately preparing students for college and careers (Shanahan, 2015). In fact, approximately 42% of students entering college, who successfully passed high school standards, needed remediation. This finding indicates that the current standards may not distinguish between student achievement levels and may not indicate success in college (Complete College America, 2012; Shanahan, 2015). Finally, Duke (2002) reported that nearly 44% of adults in the United States cannot comprehend informational texts in their daily interactions.

One solution to these concerns has been to create wider literacy interests within the Common Core State Standards (CCSS; National Governors Association, 2010). Before the CCSS, standards emphasized reading and mathematics outcomes. For the literacy standards, the primary goals were on teaching phonics, phonological awareness, fluency, vocabulary, and comprehension. The CCSS now provide standards at two levels of literacy outcomes and include technology, writing, and extended literacy content. The two levels of standards focus on teaching literacy as a core subject area with specific content and skills, as well as integrating literacy into the disciplinary subjects (i.e., mathematics, science, and social studies). With these changes, the CCSS have become broader, while still allowing for more specified instruction.

One specific area of change in the CCSS, and a strength to literacy outcomes, is the emphasis on informational texts (Shanahan, 2015). According to recent changes, children in elementary school should be receiving half of their instruction using informational texts and half with narrative texts, while the percentages shift to 70% and 30%, respectively, for secondary students (Reutzel, Jones, Clark, & Kumar, 2016; Shanahan, 2015). The extra attention on informational texts comes as a result of students reading and writing across the disciplines and being tasked with reading and understanding considerable information about those disciplines. Additionally, with the increase in knowledge dissemination through technology, students are receiving more information more quickly than ever before. Informational text instruction may help students develop the skills to understand, use, and assess this increase in information.

Due to the changes in the types of texts students are asked to read and the shifts in how students are reading those texts, an increase in text structure instruction has also occurred. As students engage a variety of text styles and organization

patterns, they need skills to dissect and comprehend the information. Text structures allow children to craft meaning, dissect texts, and understand the nuance and layers between multiple texts (Turcotte, Berthiaume, & Caron, 2018; Welie, Schoonen, & Kuiken, 2017; Williams et al., 2016). Text structures are becoming more foundational across education, beginning as early as pre-school and continuing in complexity as students progress through high school (McKee & Carr, 2016; Ray & Meyer, 2011). Researchers suggest that text structures be taught to young children, and over time, children develop their abilities to use structures in both reading and writing (Ray & Meyer, 2011; Read, Reutzel, & Fawson, 2008; Reutzel, Read, & Fawson, 2009). When children are aware of text structures, they retain and recall more information, leading to better comprehension (Ray & Meyer, 2011). Between 1978 and 2014, sixty efficacy studies were conducted on expository text structure instruction (Bohaty, Hebert, Nelson, & Brown, 2015). In a 2016 meta-analysis, researchers noted that teaching a greater variety of text structure types and teaching text structures through writing led to gains in children's expository reading comprehension (Hebert, Bohaty, Nelson, & Brown, 2016).

Text structures may present a method for teachers to help children better comprehend informational texts (Reutzel et al., 2016). While the focus on informational texts and text structures has increased, a parallel increase in teacher professional development and training with text structure instruction has not yet followed. With more attention placed on the organization patterns and flow of texts, teachers need additional strategies to help children comprehend texts that may be less familiar to them. Because the CCSS shift is still new, in education terms, students and teachers may be more comfortable with texts that are based in story; however, these changes mean that more texts in schools are based on facts (Jeong, Gaffney, & Choi, 2010).

Purpose

Text structures have gained researchers' attention, but much of the research has not been analyzed for common instructional practices that can impact students and teachers in classrooms. We sought to better understand how text structure instruction is conducted in PK-12 settings, which text structures are commonly taught, and what instructional strategies are utilized to help children understand how texts are organized. In the following sections, we provide prior research about teaching with text structures, along with the findings from our review. Finally, we make research-informed recommendations to teachers who want to use text structures to improve their students' reading comprehension of challenging texts.

Changes to the Standards and the Impact on Text Structure Instruction

The six components essential to learning language arts include reading, writing, speaking, listening, visually representing, and viewing (Foote & Debrick, 2016). Reading is integral to students' success in learning the language arts; however, reading also serves as a method through which children learn content across other disciplines. Fisher & Frey (2015) argue that students' reading development is enhanced as much through engagement with informational text as with narrative. Furthermore, an invigorated focus on utilizing the disciplines supports habits of inquiry that better align with content area learning (Fisher, Frey, & Hattie, 2017). For this reason, we focus the present systematic literature review on recent changes to the CCSS which lend themselves to teaching text structures effectively, the impact of reading informational texts, and reading across the disciplines.

According to recent national test data, PK-12 students are not performing at the desired level in reading. The 2015 National Assessment of Educational Progress (NAEP, 2015) results state that only 37% of twelfth-graders performed at or above proficient in reading. More concerning, these reading scores show no significant difference from previous years' scores, indicating that while stakeholders continue to make changes to policy, standards, and practice, little change exists in how students are performing in reading (Shanahan, 2015).

The CCSS (National Governors Association, 2010) stipulates that students should read informational texts at least as often as they read narrative, beginning in the elementary grades. With this change in education standards, more teachers now integrate nonfiction into their literacy blocks and throughout daily instruction (Duke, 2016; Pennington, Obenchain, & Brock, 2014; Vick, 2016). While this shift has represented positive changes in how children view informational text, some challenges remain.

Recent policy changes have impacted how teachers consider text structures by emphasizing the usefulness of this instruction in classrooms (Reutzel et al., 2016). For example, changes to the CCSS seek to help students read for multiple purposes and across the disciplines for enhanced and deeper comprehension of content-specific material, known as disciplinary reading and writing (see, Shanahan, Shanahan, & Misichia, 2011). With more demands on instruction, teachers must find avenues for teaching complex information in concrete ways (Duke, 2016; Williams et al., 2014). While information can be shared through both fiction and nonfiction, in unique ways, the CCSS emphasize literary nonfiction, encompassing books, digital resources, and technical materials (Maloch & Bomer, 2013). This complexity becomes more critical as teachers are

required to privilege informational texts as often as narrative texts. Informational texts have been defined as texts conveying facts about the physical and social world through language, insets, graphics, and illustrations (see Duke, Caughlin, Juzwik, & Martin, 2012; Donovan & Smolkin, 2002; Moss, 2008).

Informational texts, specifically, lend themselves to text structure instruction and benefit children by providing them with tools and strategies for navigating large amounts of new content and knowledge. Text structures represent the ways an author organizes ideas for readers to remember and use the information (Williams & Pao, 2011). When children understand the various structures, they improve their comprehension, retain more information, and better understand how ideas are conveyed (Meyer, 1987; Lapp, Grant, Moss, & Johnson, 2013; Moss, 2004).

Theoretical Framework

Historically, three theories have identified and supported text structure instruction: the construction-integration model of text comprehension, schema theory, and dual-coding theory. Schema Theory connects directly to text structure instruction by showing the reader how text is organized to create meaning. In other words, the author has pre-selected a schematic map for the information; if readers can determine the structure, they can map the information as they read, resulting in faster recall (Pyle et al., 2017). Taking the physical structural components of construction-integration and aligning those to the abstract idea of schema in the brain, we can determine how children interpret and use the physical constructs of text structures to model information. We also recognize the value of Dual-Coding Theory as part of our framework. Dual-Coding adheres to tenets noted above, and allows for deeper discussion of ways students visually engage and represent text structure when reading.

Construction-Integration Model of Text Comprehension

The construction-integration model of text comprehension states that text consists of multiple structures to help the reader gain meaning, and by analyzing those structures, readers can improve their comprehension (Kintsch, 2013). Examining the construction-integration model further, Kintsch (2013) delves into macrostructures, microstructures, and superstructures. Macrostructures determine the text's schema, or the overall semantic interpretation (Kintsch, 2013; Sanders & Schilperoord, 2006), represented by the plot, problem, resolution, or overall topic. The microstructure refers to the individual sentence-level elements that create meaning, such as character names, phrases, and sentence

parts. Finally, the superstructure composes the genre or individual structural qualities appropriate to different text forms (Sanders & Schilperoord, 2006).

Layering the macrostructure (overall organization and flow) and microstructure (sentence-level elements) reveals the text structure. Both structures contribute to the student's development toward understanding and using text structures effectively. First, a student holistically understands the text (i.e., what is the main idea?). Second, the student grasps how individual details provided by sentences create advanced meaning via the macrostructure (main idea) (see Sanders & Schilperoord, 2006).

Lastly, students create a surface-level memory of text they have read. The surface-level memory represents the schema through which the student transfers the abstract meaning into a concrete idea or mental representation. For fiction and nonfiction texts, surface-level memory helps students create summaries or answer basic comprehension questions after reading. Surface-level memory is typically short-lived and does not allow the reader to recall information over long time periods (Kintsch, 2013). Often, the reader will not remember every text detail but can recall main ideas and key support details. However, if the language is very precise, such as a slogan, joke, or poem, the reader may recall information more readily (see, Kintsch & Bates, 1977).

Schema Theory

Schema theory describes how the human brain makes meaning of the world; specifically, people create knowledge structures to support all information entering the brain (see Gunning, 2010). These models allow people to either create new representations for unique information or add new information to existing structures. When knowledge patterns are created, they allow people to retrieve information readily and associate similar information together.

In addition to creating knowledge structures about new information, schema theory also describes how individuals understand language, including how language is represented in specific cultures and contexts (Tracey & Morrow, 2012). Schema are malleable, meaning they continually adapt as a person learns new information (see Reutzel & Cooter, 2012). As students learn new information about language and how language is constructed and used, they can modify their existing schema.

Dual-Coding Theory

Dual-coding theory (Paivio, 1986; Sadoski & Paivio, 2001, 2004) explains how visual representations help children better comprehend text. Dual-coding theory

suggests that the brain has two pathways for interpreting content: the visual and the text-based. When children are presented content in multiple formats, both pathways are activated, allowing multiple opportunities for students to comprehend the material (Clark & Paivio, 1991; Downs, Boyson, Alley, & Bloom, 2011). As text structures are visual in nature and many of the instructional practices used to teach them include visual representations, dual-coding is valuable for explaining how children interpret structures.

Literature Review

Following the procedures of Cooper (2017), we conducted a systematic literature review. We analyzed the pool of research on text structure instruction from 2000 to 2017. Our goal was to examine how text structure instruction was taught directly after No Child Left Behind and the National Reading Panel's Report through the passing of the Common Core State Standards and into present day. Our review sought to answer the following questions:

1. How are text structures used to teach reading comprehension?
2. What instructional strategies are prevalent in text structure research?

We conducted a search that included articles published between January 1, 2000 and December 31, 2017 and were archived through ERIC (ProQuest), Academic Search Complete (EBSCO), Web of Science (ISI), and PsycINFO. Our search terms included *text structure(s)*, *text-structure(s)*, and *textstructure(s)*, and we manually filtered articles that also included reading comprehension as a foci. This retrieved 6,424 unique articles.

Next, we screened the title and abstract to determine if the articles were published in English, published in peer-reviewed journals, published after 2000, focused on text structure instruction, focused on reading comprehension, and focused on PK-12 students. These procedures resulted in 53 included articles. To ensure that our coding methods were reliable, both authors reviewed 15% of the sample to ensure agreement in the coding process. This resulted in double-coding 964 articles. During this process, we met weekly to discuss coding and discrepancies. Our inter-rater reliability never fell below 95%, and we maintained 100% agreement for included articles.

In our third and final step, we coded the 53 included articles for their participants, instructional strategies, and text structure types (a table of these results may be obtained by emailing the first author; due to page constraints, we have not included

that information here). These articles included qualitative, quantitative, and mixed methods studies, as well as conceptual papers emphasizing classroom instructional practices, and all reflect how text structures are used in PK-12 instruction. We conducted inter-rater coding on 26% of the sample ($n = 14$) articles with 97.25% agreement. Two independent coders reviewed the same 14 articles and completed the coding matrix. We then compared the two coding matrices to determine any differences in the coding. The remaining articles were coded independently.

Findings

In the following sections, we present general results from our synthesis as well as those related to how text structures are taught in reading comprehension.

Participants

Our inclusion criteria limited the participants to those in grades PK-12; however, the final articles reveal interesting findings about the participants (see Table 1). We did not find studies that analyzed text structures in early childhood settings, defined as birth to five-years. Most studies ($n = 31$) included children who were in the emergent reading stages in kindergarten through third-grade. Text structures are being taught to children in the early grades as they learn the basic reading and writing skills. We also found 22 studies that took place in upper elementary grades (4-6), and 21 studies that took place in secondary (7-12). Additionally, text structures appear to be emphasized more in upper elementary grades (3-6) than in secondary grades (7-12).

TABLE 1
Participant ages in coded articles

Participant Age Ranges	Number of Articles
General	
Grades K – 12	$n = 2$
Early Childhood	
Birth – 5 Years	$n = 0$
Early Elementary	
Grades K – 3	$n = 31$
Upper Elementary	
Grades 4 - 6	$n = 22$
Middle Level	
Grades 7 – 8	$n = 15$
Secondary Level	
Grades 9 – 12	$n = 6$

Instructional Strategies and Pedagogy

Next, we examined the instructional strategies described in each study. These instructional strategies focused on how text structures were taught with reading comprehension, writing, or digital literacies (see Table 2). Overwhelmingly, the most common instructional strategy documented in the included studies was graphic organizers ($n = 26$). However, 26 studies represent only 31% of our total sample, indicating that interventions may not share the same instructional practices. Other instructional strategies included think-aloud, questioning, or modeling strategies ($n = 14$), using mentor texts ($n = 13$), identifying signal words ($n = 11$), and modeling frameworks ($n = 10$). Frameworks included researcher-created and nationally-recognized protocols for teaching text structures. Specific frameworks we noted include: Language Experience Approach (LEA); Power Writing; Connect, Organize, Reflect, Extend Method (CORE); Transactional Strategy Instruction (TSI); Stop and List; Plan and Write; Comprehension Focus Group; and Intelligent Tutoring System for Text Structure Strategy.

Less common instructional strategies included story mapping ($n = 4$), teaching thesis statements, main ideas, evidence and claims ($n = 2$), teaching organization and coherence ($n = 1$), and instructing on genre ($n = 1$). Many strategies are being used to teach text structures, yet some are more common than others.

TABLE 2
Instructional strategies used in coded articles

Instructional Strategy	Number of Articles
Graphic Organizers	$n = 26$
Signal Words	$n = 11$
Organization/Coherence	$n = 1$
Frameworks (researcher-created)	$n = 10$
Genre Instruction	$n = 1$
Thesis Statement/Main Ideas/Evidence/ Claim	$n = 2$
Story Map	$n = 4$
Mentor Text	$n = 13$
Think-aloud/Modeling/Questioning	$n = 14$
Web-Based	$n = 1$
Learning Wall	$n = 1$

Types of Text Structures Taught

While less consensus applies to teaching fiction texts, five text structures are typically taught with nonfiction. In our coding scheme, we noticed the common five text structures, as well as less common text structures (see Table 3).

First, we identified how many studies used the five primary text structures found in nonfiction: cause-effect, compare-contrast, descriptive, problem-solution, and sequential. The most prevalent text structure we found in the included studies was compare-contrast ($n = 42$). Most notably, we identified the compare-contrast structure prominently in science and social studies research. Sequential represented the second most used text structure ($n = 37$) (also coded as “chronological”, “temporal”, “time order”, and “enumeration”). The third most commonly taught text structure was cause-effect ($n = 33$), and fourth was problem-solution ($n = 24$). Descriptive appeared to be taught the least in the included studies ($n = 23$), although the differences among the five primary structures were not large. Overall, these five structures still dominate the research literature.

While the primary five structures were prevalent, we also noted other organization patterns. Primarily with nonfiction texts, researchers specified the text structures taught as main idea-details ($n = 3$), question-answer ($n = 4$), or other ($n = 6$) indicating an unspecified structure. When the study emphasized fiction texts, rather than nonfiction, we found the most common structure ($n = 12$) taught was “story structure”, including an exposition, rising action, climax, falling action, and resolution. From these findings, we can conclude that there may be a difference in how research explores fiction and nonfiction.

TABLE 3
Text structures taught in coded articles

Text Structure Identified	Number of Articles
Cause-Effect	$n = 33$
Chronological/ Sequential/ Temporal/ Time Order/ Enumeration	$n = 37$
Descriptive	$n = 23$
Compare-Contrast	$n = 42$
Problem-Solution	$n = 24$
Other	$n = 6$
Question-Answer	$n = 4$
Story Structure	$n = 12$
Main Idea-Details	$n = 3$

Discussion

In the present systematic literature review, we seek to determine how text structures are taught to improve reading comprehension. We analyzed 53 articles and determined information about the text structures taught, participants included, and instructional strategies used. The two themes our analysis revealed are: (1) there is a limited focus of text structure instruction in early childhood, and (2) instructional strategies are limited to a few approaches that may not be well-defined for classroom implementation. In the following sections, we explore these findings in greater detail.

Text Structures in Early Childhood

One surprising finding among our analysis of participants was that none of our included studies examined teaching text structures in early childhood settings, prior to kindergarten. Several reasons may exist for this exclusion such as (a) our inclusion criteria omitted these studies; (b) these studies have not been conducted; or (c) text structure instruction may not be occurring in these settings. As children begin learning the foundations of concepts of print and language interactions, they could also begin to apply an understanding of how text is structured and organized, which will be helpful as they learn to read (Cervetti & Hiebert, 2018). For example, a young child reading with an adult may be able to predict a future event in the story, a pattern in the text, or a process of explaining facts as they read the text (McKee & Carr, 2016). This process is a beginning stage of text structure instruction.

Theoretically, as children are developing their knowledge and literacy skills, text structures could provide advantages as young children progress into kindergarten. First, children are developing connections to what they are learning about the world and solidifying schema around many topics. As children learn about print, they can develop schema for organization patterns. In story, children do this as they try to predict what will happen to characters or what shifts may occur in the plot. In nonfiction text, predictions are more complex and should be based on how the information is organized. For example, as young children read a book about bees, they could understand that the book discusses how the hive is structured, followed by how bees seek pollen, and finally, how the pollen moves through the hive to make honey. If a young child understands this complex text structure, she or he can make connections between the text and other topics. This also creates greater schema for both the topic of bees and the reading process.

While limited studies were conducted in early childhood, the majority of studies included students in grades kindergarten through third. This finding does

indicate that children are being exposed to text structures as they begin engaging with more rigorous texts and more reading instruction. Emergent reading benefits from text structure instruction as it can help students develop a deeper understanding of ways texts are organized. In turn, these skills may help children develop schema that will transfer across reading experiences (Tracey & Morrow, 2012).

Future research should focus and better understand the advantages of teaching text structures in early childhood. Moreover, future scholars and educators can investigate methods of text structure instruction that integrate with foundational reading skills to promote emergent reading skills.

Instructional Strategies

One goal of the present literature review was to determine which instructional strategies are commonly taught in conjunction with text structure instruction. In our research, we noted eleven different strategies used across the content areas for text structure instruction. Most often, text structure instruction included graphic organizers ($n = 26$ studies). Text structures are an abstract concept, applied to a concrete text, and graphic organizers provide a mapping method to visually model texts.

Graphic organizers. When students think about structures visually, using dual-coding theory, they can better understand how the structures organize texts (Reutzel, Read, & Fawson, 2009). Visual representations of content, organized around structure, offer pathways for students to grasp how concepts are connected in order to comprehend and infer complex ideas and concepts (Roman, Jones, Basaraba, & Hironaka, 2016). Graphic organizers also help students build schema and utilize multiple parts of their brain, as suggested by dual-coding theory. Many articles we found noted that specific graphic organizers aligned better to specific text structures (Akhondi, Malayeri, & Samad, 2011; Barton & Trimble-Roles, 2016; Carnahan & Williamson, 2015). These visual representations allow students to better understand differences among the structures, how the structures convey the meaning of the text, and how structures may be similar (Evans & Clark, 2015). Teachers can scaffold use of graphic organizers by providing blank structures students fill in with information they recognize as important from a reading. When these visuals are used consistently over time, students become attuned to ways key information relates to the structure, and are able to create their own visual representations to distinguish the most important aspects of content (Roehling, Hebert, Nelson, & Bohaty, 2017).

Research also aligns graphic organizers as a tool that can be used with other strategies, such as mentor texts (Hodges & Matthews, 2017). With this suggestion, students can read a mentor text and use the text structure to better understand the story elements and structure; and then, the students can use that same structure in their own future writing tasks or to better understand text with a similar structure (Dymock, 2007; Hodges & Matthews, 2017). Finally, when examining struggling readers, graphic organizers provided a resource to help students understand content area texts by analyzing both the structure and content knowledge (O'Connor, Beach, Sanchez, Bocian, & Flynn, 2015). In these examples, graphic organizers help students comprehend both how the text is outlined as well as the specific content included.

Mentor texts, think-alouds questioning strategies, and modeling. In addition to using graphic organizers, text structure instruction is also taught through mentor texts, think-aloud protocols, modeling, and questioning strategies. With these instructional practices, teachers help children learn text structures with mentor text and direct instruction about how to interpret them (Hodges & Matthews, 2017). First, teachers select high-quality mentor texts and read-them aloud to students. As the teacher reads, he or she engages in a think-aloud protocol, specifically focused on identifying text features and interpreting how the text is organized (Hodges & Matthews, 2017).

When text structure instruction is combined with using effective mentor texts as models, students show significantly higher scores for comprehension and writing than when other instructional practices are used without text structure instruction (Hall, Sabey, & McCellan, 2005; Williams, 2005). Hebert and colleagues conducted an important meta-analysis in 2016, which shows that teaching text structures improves children's expository reading comprehension (Hebert et al., 2016). The authors further describe four recommendations: (1) teach text structures as part of a larger approach to expository reading instruction; (2) integrate multiple text structures in instruction; (3) include writing in text structure instruction; and (4) engage in deeper research about instructional practices for text structure instruction.

Other studies highlighted how teachers asked questions focused on organization to help students understand why specific text structures helped convey the message and modeled their thinking while reading content text. Questioning while thinking aloud about structure forms a basis for guiding connections students make as they encounter and closely read complex text. Ness & Kenny (2016) suggest teachers explicitly practice thinking-aloud about a variety of texts

through scripting questions until they feel comfortable smoothly selecting and enacting strategies that best meet text demands.

Future Research

Text structures provide a way for students to concretely map abstract knowledge about a text's organization into their brain (Kintsch, 2013). By understanding and integrating the nuances provided by using text structures for reading comprehension, writing instruction, and digital literacies instruction, teachers can equip students with the skills they need to be successful with college and careers. However, as the present systematic literature review reveals text structure instruction still needs exploring.

First, we found zero research articles that met our rigorous inclusion criteria and focused on early childhood-aged participants. This shows that either text structure instruction is not occurring in this setting, or studies that do focus on this age group are using different terminology. Future research should determine which conclusion is correct and should increase the research pertaining to young children.

Additionally, our research found eleven different instructional strategies used to teach text structures; however, many strategies were not widely studied or implemented. Research can add to the existing evidence on text structure instruction by evaluating and studying how various instructional practices lead to student growth in literacy while expanding teachers' toolboxes.

Limitations

One clear limitation from our examination of instructional practices is that few practices represented the research literature. Most often, text structure instruction was linked with graphic organizers, signal words, modeling, and mentor texts. While these practices have been shown by research to help children learn about texts, they may not reach all children. Therefore, our literature review presents a gap in the research regarding for whom specific instructional practices work best and under what conditions these practices should be utilized in classrooms.

Though we followed a rigorous systematic literature review methodology, inherent limitations do exist (Slocum et al., 2012). We are limited to the databases chosen in our research design. Because we did not search every available database and conduct simultaneous hand searches, studies meeting our inclusion criteria may have been overlooked. By utilizing multiple databases finding similar

studies, we can ensure that, to the best of our knowledge and resources, our study is complete and encompasses the past 18 years.

Our study presents a publication bias as we did not include studies that were not peer-reviewed or we could not retrieve through our research libraries. Some high-quality studies may have been overlooked if they are not published in peer-review journals, such as books, book chapters, or dissertations. Our decision to only include peer-review articles predicates that peer-review adds quality to the included studies (Nelson, 2011). We did not employ meta-analytic procedures, but instead, relied on qualitative coding to determine how text structures are taught across subjects, content areas, and grades. Future research can determine the impact of these various conditions through effect sizes.

Conclusion

At their basic level, text structures symbolize the ideas, organization, and flow within a text, which are mental representations that guide readers to deeply consider nonfiction and fiction texts (Pyle et al., 2017). To scaffold critical examinations of text structures, teachers must intersect pedagogy to develop students' literacy and cognitive skills, increasing the likelihood students will employ these procedures for thinking to comprehend reading material, create written texts, and decipher digital media (Willingham, 2006). Text structures across reading, writing, and digital platforms build students' literacy skills by promoting advanced cognitive thinking.

With 53 articles meeting our rigorous inclusion standards, it is clear that text structures are valued and studied among researchers and teachers; however, through our literature review, we noted that text structures are used in limiting ways. First, text structures are privileged among the language arts and only provided a passing nod in other content areas. Additionally, when we examined instructional practices for text structure instruction, we found that few strategies were used predominately, though not in the majority of studies.

Therefore, our overall findings reveal that several gaps still exist in the research literature on text structures, providing specific and needed avenues for future research. Meanwhile, teachers would benefit from advanced research on text structures that offers multiple, research-based strategies for integrating text structures across the content areas and within reading, writing, and digital literacies. Instruction continues to become more integrated and layered, so providing teachers with tools that work is key to helping children become sophisticated, critical consumers and creators of text.

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APPENDIX A

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GOING RETRO: REVISITING HILDA TABA'S THINKING STRATEGIES TO TEACH READING COMPREHENSION

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Abstract

Questioning is a key element of thinking and reading comprehension. Hilda Taba (1902-1967) believed that thinking skills can and should be explicitly taught. To do so, Taba developed inductive questioning sequences to foster students' higher-level thinking skills. This practical paper describes how Hilda Taba's (1962, 1967, 1971) theories and strategies about thinking, generalizing, and developing concepts can be used to teach reading comprehension in today's literacy classrooms. Four of Taba's questioning sequences about generalizations (Exploring Feelings, Interpersonal Problem Solving, Analyzing Values, and Applying Generalizations) as well as her Developing Concepts model are explained and adapted as reading response discussions. These questioning sequences are used to develop the comprehension skills of questioning, inferring, making connections, and summarizing and synthesizing. The questioning sequences are listed and examples are provided using children's literature.

Keywords: Questioning, reading comprehension, Hilda Taba, inductive teaching

Introduction

Hilda Taba (1902-1967) was a well-known educator and curriculum developer of her time. While she may be best known for curriculum reform for social studies in California in the 1960s, many of Taba's philosophies and ideas are just as important for today's classroom as they were when she wrote them. For instance, Taba believed that the personal lives of children mattered for their education, that children learn in different ways and students need to show their learning in different ways –including the arts, that schools should foster the affective development of children and teach for the social justice principles of acceptance, empathy, and cultural diversity (Taba, 1962, 1967; Taba, Durkin, Fraenkel, & McNaughton, 1971).

Taba was particularly interested in students' thinking skills. Taba noted that while thinking is often an important part of curriculum outcomes, thinking skills have been poorly taught in the classroom (Taba, 1967). Taba (1967) believed in inductive teaching: "productive teaching of cognitive skills consists primarily of what we get out of the children instead of what we put into them" (p. 89). She felt that students should think for themselves rather than be told: "teachers should not supply what the students must develop for themselves" (Taba, 1967, p. 89). By giving students answers or supplying part of the thought process, teachers deny and deprive students of practicing autonomous thinking skills (Taba, 1967). In essence, Taba believed students should think for themselves and develop their own understandings rather than always being told information through direct instruction. Thinking skills are at the core of the notion of educating for a just society: students need to be independent and critical thinkers in the 21st century. In teaching students to be active and involved in social justice, autonomous critical thinking must be on the forefront of instruction.

Taba wrote extensively about the importance of questioning in developing thinking skills (1967, Taba, Durkin, Fraenkel, & McNaughton, 1971). According to Taba (1967), "A curriculum which stresses active learning, especially of cognitive skills, requires a teaching strategy which relies heavily on asking questions" (p. 79). To explicitly teach thinking skills, Taba developed a number of strategies that use questions and structured class discussions (Taba, 1967; Taba, Durkin, Fraenkel, & McNaughton, 1971). These strategies heavily emphasize the use of teacher modeling to help students become autonomous skilful questioners, and thus thinkers. Taba (1967) called asking questions "a difficult art" (p. 119). Teachers must ask the right questions at the appropriate time that are challenging and opened ended, but not too difficult (Taba, 1967).

While Taba's examples are rooted in Social Studies, she wrote that these strategies could be used for other subject disciplines (1967; Taba, Durkin, Fraenkel, & McNaughton, 1971). Only a few published commentaries explore how Taba's strategies can be used in teaching reading (Boling & Evans, 2008; Massey & Heafner, 2004; Trezise, 1972). Extending this understanding of Taba's strategies for teaching reading, I outline two areas of Taba's work in this paper and how they can be used in today's literacy classrooms: generalizing as personal response questioning sequences and the Concept Development strategy questioning sequence. Taba's strategies (1967; Taba, Durkin, Fraenkel, & McNaughton, 1971) can be used to develop the thinking skills of inferring, generalizing, determining importance, personal response, comparing and contrasting, among others. While teachers may be familiar with other questioning strategies, such as QAR (Green, 2016) and questioning for interpretation and understanding in close reading (Shanahan, n.d.), revisiting Taba's questioning sequences provide other techniques for a classroom teacher's literacy toolkit to promote independent critical thinking and social justice issues.

Applying Taba's Questioning Sequences to Teach Reading Comprehension

At its core, reading is about making meaning. Reading is an active process whereby the reader makes meaning through transactions with a text (Rosenblatt, 1994). Thinking is directly related to comprehension. As Harvey and Goodvis (2007) said succinctly, "reading is thinking" (p. 11). Getting readers to think as they read, to be aware of their thinking, and use this thinking for meaning, can be considered the main goals of comprehension instruction (Harvey & Goodvis, 2007). Thinking should also move beyond literal recall; as Boelé (2016) notes, "students can transcend the text by questioning, challenging, and evaluating the veracity of the author's message" (p. 220).

Thinking is at the root of reading comprehension, and questioning is "the master key to understanding" (Harvey & Goodvis, 2007, p. 109). The use of questioning has been studied and shown to increase reading comprehension (Basar & Gürbüz, 2017; Green, 2016). For instance, Sencibaugh and Sencibaugh (2015) found that a questioning strategy explicitly and systematically taught significantly improved the reading comprehension of eighth graders. Nappi (2017) argues that for questioning to be effective, structured higher-level interactions need to be planned by the teacher, rather simple recall interactions which tend to dominate classroom conversations. In a systematic review of the literature, Davoudi and Sadeghi (2015) report both that students and teachers are more

likely to ask lower level, predictable answer questions rather than higher level questions. Davoudi and Sadeghi (2015) state “asking higher level questions is absolutely necessary for the development of learners’ critical thinking ability” (p. 86). Posing higher-level questions asks students to have deeper engagement and discern the greater meaning of texts (Degener & Berne, 2017) and using open questions in a conversation style expands students’ inferential thinking of texts (Phillips, 2013). Questions are a powerful tool for the teacher as they promote comprehension by framing inquiries, guiding thinking, allowing students to consider information in new ways, generating discussions, leading to new insights, and promoting deeper exploration of facts and ideas. (Fisher & Frey, 2018).

While as McLaughlin (2012) points out, there are a number of variations of key reading comprehension strategies, this paper focuses on the comprehension strategies as outlined by Harvey and Goudvis (2007) and how they can be explicitly taught using Taba’s thinking strategies. Presented in this paper are modified Taba questioning sequences to suit a class or small group discussion about texts to foster students’ thinking and reading comprehension skills, while also exploring social justice related themes such as values, attitudes, and feelings. In these questionings sequences, response through talk acts as a purposeful way to think, respond, and discuss comprehension of texts (Harvey & Goodvis, 2007). It is significant to note that all of the presented questioning sequences *model* for students what Harvey and Goodvis (2007) “Beyond-The-Line questions” that require inferential and interpretative thinking (p. 120). Students themselves also participate directly in the other comprehension strategies of making connections, summarizing, synthesizing (Harvey & Goodvis, 2007).

Considerations for Teachers

When using Taba’s questioning strategies, there are a few key things for teachers to bear in mind. First, Taba stressed the importance of following the order and sequence of the questions as a way to grow students thinking skills to autonomous higher-level thinking (Taba, 1967; Taba, Durkin, Fraenkel, & McNaughton, 1971). Teachers should also resist giving value judgements (such as “good answer” or “right”) as well as taking over the discussion by providing them with hints or answers. Guiding with open-ended questions allows students to think for themselves (Taba, 1967). The questioning sequences can be used for whole class or small group instruction; some students may participate more in smaller group situations. The sequences are also appropriate for all grade and skill levels; teachers use their professional judgement to select appropriate texts, themes, and conversation questions suitable for their classes. The questions presented in the sequences are closely kept to Taba’s original questions (Taba, Durkin, Fraenkel,

& McNaughton, 1971), with some minor modifications to better suit reading tasks and use inclusive pronouns.

Thinking Strategy: Developing Generalizations

A generalization is a high-level thinking statement about the relationships among concepts (Taba, Durkin, Fraenkel, & McNaughton, 1971). In her work, Taba (Taba, Durkin, Fraenkel, & McNaughton, 1971) also distinguishes generalizations that are interpretations/conclusions from generalizations that are inferences. An interpretation/conclusion is a generalization that is derived from data or information available to the whole class/group based on a common experience. In contrast, an inference is again a generalization about relationships among data and information but encompasses a wider set of relationships than those presented to the class, and often uses students' own background knowledge and experiences.

Developing Generalizations with students follows a basic three part questioning sequence:

1. "What do you notice? See? Find? What differences did you notice?"
2. "Why do you think this happened? or How do you account for these differences?"
3. "What does this tell you about...?"

(Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 75)

It is not difficult to see how the above three questions could be applied after reading a text. For instance using *The Subway Mouse* by Barbara Reid, which tells the story of a mouse named Nib who dares to travel beyond his safe home of Sweetfall, the teacher could ask:

- "What do you notice about Sweetfall?"
- "Why do you think Nib the mouse wanted to leave Sweetfall?" or "Why do most of the mice never want to leave?"
- "What does this tell you about Nib?" or "What does this tell you about life in Sweetfall?"

In having students think about and respond to these questions, students come up with their own generalizations (interpretations and inferences) about a text.

Further, Taba provides more detailed questioning sequences to explore generalizing as personal response for affective development. The Exploring Feelings, Interpersonal Problem Solving, Analyzing Values, and Applying Generalizations Beyond a Text questioning sequences are explained below with examples from texts of how the sequences can be used in the literacy classroom. The examples below are for fiction texts, but the strategies also work well for informational texts.

Exploring Feelings

Taba's (Taba, Durkin, Fraenkel, & McNaughton, 1971) first questioning sequence about generalizing as personal response is called Exploring Feelings (see Table 1), and is a structured approach for students to explore emotions (their own and the emotions of others), as well as to investigate empathy and differing perspectives. Students will generalize their own feelings as well as the universal feelings of the human condition. In the example below, students explore the feelings in intergenerational relationships and the passing down of heirlooms using *The Patchwork Quilt* by Valerie Flournoy.

Interpersonal Problem Solving

The second of Taba's questioning sequences for generalizing as personal response, Interpersonal Problem Solving, is valuable to explore conflict (See Table 2). In this sequence, students explore and defend possible solutions to situations in a text and then relate and evaluate similar situations they have personally experienced in the past. Depending on the text, the teacher could use this questioning sequence at the end of a text or midway through a text. The questioning sequence below is used midway through *The Woman Who Outshone the Sun* by Alejandro Cruz Martinez to explore how Lucia feels as she is banished her from the village by the cruel townspeople.

Analyzing Values

Taba's (Taba, Durkin, Fraenkel, & McNaughton, 1971) final questioning sequence for generalizing as a personal response, Exploring Values, is centered around the analysis of values. Using these questions, students are asked to infer what values are involved in a text and how these values compare and contrast to their classmates values if they were in a similar situation (see Table 3). For instance, in the following questioning sequence using *The Lotus Seed* by Sherry Garland, students explore what the lotus seed means to Bà, who took the seed from the emperor's palace while fleeing Vietnam as a young woman.

TABLE 1
Questioning Sequence: Exploring Feelings as Personal Response

Step	Modified Taba Questions (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 78)	Example Using <i>The Patchwork Quilt</i> by Valerie Flournoy, Illustrated by Jerry Pinkey
Step 1 Comprehension strategy: summarizing	“What happened?”	What happened in <i>The Patchwork Quilt</i> ?
Step 2 Comprehension strategy: inferring	“How do you think (a character) felt when?”	How do you think Tanya felt as she helped her mama make the quilt? <i>Examples of possible questions for additional rounds of questioning:</i> How did you think Grandma felt when Mama wanted to buy her a quilt? How do you think Tanya felt when her grandma was sick and couldn't work on the quilt? How do you think Tanya felt when she saw her name on the quilt?
	“Why do you think (that character) would feel that way?”	Why do you think Tanya felt that way?
	“Who has a different idea about how (that character) felt?”	Does anyone have a different idea of how Tanya felt?
	“How did (other characters in the situation) feel?”	How did Mama feel as she and Tanya worked on the quilt?
Step 3 Comprehension strategies: making connections, synthesizing	“Have you ever had something like this happen to you?” OR “Has something like this happened to someone you know?”	Have you ever helped someone in your family make something special? OR Do you know anyone who has a special item that has been passed down in their family?
	“How did you feel?” OR “If this were to happen to you, how do you think you would feel?”	How did you feel helping to make this item? OR How would you feel if you were to help make something special for your family?
	“Why do you think you felt that way?” OR “Why do you think you would feel that way?”	Why do you think you felt that way? OR Why do you think you would feel that way?

Note. Steps 2 and 3 could be repeated several times using to explore a variety of situations and feelings.

Sometimes only certain questions are asked. For instance, depending on the text, Step 3 may be skipped if students have limited background experience or knowledge of the topic; however, the hypothetical question in Step 4, “If this were to happen to you, how do you think you would feel” should be kept. The teacher can also skip questions if students spontaneously answer them when responding.

Adapted from Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 78.

TABLE 2

Questioning Sequence: Exploring Interpersonal Problem Solving as Personal Response to a Text

Step	Modified Taba Questions (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 79)	Example Using <i>The Woman Who Outshone the Sun</i> by Alejandro Cruz Martinez, Illustrated by Fernando Olivera
Step 1 Comprehension strategy: summarizing	“What happened (in the story or to a character)?” OR “What did (a character) do?”	(Stop reading on page 22) What has happened so far in <i>The Woman Who Outshone the Sun</i> ?
Step 2 Comprehension strategy: inferring	“What do you think (the character) should do? Why?” “How do you think (other characters) will react if (the character) did that? Why?”	What do you think Lucia should do? Why? How do you think the villagers will react if Lucia did that? Why?
Step 3 Comprehension strategy: making connections, synthesizing	“Has something like that ever happened to you?” OR “Has something like this happened to someone you know?” OR “If this were to happen to you, how do you think you would feel?” “What did you do?” OR “What did they do?” OR “What would you do?”	Has there been a time where someone was mean to you? OR Has someone you know ever had to forgive someone? OR If you were Lucia, how do you think you would feel? What did you do? OR What did they do? OR What would you do?
Step 4 Comprehension strategy: making connections, synthesizing	“As you think back now, do you think that was a good or bad thing to do?” “Were there elements of both good and bad?” “Why do you think so?”	Thinking about this decision now, is/was it a good thing or a bad thing to ignore that mean person? Are there elements of good and bad in ignoring the mean person? Why do you think so?
Comprehension strategy: making connections synthesizing	“Is there anything you could have done differently?”	Is there anything that you or someone else could have done differently?

Note. Step 2 could be repeated several times using to explore multiple ways to solve the problem.

Steps 3-4 could be repeated several times using to explore a variety of personal experiences.

Sometimes only certain questions are asked; the teacher can skip questions if students spontaneously answer them when responding.

Adapted from Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 79.

TABLE 3
Questioning Sequence: Exploring Values as Personal Response to a Text

Step	Modified Taba Questions (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 81)	Example Using <i>The Lotus Seed</i> by Sherry Garland, Illustrated by <i>Taturo Kiuchi</i>
Step 1 Comprehension strategy: summarizing	“What did (a character) do?”	What did Bà do with the lotus seed? <i>Examples of possible questions for additional rounds of questioning:</i> What did the narrator’s little brother do after he heard the story of the lotus seed? What did Bà do once the lotus seed bloomed again?
Step 2 Comprehension strategy: inferring	“What do you think (the character’s) reasons were for (doing/saying what they did?)”	What do you think Bà ’s reasons were for keeping the lotus seed all those years?
	“What do those reasons tell you about what is important to (the character)?”	What do these reasons tell us about what is important to Bà?
Step 3 Comprehension strategy: making connections, synthesizing	“If you (specifies similar situation), what would you do? Why?”	If you had to pick one thing that you wanted to keep forever, what would it be? Why?
	“What does this show you about what <i>you</i> think is important?”	What does your keepsake show you about what you think is important?
Step 4 Comprehension strategy: synthesizing	“What differences and similarities do you see in what all these people (students and/or characters) think is important?”	What is different and similar in what you and your classmates think is important?

Note. Steps 1 through 4 could be repeated several times using to explore a variety of values.

Sometimes only certain questions are asked. The teacher can skip questions if students spontaneously answer them when responding; however, questions about students’ own values should be kept.

Adapted from Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 81.

Applying Generalizations Beyond a Text

Taba also felt that while generalization are important, students need to be able to extend their thinking and apply these newly formed generalizations to a new situation (Taba, 1967; Taba, Durkin, Fraenkel, & McNaughton, 1971). In her Applying Generalizations sequence, students hypothesize, support their predications by making links to causality, and consider alternative hypotheses.

In the modified questioning sequence for applying generalizations to texts, the teacher poses a series of questions asking students to think hypothetically about what might have happened instead or what might happen after the story. The questioning sequence asks students to target the comprehension skill of inferring by exploring multiple inferences, and supporting and explaining their inferences (See Table 4). Using *Stellaluna* by Janell Cannon, which tells the story of a young fruit bat who is raised by birds, students in the example below make and support inferences using a hypothetical situation that is beyond the text.

TABLE 4
Questioning Sequence: Applying Generalizations to a Text(s)

Step	Modified Taba Questions (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 85)	Example Using <i>Stellaluna</i> by Janell Cannon
Step 1 Comprehension strategy: inferring	“Suppose that (a particular event outside of the story), what would happen?”	Suppose that the three birds played with Stellaluna and her brothers and sisters. What do you think would happen? <i>Examples of possible questions for additional rounds of questioning:</i> Suppose that mother bat had a conversation with mother bird. What do you think would happen? Suppose that Stellaluna is grown up. What do you think would happen to her friendship with the birds?
	“What makes you think that would happen?”	What makes you think the young birds would eat the mango?
	“What would be needed for that to happen?”	What would have to happen for them to try the mango?
Step 2 Comprehension strategy: inferring	“Can someone give a different idea about what would happen?”	Does anyone else have a different idea of what would happen if the bats and the birds played all together?
Step 3 Comprehension strategy: inferring	“If, as you predicted that happened, what do you think would happen after that?”	If, as you predicted, the birds tried the bats’ food, what do you think would happen next?

Note. Steps 1 through 3 could be repeated several times using to explore a variety of scenarios.

Sometimes only certain questions are asked. The teacher can skip questions if students spontaneously answer them when responding.

Adapted from Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 85.

Concept Development Strategy

Taba's best-known questioning sequence is the Developing Concepts strategy. In this teaching strategy, students examine information or data first hand (often in the form of something tangible such as photographs or artefacts) to explore a concept or overarching idea Taba's (Taba, Durkin, Fraenkel, & McNaughton, 1971). The teacher then leads a structured conversation following a specific set of questions to guide students in inductively sorting and labeling information and considering alternative groups and labels. Students then come up with generalizations about the groupings to solidify their understanding of a concept, issue, or theme presented in the data.

Presented below is step-by-step of Taba's Developing Concepts strategy and how the questions can be used in the classroom to teach thinking skills for both non-fiction and fiction texts. See Figure 1 for a summary of the adapted sequence.

In the examples below, middle school students are exploring the desert ecosystem from a science textbook for the non-fiction example and exploring the character of Elijah in *Elijah of Buxton* by Christopher Paul Curtis for the

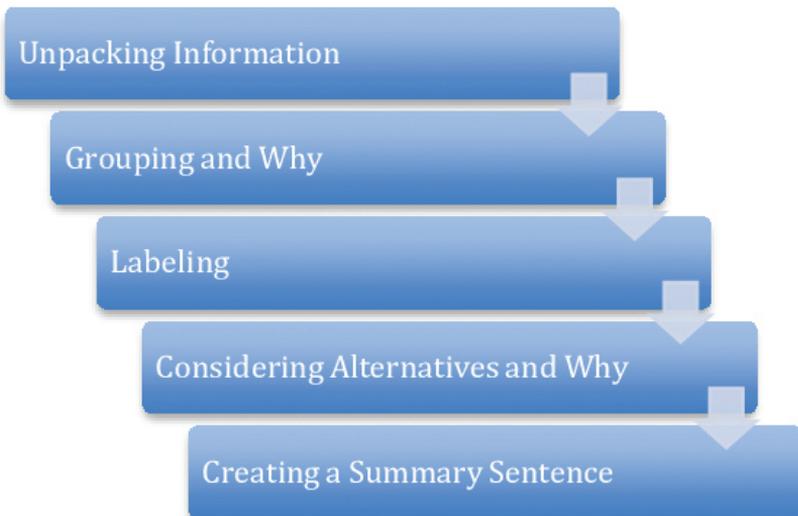


Figure 1. Taba's Adapted Questioning Sequence for Developing Concepts

Adapted from Taba, H., Durkin, M. C., Fraenkel, J. R., & McNaughton, A. H. (1971). *A Teacher's Handbook to Elementary Social Studies: An Inductive Approach*. Reading, MA: Addison-Welsey, p. 67.

fiction example. Elijah is the first child born into freedom in Buxton, Ontario, a town settled by runaway slaves from the United States. Elijah journeys back to the United States to stop a man who has stolen money from his friend, views the atrocities of slavery, and realizes the value of freedom. The overarching concepts, issue, or theme being explored below are elements and impact of the desert ecosystem and Elijah's personality traits, respectively. While the examples below demonstrate how the strategy can be used for non-fiction factual comprehension and for fiction for character analysis, the possibilities for applying the Taba strategy of Developing Concepts in the literacy classroom are numerous. Students could sort and group key words and create summary statements for: a series of books about a theme (racism, bravery, etc.), books by a particular author or illustrator, advertisements for a particular product or audience, just to name a few.

Step One: Unpacking Information

The Developing Concepts questioning sequence begins with the question, "*What do you notice here?*" (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 67). In applying the strategy for reading, students are asked to pull out important information and details after reading a text or texts. For example, using the science textbook and *Elijah of Buxton*, the teacher could ask:

- *What did you read about the desert ecosystem in the South Western United States?* (non-fiction).
- *What have you noticed so far about Elijah –what's he like as a person?* (fiction).

The teacher would record key words from the brainstorming answers on chalk or white board, chart paper, etc.

Step Two: Grouping and Why

The second step in Taba's (Taba, Durkin, Fraenkel, & McNaughton, 1971) the Developing Concepts questioning sequence is for the teacher to ask, "*Do any of these items belong together?*" (p. 67). Students make links and connections among the information they identified in step one. For instance in the fiction and non-fiction examples, the teacher could ask:

- *Do any of the things we learned about the desert go together?*
- *Do any of these things you mentioned about Elijah go together?*

It is helpful for the teacher to have different coloured or chalk or markers to circle underline, etc. the different words into different groups.

After the student or students create a group, the teacher then asks, “*Why did you group them together?*” (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 67). The teacher may ask after each grouping is proposed or after many different groups are proposed.

Step Three: Labeling

Next in Taba’s Developing Concepts sequence is the question, “*What would you call these groups that you have formed?*” (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 67). Students are thus labeling using a word or short phrase the overall idea of the grouping. For the examples about the desert and *Elijah of Buxton*, the teacher could ask:

- *What would you call this group that contains hot, dry, lack of rain, sun?*
- *What would you call each group that we made about Elijah’s personality?*

The teacher should write the names of the labels so they are visible to the class.

Step Four: Considering Alternatives and Why

Taba also stresses other perspectives and ways of thinking. To have students consider divergent views, Taba’s next question is “*Could some of these belong in more than one group?*” (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 67). For the fiction and non-fiction examples, the teacher could ask:

- *Could some of these words we listed about the desert belong in more than one group?*
- *Could some of Elijah’s character traits belong in more than one group?*

At this point the teacher may chose to ask students to re-examine the groupings and make changes to the groupings, based on the class discussion. Taba (Taba, Durkin, Fraenkel, & McNaughton, 1971) suggests that teachers ask, “*Can we put these same items into different groups?*” (p. 67). This may or may not be necessary or appropriate depending on the context. The teacher would change the groupings as needed with chalk/markers.

When a student or students propose items belonging in more than one group or alternative groupings (Taba, Durkin, Fraenkel, & McNaughton, 1971)

the teacher then asks, “*Why did you group them that way?*” (p. 67). This question asks students to explain and consider different reasons, viewpoints, and opinions. In the non-fiction and fiction example, the teacher could ask:

- *Why did you put “hot” in both Climate and Vegetation?*
- *Why do you think that Elijah “believes people” could be put in both the groups of Kind and Naïve?*

Step Five: Creating a Summary Sentence

In Taba’s (Taba, Durkin, Fraenkel, & McNaughton, 1971) final step, students are asked to consider all the groupings and make a summary sentence: “*Can someone say in one sentence something about all these groups?*” (p. 67). This summary sentence encapsulates the learning about the specific topic by having students make a generalization. For the nonfiction and fiction examples, the question could be:

- *Can someone say in a sentence something about the desert that captures all the groups we made?*
- *Can someone say in one sentence something about Elijah that uses all of the groups?*

The teacher should ask more than one student so a variety of sentences are obtained and the teacher would write these summary sentences visible for the class to see.

Conclusion

The Taba (Taba, Durkin, Fraenkel, & McNaughton, 1971) generalizing questioning sequences and Developing Concepts model provide a tangible and practical way for teachers to model questioning skills to deepen thinking skills. At the same time, students participating in these strategies explore a number of thinking and reading comprehension skills such as inferring, determining importance, and summarizing and synthesising. The questioning sequences work particularly well to explore issues of social justice and the universal human condition. Students can consider varying viewpoints while relating their thinking to their own situation. Students explore values, attitudes, and feelings and come to their own conclusions using critical thinking.

Taba’s strategies may not be new, but the importance of asking and answering good questions is timeless. As Taba explains, “Asking good questions is one of

the most effective tools a teacher has” (Taba, Durkin, Fraenkel, & McNaughton, 1971, p. 104). We have much to learn from Taba as teachers of reading. Having our students be independent autonomous critical thinkers and readers with deep understanding while considering themes of social justice are some of our top priorities. Taba has given us a number of practical and specific strategies to explicitly teach these skills to readers.

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SMALL GROUP, DIFFERENTIATED READING INSTRUCTION IS NOT USED UNLESS IT IS FULLY UNDERSTOOD: APPREHENSION, OPPOSITION, & TOILS OF TEACHERS

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Abstract

It is well documented that small group, differentiated reading instruction offers a means to enrich student reading skills. Paramount in this instruction is a teacher that understands all the aspects involved, including the challenges. While the study participant embraces constructivist teaching, based on the constructivist learning theory, this case study brings specific attention to the often-overlooked teacher apprehension, opposition, and toils in the context of teaching small group, differentiated reading instruction and the unconstructive impact these dynamics could have on the educational advancement of students.

Keywords: Small group reading instruction; differentiated reading instruction

Introduction

Educating students in reading is one of the important methods contributing to a just society. It is well documented that small group, differentiated reading instruction offers a means to enrich student reading skills thus enhancing society. Paramount in this instruction is a teacher that understands all the aspects involved, including the challenges. These aspects are varied and can include understanding exactly what small group, differentiated reading instruction, the steps involved, what reading components to embrace in instruction, how to group, formative and summative assessments to utilize, time constraints, lack of supplies, and a fear of appearing ineffectual to others. This analysis, which was part of a larger research project, examines a study participant who embraces constructivist teaching, based on the constructivist learning theory, yet this case study brings specific attention to the often-overlooked teacher apprehension, opposition, and toils in the context of teaching small group, differentiated reading instruction and the unconstructive impact these dynamics could have on the educational advancement of students.

Literature Review

Small Group, Differentiated Reading Instruction

Kosanovich, Ladinsky, Nelson, and Torgesen (2017) state the range of instructional needs within one classroom is large. One way to accommodate these instructional demands that recommended to teachers is to plan for small group, differentiated instruction. Understanding differentiated instruction is paramount. Differentiated instruction is matching instruction to meet the different needs of learners in a given classroom. Tomlinson (1999) describes differentiated instruction as “personalized instruction” that contributes to student learning. This personalized teaching is based on educator beliefs that student learning is interactive and the teacher encourages and facilitates the process of learning ultimately leading to student autonomy. This constructivist teaching is the theoretical foundation of this study (Tabor, 2011). Pinnell and Fountas (2010) state small-group reading instruction has a long history in the United States dating to the late 1800s when teachers became cognizant of the varied differences among students at the same grade levels. Researchers maintain with reading small groups, differentiation is powerful because teachers can match instruction to each student’s level as well as respond to children’s reading more effectively (Wilson, Nabors, Berg, Simpson, & Timme, 2012). Pinnell and Fountas (2010) expand this idea by asserting reading small groups led by knowledgeable educators have the strong potential to teach all aspects of reading explicitly including

comprehension, fluency, vocabulary, and word-solving strategies, leading to a deeper comprehension level for students. Also, in these small groups, students can deepen their comprehension through discussions of fiction or non-fiction texts that are more challenging than their independent reading level. As results indicated by Underwood (2010), there is a significant correlation between guided reading instruction and improvements in reading achievement including scores on mandated state assessments. Research data from Musti-Rao and Cartledge (2007) also correlate an increase in reading achievement when effective, differentiated small group reading instruction is utilized.

Teacher Influence in Small Group, Differentiated Reading Instruction

Small-group reading instruction is designed to deliver differentiated teaching that buoys students in boosting reading proficiency. The educator provides purposeful and rigorous teaching of strategic reading systems to garner proficient reading levels of students within the group. Strategic reading systems can include word work, self-monitoring and correcting, predicting, making connections, summarizing, synthesizing, inferring, analyzing, and critiquing, searching for and using information, and increasing fluency, which all can lead to greater comprehension (Pinnell & Fountas, 2010, 2011).

Educator dynamics that can influence successful small group, differentiated reading instruction includes, but not limited to, understanding truly what small group, differentiated reading instruction is and the steps within these groups, discerning and using systematic reading assessment to determine student strengths and needs, grasping student grouping factors for efficient reading instruction, and recognizing that texts are chosen along a gradient of difficulty, embracing fiction and non-fiction, and can be managed successfully with instruction (Fountas & Pinnell, 2012; Watts-Taffe, Laster, Broach, Marinak, Connor, & Walker-Dalhouse, 2012). Also in the context of these educator dynamics is teacher beliefs about differentiated instruction, Aftab (2015) found teachers want to implement differentiated instruction however they indicate they are short of planning and instructional time for differentiation and it is frustrating. Other researchers found the foremost challenges of differentiation include limited preparation time, class size, heavy workload, minimal resources, teachers' lack of proficiencies in differentiation, and teachers' lack of motivation to differentiate (Chan, Chang, Westwood, & Yuen, 2002). These studies are significant in understanding the challenges teacher face, as well as, their beliefs and perceptions about differentiated instruction.

Challenges Involving Small Group, Differentiated Reading Instruction

Pinnell and Fountas (2011) stress that understanding the various components of small group, reading instruction such as fully realizing how they work, classroom management, time, assessments, and materials needed is essential to success. Logan (2011), Robinson, Maldonado, and Whaley (2014), and Watts-Taffe, Laster, Broach, Marinak, Connor, and Walker-Dalhouse, (2012) indicate components such as time constraints, the difficulties of learning how to design and implement differentiated instruction, as well as understanding and utilizing these components effectively can be challenging to some teachers. Koutselini (2008) offers even more issues related to this teaching to include school philosophy about small group, differentiated instruction and teachers' guarded mindsets about new instructional methods. Beck, McKeown, and Kucan (2002) and Block, Rodgers, and Johnson (2004) find educators can be challenged by what reading assessments to choose and then how to use the assessment information and how to group students. Commenting on challenges of small group instruction, Tomlinson (1995) declares for educators to grasp what obstructs and what facilitates differentiated instruction is indispensable, especially if schools are to move away from one-size-fits-all. This one-size view of teaching which is often viewed as ineffective does not always meet the needs of students in understanding diverse reading concepts.

Methodology

Purpose of Study

This study is part of a larger research project that focuses on small group, differentiated reading instruction with rural, middle school students who are challenged in reading on level. The purpose of this study is to assist educators and researchers (1) in understanding small group, differentiated reading instruction; (2) in gaining insight into the apprehension, opposition, and toils of one middle school reading educator in a rural community in the southern region of the United States that utilizes small group, differentiated reading instruction; (3) consider these challenges in the context of the success or failure of these small groups.

Research Questions

The research questions guiding this study are (1) What are the beliefs and perceptions about small group, differentiated reading instruction in the context of enhancing reading knowledge and skills of students? (2) What feelings surround

the idea of using small group, differentiated reading instruction in a classroom?
(3) What aspect(s) such as thoughts, classroom management, time, assessments, and materials influence use of these small groups, if any?

Qualitative Case Study

A qualitative case study methodology is used with triangulated data from interviews, observations, artifacts, and field notes. The case study focuses on one rural, middle school, reading educator within a larger study of teachers in various grade levels in public, private, and charter schools that teach with a reading focus. This participant utilizes small group, differentiated reading instruction with her students. According to Gall, Borg, and Gall (2003), the case study approach stresses the “in-depth study of a phenomenon in its natural context and from the perspective of the participants involved in the phenomenon” (p. 436). Case study research also offers several advantages for researchers. These advantages include a thick description to assist readers in comparing and contrasting case studies and offering researchers the ability to investigate unusual phenomena, ultimately gaining greater understanding. Case studies have the potential to develop grounded theories based on collected data.

Study Participant and Setting

The case study participant has a Master of Education in Reading degree and is presently completing her doctoral degree in Curriculum and Instruction. She has taught twenty-four years in two rural, middle school settings in the southern region of the United States. She has always been a Reading Teacher in these settings. The setting of this study is also in a rural middle school reading classroom, within a Title 1 public school. The school serves a diverse population and varied socio-economic status.

Through graduate reading courses the teacher began to become familiar with the concept of Guided Reading. Seeking information on her own through the research on Guided Reading/Small Group, Differentiated Reading Instruction and at the encouragement of her graduate reading professor in her courses, she began to attempt to utilize Guided Reading/Small Group, Differentiated Reading Instruction in her middle school reading classes. She had the desire to incorporate effective, small group reading instruction in her classes but struggled. She contacted her former graduate reading professor for guidance. The professor saw an opportunity for a research case study with a focus on the implementation of Guided Reading/Small Group, Differentiated Reading Instruction. The professor discussed the research possibility with his former student ensuring she

understood as a study participant she would have interviews and teaching observations, field notes would be taken during these interviews and observations, and artifacts from her small group reading instruction would be gathered. After the discussion she consented to participate in the study.

Methods and Data Analysis

In a nine-month period twelve interviews occurred between the researcher and the study participant. Also, in this period the researcher observed the participant teaching small group reading instruction nine times. Interviews were completed after each observation (on the day of the observation). Occurrences in each teaching observation and interview guided questions asked in the next interview session. From each of these teaching observations and interview questions/answers themes developed.

During these interviews and observations comprehensive field notes were taken for each occurrence and artifacts gathered including, but not limited to, examples of teacher created reading curriculum, informal reading assessments, lesson plans, instructional techniques, strategies employed, and activities used by the teacher in small group. The field notes and artifacts also contributed to research themes.

The specific data analysis process of the interviews, observations, field notes, and artifacts included the creation of a coding system to assign units of meaning (themes) to the information compiled. During each interview the researcher took comprehensive notes. Once in another setting the researcher would examine the notes looking for units of meaning. More units (themes) were documented as more interviews were accomplished. Three initial interviews (in the first month) were given before small group instruction began. Some noteworthy themes developed immediately with these first three interviews and field notes (misunderstandings of small groups in the context of reading instruction including steps, time, grouping; apprehension to begin the instruction in the class due to misunderstandings; opposition to incorporating small group reading instruction into the daily schedule due to “no time”). In four of the following interviews a central theme became evident. The study participant had a “fear of appearing ineffectual as a reading educator.” This fear stemmed from being watched in the teaching “observations viewed by the researcher” and perhaps “giving wrong information” shared in interviews. Another theme revealed in interviews was a misunderstanding of the explicit definition of and steps involved in “small group reading instruction.” The participant admitted this confusion contributed to her fear of appearing ineffectual and her apprehension to begin small group reading instruction.

During each of the nine teaching observations (which occurred during the morning reading class) the researcher took detailed field notes. Upon leaving the observations the researcher would take time to review the field notes before the next interview (interviews occurred during the study participants' mid-morning planning period).

In each review the researcher looked for and gathered units of meaning. Data from each reviewed observation also contributed to questioning in interviews. Major themes from the teaching observations included a lack of understanding of specific steps in the design and implementation of small group reading instruction, unsure of what exact informal reading assessments to use to drive instruction, how to ensure effective student grouping for instruction, and what specific reading sub-components of phonemic awareness, phonics, vocabulary, fluency, reading comprehension to use and when exactly to use them in the sequence of teaching.

Artifacts gathered before, during, and after each of the nine teaching observations offered additional informative data. This data was coded after observations and themes emerged. Themes included while no commercial small group reading curriculum was purchased by the school district the study participant had to create her own "reading curriculum," including lesson plans (utilizing phonemic awareness, phonics, vocabulary, fluency, reading comprehension), informal reading assessments, instructional techniques, strategies employed, and activities used in small groups. Researcher reviews of this "curriculum" produced artifacts (lesson plans indicating instructional techniques, strategies, activities used, and informal assessments used) showing the study participant has a proficient understanding of the reading components used in the "created" curriculum, but at times felt less effective with specific sub-components of these major reading components (phonemic awareness, phonics, vocabulary, fluency, reading comprehension) as well as assessment choice. An additional major theme evolved from review of lesson plans. Creating time for small group reading instruction in class was the foremost challenge. The lesson plans identified forty-five minutes for each class. Initially the study participant indicated she had "no available time" in lesson plans for small group reading instruction. Reviewing this artifact supported addressing this issue in interviews and future teaching observations and lead to reorganizing class time to have small groups.

The study participant member-checked the field notes of the researcher after each observation, interview, and collection of artifacts with the intent to offer additional information and clarification if needed. Themes based on data continued to arise and are discussed in the following section. This data offers greater, detailed understanding of challenges to implementation of small group reading instruction specific to this case study.

Findings

Data findings of this study are varied and offer insight to dynamics that have the potential to influence Small Group Reading Instruction. Thematic data findings are triangulated and explained utilizing quotes from interviews and teaching observations, examining teaching in these small groups, field notes from interviews and observations, and collecting of relevant artifacts.

The idea of using small group, differentiated reading instruction is viewed by the study participant as an effective instructional method. The study participant aligns her teaching with the constructivist teaching theoretical framework. Her comments during interviews and observations and documented in field notes included “I know my teaching of reading in small groups work and help the kids.” “I know it is a good way to have students interact with me and learn reading skills they are having trouble with.” This view is based on previous understandings of Guided Reading and Small Group Reading Instruction research read in graduate coursework and discussions with her reading professor (“I know we read about that in my courses with you and I understand the research says it works.”). Yet in her actual classroom there is a sense of apprehension to using small groups; she uses various challenges as a deterrent, and there is strong opposition to incorporating small group reading instruction into the classroom setting. Constant comments in interviews included close variations of the statement “I just do not have time in the forty-five minutes I have with my students to do small groups.” In this context, Small Group Reading Instruction happens but on an extremely limited basis (“I do them but not as much as I should but I do not have the time to do in the classes.”). The participant knows the benefits of small group, differentiated instruction and wants to accomplish the teaching, but is beset with reservations which lead to very limited action to accomplish this instruction. This data aligns with her theoretical framework of constructivist teaching but “lack of time” limits accomplishing this goal.

The study participant’s sense of trepidation is based on multiple perceptions, beliefs, and classroom realities which was documented via interview and observation field notes. Specifically, a lack of explicit understanding of the definition and explanation of Small Group Differentiated Reading Instruction. In the middle school professional development sessions within her school district, explicitly teaching students in the classroom in small groups is called “Small Group Reading Instruction” and “RTI” (Response to Intervention) interchangeably. In graduate school reading coursework her professor used the phrase “Guided Reading.” Different names constantly confused the study participant until unambiguous definitions and explanations occurred in coursework and subsequent

discussions “You called it Guided Reading in our classes but my district calls it something different so I’m confused!” The study participant also offers “Once you explained it, defined it, it helped and I’m not so confused.” Based on clarifications and aligning with language used in her school district, the study participant now uses the phrase “Small Group Reading Instruction” but realizes there is more than just “explicit teaching” happening in these small groups.

In the context of Small Group Reading Instruction the study participant is unsure of the specific steps included in the design and implementation of instruction. She indicates the steps taught in school district professional development sessions differed from steps taught in coursework. She comments “I don’t understand all the steps. My district says one way to do it (explicit instruction) and Guided Reading tells me other ways with more steps.” By reading published research from her courses and conversations in the first three interviews with the researcher, she chose to follow the steps of “Guided Reading” with adaptations for older students as needed.

Understanding what reading components (phonemic awareness, phonics, vocabulary, fluency, reading comprehension) and reading sub-components (associated with each component) are addressed with students in small group differentiated reading instruction is a major concern for study participant. She expressed her desire to enhance the reading skills of her students (“I want them to know and appreciate reading.”) but is at times unsure what reading components to use and where to begin with these components. She questions whether to begin from “foundational reading knowledge” (examples: phonemic awareness and phonics) or should reading instruction link to more reading components often “covered in state mandated tests” (examples: vocabulary, fluency, and reading comprehension). Her informed knowledge leads her to assume the foundational knowledge is the place to begin but “real world” explicit and implicit messages about students passing the state mandated tests from professional development sessions in her school district indicate otherwise. Similar comments from three interviews include “The district really stresses getting kids ready for the test and I get that but I really want them to learn to read and not just take a test.”

Through graduate coursework the study participant indicates she embraces the phrase “assessment drives instruction” but understanding and effectively accomplishing that daily in the classroom can be a challenge. She reveals she sometimes is unsure which formative and summative reading assessments to use to drive instruction of reading components and sub-components that could be covered in small group instruction (phonemic awareness, phonics, vocabulary, fluency, reading comprehension, reading-writing connection). Increased experience and knowledge gained over the years has helped with this challenge but still

exists. These challenges relate to findings mentioned above. “Do I begin by assessing the students’ foundational knowledge in reading (phonemics or phonics) or do I start where my district seems to want me to start with components that affect state testing (vocabulary, fluency, reading comprehension)?” Other comments align to “I know assessment is important but is formative or summative more important to my district’s goals for state tests?”

As addressed above lack of time/fitting small group differentiated reading instruction into the educational day is continuously addressed by the study participant. She denotes via interview and observation comments multiple factors limit her class time, including the scheduled amount of time of the class (forty-five minutes) “I truly do not have the time to spend 15-20 per day on small groups with only forty-five minutes for each class.”, amount of time students use coming to and from class (“Sometimes it takes forever getting the students in the classroom, settled, focused, and ready to learn. These things take up my class period and I don’t have time for small groups.”, interruptions during class (announcements, other teachers, student misbehaviors, assemblies) “You would not believe the amount of disruptions I have during each class, anything from announcement, someone coming to my door, having to leave for some sort of presentation or assembly and what causes the most time is students misbehaving. I have discipline consequences set up but there is always one or two that think that doesn’t apply to them.”, finding appropriate time “to fit” the small group instruction into the lesson cycle/lesson plan (beginning, middle, or end of class), “I have tried fitting in groups at different times in my class but each has problems because typically I can’t get in my required teaching and groups in the small class time.” In the past she placed the small group instruction at end of class period but has been unable to effectively meet student needs without running out of time.

The study participant shares that grouping of students in small group instruction (based on assessment results) is understood to be important, but has received conflicting information in how to group (homogeneous or heterogeneous). She conveys homogeneous grouping happens in her classroom the majority of time (when small group instruction actually happens). It is perceived as easier to group students who are challenged by the same concept for instruction and this instruction will move quicker within each forty-five-minute class (“For sake of time when I have small groups, I homogeneous group as these sessions seem to flow easier.”)

Once again, the study participant indicates a strong desire to enhance the reading knowledge of her students, but stresses she faces a lack of supplies needed for small group differentiated reading instruction. Supplies are often needed in classrooms and she feels she needs more specialized selections for this instruction.

What she does have has been purchased by her. Through a collection of artifacts, observations, and interview comments over several months the researcher found effective supplies used in small group instruction. When asked, the study participant indicated “As a middle school teacher I don’t always get the reading supplies I need from my district to help my teaching in small groups. Curriculums, assessments, activities, and supplies that I do not have from previous years I find myself free online or from teacherspayteachers.com. I spend a good amount of money on teacherspayteachers.com for what I need to help my kids.”

A subtle, consistent thread through many interviews is the fear of appearing ineffectual as a reading educator. As stated, the study participant’s foremost goal is to augment the reading knowledge, strategy usage, and development of skills of her students. She realizes small group, differentiated reading instruction is paramount to this goal. Yet she acknowledges this is not consistently happening. She offers many comments in this context in an effort to not be viewed as an inefficient reading teacher. As noted she gives various remarks that are centered in genuine challenges to meet this goal and some comments are based in perception (“I know I should be doing groups more.” “There are so many things that get in the way of doing small groups.” “You just don’t understand how busy the day gets.” “Getting students in the door and in their seats to work takes time some days and I can’t get small groups in.” “Forty-five minutes is not enough time to do all that needs to be accomplished, including getting small group reading in.”

Discussion

Data from the present case study of a middle school reading teacher that utilizes small group, differentiated reading instruction indicates she values this instruction as an effective instructional method which aligns with her theoretical underpinnings of constructivist teaching which is based on constructivist learning theory, yet varied challenges create a sense of apprehension and opposition to incorporating it into the classroom setting thus limiting this usage. These challenges include understanding exactly what small group, differentiated reading instruction is, the steps involved in this instruction, what reading components and sub-components to embrace in instruction, how to group for effective instruction, formative and summative assessments to utilize, time constraints that contribute to no or limited small group reading teaching within the day, lack of supplies, and a fear of appearing ineffectual as a reading teacher to others. This data serves to answer the study research questions of (1) What are the beliefs and perceptions about small group, differentiated reading instruction in the context of enhancing reading knowledge and skills of students? (2) What feelings

surround the idea of using small group, differentiated reading instruction in a classroom? (3) What aspect(s) such as thoughts, classroom management, time, assessments, and materials influence use of these small groups, if any?

In the context of research contribution, this case study can broaden insights into what daily difficulties reading teachers face that could keep them from either not accomplishing small group, differentiated instruction or not effectively accomplishing this teaching. Ensuring small group, differentiated instruction occurs or occurs beyond a limited basis means offering effective training ensuring each teacher of reading fully understands comprehensive professional development sessions and undergraduate and graduate coursework could offer these opportunities.

Teachers of reading need explicit comprehension of the definition of “Small Group, Differentiated Reading Instruction” including specific awareness and modeling of the design and implementation steps involved. In addition, clear discernment of the reading components and sub-components addressed in instruction is paramount. These components could include but not limited to phonemic awareness, phonics, vocabulary, fluency, and reading comprehension, and reading-writing connection. To recognize and successfully utilize the importance of formative and summative reading assessments will assist educators to guide reading instruction to advance students.

Data from this study signifies there is a lack of time in utilizing small group, differentiated reading instruction in this middle school classroom. Effectual training and modeling of classroom characteristics including the lesson cycle/lesson plan and classroom management could assist. In the same context of training, understanding how to group students for operational success can bring success. Additional monies set aside by school leadership for specific supplies for small group, differentiated reading instruction can also assist reading teachers; asking leadership, who oversee budgets for these supplies, is key. Comprehensive understanding and erudition have the opportunity to relieve the fear of appearing ineffectual as a reading teacher. This gained knowledge can limit the mystification of small group, differentiated instruction, and hopefully move students who struggle with reading to a heightened level of skill, enriching our society.

The features of this case study, including the research problem and the questions being asked, afford the rationale for the research selection but the specifics can pose certain limitations including the research participant, time spent collecting data, the setting, triangulation particulars, themes discovered, and generalizability. Anchored in a real-life situation, the case study offers a resonant and ample account of the phenomenon and can contribute to greater understanding. Yet if another research participant was chosen with a differing background, years

as an in-service teacher, and specifically varied experience as a reading teacher, findings could be dissimilar.

The nine-month time-span spent in the field offers insights and illuminated meanings that have the potential to expand readers' knowledge and future teaching experiences. Conversely if researchers alter the data collecting period (either shorter or longer) alternate findings perhaps would be garnered. Additionally, while this case study offers an important role in advancing reading educator erudition it should be noted a separate setting beyond rural, middle school, Title 1, and a public school could change the findings.

Triangulation of data utilizes multiple data sources in qualitative research to acquire a comprehensive understanding of phenomena. Triangulation also has been regarded as a research approach to test validity through the merging of data from assorted sources. Specifically, for this study triangulation included interviews with and observations of a study participant, including field notes, and gathered artifacts. Subsequent research could employ various other data sources and obtain divergent understandings of the phenomena of this study.

The examined themes for this study have the possibility to help affect and perhaps even improve practice, as well as potentially shape future research. However, the overall themes discovered could be limited with the change of any previously mentioned data units in subsequent research.

Because this case study focuses on specific phenomena, the matter of generalizability emerges. While findings of this study cannot be generalized (and is seen by some as a limitation) it should be understood the vigor of single case studies. While some undervalue a case study due to this lack of generalization it should be remembered context specific data is appreciated and what was learned in this particular case can be transmitted to similar situations and perhaps can apply to the reader's classroom and/or research context.

It is well documented that small group, differentiated reading instruction offers a means to enrich student reading skills. Paramount in this instruction is a teacher that understands all the aspects involved, including the challenges. The analysis in this case study brought specific attention to the often-overlooked teacher apprehension, opposition, and toils in the context of teaching small group, differentiated reading instruction and the unconstructive impact these dynamics could have on the educational advancement of students taught.

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WRITING IN SCIENCE: INTEGRATING GENRE-BASED STRATEGY INSTRUCTION ACROSS THE CURRICULUM

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Abstract

The purpose of this study was to examine how systematic writing instruction could be applied in science writing and develop a unit on life sciences that would support students' understanding of concepts while supporting their writing skills. This study was based on the principles of design research and presents the results of one cycle of implementation. Participants were one classroom teacher and 23 fourth-grade students.

Students wrote persuasive papers at pretest and posttest on controversial topics and were also asked to respond to topic that related to their learning in science (transfer). Results showed that the quality and length of students' persuasive papers was statistically significantly different at posttest and from pretest to transfer. Students' ability to draw evidence from graphs to explain their reasoning did not improve. Teacher's feedback indicated that this is a feasible approach. Revisions from this iteration and implications for future research are discussed.

Keywords: Science, writing in science, writing instruction, opinion writing, knowledge transfer, design-based research

Introduction

Writing is a challenging task for both teachers and students (Philippakos & Moore, 2017), and as a literacy outcome, it can significantly affect students' academic performance. Learning how to write in order to effectively communicate with an audience is necessary for youngsters' future academic and professional success. For all students to have equal opportunity to develop writing competence and excel academically, writing instruction should address their needs and scaffold their independence. Therefore, quality and equitable education is a matter of social justice. As Bell states, "The goal of social justice education is full and equal participation of all groups in a society that is mutually shared to meet their needs," (Bell, 1997, p. 3). It is our democracy's ethical responsibility to support the development of writing and literacy because it can empower learners and support learners to achieve their goals.

In the United States, as a result of the Common Core State Standards Initiative (CCSSI, 2010), there has been renewed interest in the neglected "R" (National Commission on Writing, 2003) with an emphasis on reading and writing connections. The relationship between reading and writing has been reflected in the literature (Shanahan, 2006). Research on writing to read has identified specific writing approaches that promote reading comprehension (Graham & Hebert, 2010; Graham & Perin, 2007a,b). For instance, asking students to write summaries, answer questions, and take notes are strategies that support and promote reading comprehension (Graham & Hebert, 2010; Hebert, Gillespie, & Graham, 2013) and can take place in science, social studies, and English Language Arts (ELA). Research has also shown that reading interventions affect writing instruction (Graham, Liu et al., 2018; Hebert, Simpson, & Graham, 2013). Thus, when students read texts and apply reading strategies, their writing also improves.

Writing to learn is a term used to explain the application of writing in the content areas (Klein, Arcon, & Baker, 2016). Within this context, writing

activities can have significant effects on learning (Bangert-Drowns, Hurley, & Wilkinson, 2004; Graham & Perin, 2007a; Klein & Boscolo, 2016) and emphasis on specific genres can promote students' academic growth, understanding, and application (Hebert et al., 2013; Wiley & Voss, 1999). However, the process of learning through written arguments is a challenging one and may be more effective at the secondary level (Wiley & Voss, 1999) because younger students tend to focus on one side of the argument. Learning through argumentation might be effective when students develop ideas for both sides (Klein & Ehrhardt, 2013) and this process may support inquiry, reading, and writing. The purpose of this study was to examine how systematic instruction on persuasive writing could be applied in science writing, and to develop a unit on life sciences that would support students' understanding of science concepts while also addressing their writing skills. Finally, the goal was to examine the feasibility of this approach in a real-classroom setting. This work connects with the 2018 conference theme "Educating for a Just Society" as it addresses writing, which is often an aspect of literacy and does not receive instructional attention but can significantly affect academic progress and professional success. The systematically applied instructional approach draws from research and attempts to examine ways that instruction in English Language Arts (ELA) can support writing performance and content understanding within authentic contexts.

Literature Review

Argumentation in Science

Writing in science is done through the science writing heuristic (Klein et al., 2016) according to which students are involved in several writing activities and in inquiry-based tasks resulting in rich discussions about observations and experiments they conduct. Additionally, writing in science involves the incorporation of dialogic interactions among participants that leads to positive results on students' argumentation and conceptual understanding (Chen & She, 2012; Sampson, Enders, Grooms, & Witte, 2013). A study by Chen and She (2012) with 150 eighth-grade students who were randomly assigned to conventional instruction on physical science versus the recurrent online synchronous scientific argumentation program found that the latter produced statistically significantly better quality and quantity of arguments while participants improved their understanding about concepts. Even though argumentation in science has been examined with middle and high school students, it has not been examined as systematically with elementary students (Chen, Hand, & McDowell, 2013; Gillespie, Rouse, Graham, & Compton, 2017). Further, tasks that students were

asked to conduct in elementary work did not address argumentation, which is a challenging genre, yet it can support students' reasoning and provision of evidence, and it is an expectation set from the Next Generation Science Standards.

Evidence-Based Practices

One instructional approach that has significant effects on the quality of students' writing is strategy instruction (Graham, 2006; Graham, McKeown, Kiuahara, & Harris, 2012). Strategy instruction refers to the application of conscious processes for the completion of challenging tasks (MacArthur, 2011). Planning and revision are rather demanding cognitive tasks for writers. Thus, strategy instruction provides their systematic instruction. Further, strategy instruction strives to support students' ability to independently complete demanding cognitive tasks and meta-cognitively monitor and regulate their effort, time, and goals. Strategy instruction is found to yield better effects when combined with self-regulation (Graham, McKeown, et al., 2012). It should be noted that one of the most effective models of strategy instruction is the Self-Regulated Strategy Development (SRS) model that includes six stages of instructional delivery: 1) Develop background knowledge, 2) Discuss it, 3) Model it, 4) Memorize it, 5) Support it, 6) Establish independent practice (Graham, Harris, & Chambers, 2016; Harris & Graham, 2009).

Finally, strategy instruction utilizes effective pedagogical approaches for instructional delivery. Specifically, instruction is based on a gradual release of responsibility model. First, the teacher models how to complete the writing process and challenging cognitive tasks such as planning. This modeling does not include presentation or demonstration but it is based on a think-aloud method that allows students to see how the teacher completes the demanding cognitive tasks, how s/he set goals and prioritizes them, and how s/he remains motivated and focused. Next, the teacher and students collaboratively complete a response to a new topic. At this stage the teacher functions as a procedural facilitator and asks students to explain the strategy and apply it as a group. The teacher is readily available and if students are not able to provide responses s/he reverts to modeling. Finally, at the guided practice stage, students begin working on their own paper and teachers differentiate based on students' needs and provide support in as-needed-basis. One of the main differences between strategy instruction and other approaches is that strategy instruction is not timed-based but mastery-based. Thus, students are provided with several opportunities to write until they can independently apply the strategies.

The goal of this study was to examine how systematic writing instruction during English Language Arts (ELA) could also support writing in science. Further, the goal was to develop a unit in science that addressed argumentative

writing and examined the quality of argumentative writing in science. Drawing from the general principles of strategy instruction, teachers were provided with instruction on genre-based strategy instruction using a strategy for teaching strategies (STS) (Philippakos & MacArthur, in press; Philippakos, MacArthur, & Coker, 2015). STS draws from the SRSD model of instruction (Harris & Graham, 2009), connects planning and revising based on elements of the genre (Englert, Raphael, Anderson, Anthony, & Stevens, 1991), emphasizes evaluation using genre-specific criteria (Philippakos & MacArthur, 2016; Philippakos, 2017), and genre (Martin & Rose, 2012) with a focus on text structure, syntax, and linguistic needs (McCutchen, 1986), and supports summarization using the genre elements. STS with lessons on opinion writing was part of a manual provided to teachers (Philippakos & MacArthur, 2017; Philippakos et al., 2015). The STS includes the following components:

- 1. Introduction to the writing purposes.** The teacher explains the different writing purposes and focuses on the specific purpose that will be the focus of instruction.
- 2. Introduction of genre via read-alouds.** The teacher introduces the genre and discusses with students its structural elements, syntax and vocabulary, and sentence frames and transition words that are primarily used. Then a read aloud of a book that addresses that genre is provided and the teacher uses the elements of the genre to take notes. In this case the notes referred to the character's position and reasons/evidence used. At the end of the read aloud the teacher used the notes to retell the information and summarize the argument.
- 3. Evaluation of good and weak examples.** The teacher displays a good and a weak example that represent a genre and using a rubric that includes the elements of that genre analyzes each paper and scores the elements by thinking out loud and explaining whether an element is present and clear for the reader. Teacher and students collaboratively evaluate a paper and students practice evaluation in small groups. At the end of the task, students individually evaluate a paper they have written prior to instruction and set goals.
- 4. Think-aloud modeling.** The teacher conducts a think aloud and explains both the cognitive path used to complete the task as well as the ways to stay focused and motivated even though the task is demanding.
- 5. A focus on self-regulation and a mini-lesson.** The teacher discusses with students the type of comments made during the modeling and

supports them to develop phrases they could use to motivate themselves, to stay focused, to monitor their progress, and to reflect on their progress. A mini-lesson is also provided on a specific genre-related skill that can enhance students' writing (e.g., connecting reasons with evidence).

6. **Collaborative practice.** After modeling, the teacher and students write a new paper using the strategy as a group. If students struggle, the teacher might model again or model part of the strategy and then proceed with collaborative practice.
7. **Guided practice.** The teacher supports students as they work on a paper using the steps of the writing strategy. This support can be in small groups and/or in one-on-one conferences.
8. **Preparation for peer review, self-evaluation, and peer review.** Prior to peer review, the teacher shows students how to evaluate papers and how to develop comments for their peers. The task involves teacher modeling, collaborative practice, and student self-evaluation of their paper prior to their engaging to peer review.
9. **Continuous practice to mastery and independence.** Students apply the taught strategy and continuously set goals in order to master the strategy and its application on that genre.

Research Questions

The research questions that guided this work are the following:

1. What are the effects of strategy instruction on the quality of students' opinion writing at posttest and transfer?
2. Is this connection between ELA and science feasible and time-efficient?

Methodology

Participants and Setting

The study took place at a public elementary school in the east coast of the United States. The school was considered a "Green" school due to high interest in ecology, and it retained a garden where students grew vegetables and learned about plants and the ecosystem.

Participants were 23 fourth-grade students ($n= 12$ female) and their classrooms teacher (See Table 1).

TABLE 1
Demographic Information by Ethnic Group

	Female	Male	Total (n= 23)
White	4 (17.40%)	7 (30.43%)	11 (47.83%)
African American	5 (21.73%)	2 (8.69%)	7 (30.42%)
Latino	0	1 (4.35%)	1 (4.35%)
Asian	2 (8.69%)	1 (4.35%)	3 (13.04%)
Other	1(4.35%)	0	1 (4.35%)

The teacher had a Bachelor of Science degree in chemistry, a Master of Education in Elementary Studies and worked as an elementary teacher for twelve years. She was a Next Generation science teacher leader for her district and was nominated for the 2018 Presidential Award for Excellent in Mathematics and Science Teaching (PAEMST). This collaboration was the result of an interest expressed by the teacher and the school principal in writing in science and teaching students evidence-based practices that would be applicable across the curriculum.

Research Design

The study was based on the principles of design-based research (DBR) that allows for iterative cycles of implementation and revision (Reinking & Bradley, 2004), and the refinement of tools and resources with ongoing, systematic evaluation (Gravemeijer & Cobb, 2006). DBR is based on theory and informs theory, takes place in classroom settings, involves classroom teachers and acknowledges their feedback, collects both quantitative and qualitative data, and is iterative; thus, data that are collected and analyzed are used to make revisions and reapply the approach in a new setting (Bradley et al., 2012). The study took place for a month and a half.

Procedures

Prior to the beginning of the academic year, all teachers in the district (including the teacher of this study) participated in a district-wide professional development workshop that addressed genre-based strategy instruction. The workshop explained the principles of strategy instruction, self-regulation, and the pedagogical approaches that are embedded in the approach. Specifically, teachers learned how the task analysis process (Philippakos, 2018) can be applied in both reading

and writing, and how it can be used to support note-taking and retelling/summarizing. Further, teachers learned how to conduct think aloud modeling with problem solving, how to evaluate using genre-specific criteria in order to revise, how to collaboratively complete the writing process with students, and how to address students' needs during guided practice. The researcher explained the STS, showed videos of instruction, and modeled the instruction live to teachers. Teachers practiced selected tasks (modeling and evaluation) with the support of the researcher.

The teacher who participated in this work, initiated instruction on opinion writing. When she modeled, using the manual that was provided (Philippakos, et al., 2015), she analyzed the writing prompt by using a task-analysis mnemonic that examined Form, Topic, Audience, Author, and Purpose (FTAAP) (Philippakos, 2018; Philippakos & MacArthur, in press). After she identified the purpose and genre (opinion), she explained the writing process and the strategies used within it and then modeled how to complete it by also explaining its flexible nature. When planning, she developed ideas on both sides of the argument and then selected the side that was more persuasive (See Appendix A for the FTAAP and Brainstorm strategy), organized the ideas in a graphic organizer (See Appendix B for the graphic organizer (GO)), drafted the essay, and evaluated it using a rubric that included the genre's elements and a few questions that addressed syntax and linguistic needs (tone, transition words, and title). The teacher collaboratively practiced with students the use of the writing strategy, and proceeded with guided practice.

Across the instructional time, the teacher shared the need for students to apply this knowledge about writing opinion papers in science and social studies and collaborated with the researcher for the development of a unit on *structures and functions of life*. The unit explained to students the meaning of ecology, the structures of several species, and the functions of those. Then in a most specific manner the unit focused on diamond-back terrapins. Thus, it included information about the different body attributes, information about the areas of the United States that hosted them, where they laid their eggs, graphs with longitudinal data about the population of terrapins, their predators, etc.

Prior to initiating this science unit, since students had already written one persuasive paper and knew the writing strategies, the teacher showed them the image of a hatchling (no larger than a human thumb) and asked them to consider whether terrapins should or should not be household pets. All students, when they developed ideas in their brainstorming sheet, said that terrapins should be pets. Then instruction in the science unit began with students engaging in conversations with the teacher's lead addressing the science concepts and using their

knowledge about stating an opinion and supporting it with evidence to orally explain what the function of a terrapin's features was and why it was necessary. In the process of learning more about this species, the class also developed a questionnaire to ask a herpetologist. The herpetologist was contacted and students conversed and took notes. Students continued to work on other species with their teacher (e.g., salamander, crawfish) while no other reference was made to the persuasive resources. Then students were asked to write a persuasive paper and explain to the public whether terrapins should or should not be protected.

Data Collection Instruments and Analysis

Persuasive Essays. Prior to any instruction, students were asked to respond to a controversial topic in their homerooms (e.g., Should schools allow students to have a pet in their classroom?). These papers were collected by district personnel who used this information to monitor writing instruction across time and the application of the genre-based strategy instruction within the district.

Students completed a response to a controversial topic at posttest after instruction on persuasive writing was completed. Finally, students were asked to write a persuasive paper in science without any assistance from their teacher.

Quality. Quality of persuasive responses was measured using a 7-point holistic rubric that considered: organization, ideas, word choice, sentence formation, tone, and conventions. The rubric asked raters to consider these components of writing and provide one holistic measure in their score. All papers were rated by two independent raters ($r = .96$) with strong agreement (Graham, Hebert & Harris, 2015). Mean scores of the two raters were used for analysis.

Science response. All students at pretest and posttest were given a graph that provided a specific scenario on life sciences (growth of plants) and asked students to read the graph, understand its content, state their opinion and support it with evidence using the information from the graph. This measure was developed for this project.

Length. All papers were typed prior to being scored by raters and the word count feature was used to examine length. This task was complete by one of the research assistants and was replicated by a second research assistant (100% agreement).

Teacher Interviews. The classroom teacher was interviewed at the beginning of the project (prior to instruction) and at the end of the project. The purpose of the initial interview was to learn more about the teacher's practices and ways that this collaboration would be fruitful. At posttest an interview was conducted with the teacher to determine whether this work was feasible and how

the teacher considers its application as well as suggestions she would provide for improvements.

Observations. Once instruction began, the teacher was observed to assure that the writing lessons were taught with fidelity. Thus, observations were conducted both of the writing instruction during ELA and of the writing instruction during the science period. There were three observations conducted during the modeling stage.

Fidelity of implementation. A checklist was created that examined whether the components of a writing lesson were addressed as intended. Trained research assistants completed the checklist ($r = .93$) and fidelity of instruction was high for the lessons observed (97% introduction to genre and purposes, 94% for modeling, 100% for evaluation in preparation for peer review).

Findings

Quality of Persuasive Papers

Essays were analyzed using a repeated measure analysis of variance (ANOVA) (Raudenbush & Bryk, 2002) across three occasions: pretest, posttest, and transfer and the Bonferroni correction was applied ($p = .016$). Results are presented in Table 2.

Assumptions on sphericity were examined and met ($\chi^2(2) = .97, p < .77$). The results showed a statistically significant effect on quality across time ($F(2,36) = 24.19, p < .001$, partial eta squared = .67). Pairwise comparison found statistically significant differences from pretest to posttest ($p < .001$), but not from posttest to transfer ($p > .05$). Statistically significant differences were also found from pretest to transfer ($p < .001$).

TABLE 2
Quality and Length Changes Across Time

	Pretest (<i>M, SD</i>)	Posttest (<i>M, SD</i>)	Transfer (<i>M, SD</i>)	Gain from Pretest to Posttest
Quality	2.53 ^a (1.14)	4.45 ^b (1.33)	4.74 ^b (1.15)	2.21
Length	113.75 ^a (66.34)	161.60 ^b (45.05)	180.15 ^b (52.30)	66.40

Note: *M* = mean; *SD* = standard deviation.

Quality was rated on a 7-point holistic scale ($p < .001$); Length total words were counted using the word processor.

*Values with different superscripts are different at $p < .05$.

Length

A repeated measure of analysis of variance (ANOVA) was also conducted for length, and the assumption for sphericity was met ($\chi^2(2) = .97, p < .81$). There was a statistically significant effect on length with students writing longer papers from pretest to posttest ($p < .006$), and from pretest to transfer ($p < .001$), but not from posttest to transfer ($p = .57$) (See Table 2).

Science responses

In order to examine whether improvements took place in students' reasoning and use of evidence from graphs, a paired t-test was conducted (Field, 2009). However, the assumption of normality was violated as indicated by the Kolmogorov-Smirnov test ($p < .001$) and its nonparametric equivalent was used. Results of the Wilcoxon signed-rank test showed that there was no statistically significant difference on students' science responses ($Z = -1.62, p = .10$) from pretest ($M = .67, SD = .77$) to posttest ($M = 1.05, SD = .88$).

Teacher interview

At pretest the teacher expressed her concern in preparing students as writers. She acknowledged that the district had provided support on reading instruction, but teachers also needed support on writing as not all teachers were well prepared to teach it. She shared that she was not as confident teaching writing, but was excited to learn more about the genre-based strategy instruction approach; therefore, she welcomed this PD and applauded the district's focus on writing and on an evidence-based approach to teach writing. She explained that she wanted to assure that students wrote across the curriculum and that the approaches used were not contradicting each other; further, as a Next Generation teacher of science, she knew that students needed to develop the knowledge necessary to do science and think scientifically; therefore, writing in science was as important as learning how to read.

The teacher's interview at posttest indicated that the approach was feasible for her. The teacher was enthusiastic and commented on the ways students used the strategies taught at ELA in science and how the use of the same resources helped them better understand those as well as the importance of planning ideas and organizing them independently of the context they were asked to write. The teacher also shared that students were far more engaged in the writing task and in learning in science and about science. They would develop and ask questions and try to respond by stating their opinion and provide evidence through

observations. She pointed out that the fact that they were asked to write so much and think about what they were learning engaged them to write even more. Therefore, they had recently observed that the crawfish they hosted in the class had eggs, and with her support they observed and recorded their observations. Students were able to observe that there were no maternal instincts on crawfish and without getting emotional about the loss of eggs, they were able to learn a fact of life. The teacher also shared that students used the sentence frames to state their opinion and provide reasons in conversations. She suggested that this approach could be also applied in social studies especially since the Developing Strategic Writers' Program (Philippakos, et al., 2015) addresses many other genres that could be applied in social studies.

Revisions for Second Cycle of Implementation

Based on the qualitative and quantitative data collected in this first cycle of implementation the approach was found to be feasible for the teacher to implement. However, there are specific revisions that should be made prior to the application of the approach in a new site. First, data indicated that students found reading a graph and analyzing it to support a claim more challenging than anticipated. The next cycle of implementation needs to incorporate lessons on the use of evidence from graphs. Second, even though in this work we did not work on the use of sources, the next cycle should consider differentiating the reading materials for students and possibly including collaborative-jigsaw groups. In this model, all students will receive the same read aloud and be part of the same shared reading, but groups will read different-level books for note-taking and then a member from each of those group will meet with other readers to share. In this process, all students will be able to practice reading on their level for note-taking purposes. Third, surprisingly, we did not encounter plagiarism issues even though this is a common challenge when using sources. Perhaps this is because students wrote without available sources but only based on the information they had learned. In the next cycle we should include resources for writing using sources and guide students to integrate sources. Thus, the selection of appropriate reading resources will be a crucial step in this work and a challenge. This would be a needed task for them to be better prepared for academic demands that require evaluation and synthesis. Additionally, in this cycle we did not include student interviews. Even though students were enthusiastic to write about their learning and excited to share their ideas, we did not have a measure to capture this. The voices of students should be heard as they advocated for their own learning across the curriculum. Finally, in this first cycle we worked with a knowledgeable science teacher. We may need to further develop the professional

development model in the next cycle if we work with teachers who do not have this level of experience with science topics.

Discussion

The purpose of this study was to examine whether systematic writing instruction could be applied in science writing using the same principles and writing resources and to develop a science unit that would support students' understanding of science concepts and their ability to express them in writing. The results showed that students' opinion writing improved after instruction on persuasion. The results also showed that students addressed opinion writing in science effectively, since responses reflected the intended science concept appropriately. The classroom teacher commented on the value of using evidence-based writing practices and on engaging students to investigate phenomena, learn about them, and share them with others using writing. Further, the teacher found that connecting writing across the curriculum was more feasible than expected. This community of learners engaged in full participation that combined theory, practice, dialogue, and opportunities to transfer knowledge and skills across domains. Students learned the principles of a persuasion in ELA and applied those principles in science as they learned content and developed arguments. This practice allowed them to refine and redefine (through reflection and goal setting) their goals as writers, but also learn content in an engaging manner. Independently of their skills and academic performance, all students participated in readings, analysis, discussions, and all produced writing that incorporated information gained through reading. Within this context, the teacher was a collaborator and a facilitator. She taught students the content, but she also explicitly made connections across domains as she herself engaged in a process of goal setting to instructionally support the needs of all students, engage them in the content, and promote their learning through writing practice. Social justice is a goal and a process, and "the process for attaining the goal of social justice . . . should be democratic and participatory, inclusive and affirming of human agency and human capacities for working collaboratively to create change" (Bell, 1997, p. 4). In this work, students and their teacher engaged in dialogic exchanges that were afforded within an evidence-based instructional approach that acknowledged students' knowledge and agency across domains.

Significance

This study is significant for two reasons. First, it addresses persuasive writing, which is a challenging type of genre (Carter, Patterson, Donovan, Ewing &

Roberts, 2011; Sprott, 1992). The nature of the task makes the genre demanding because the author needs to provide reasons that will be convincing to the audience; therefore, the writer needs to be able to examine the persuasiveness of the argument that is made and judge it from the point of view of the reader; thus, the writer needs to read as critically as the reader would. This is a challenging and cognitively demanding task for writers because, often, writers tend to have an egocentric point of view of the argument, and are not be able to address the reasons that the reader would find convincing (Kuhn, Wang, & Li, 2011). Connected to this challenge is the lack of an immediate audience that can readily challenge students' thinking and responses for them to develop additional and convincing reasons. Therefore, even though persuasion—and argumentation—are of dialogic nature, the lack of an audience for the reader to engage in such a conversation limits the writer's ability to develop effective reasons (Ferretti, MacArthur, & Dowdy, 2000). Further, when students write on general controversial topics, their ability to provide cohesive responses elates to their knowledge about that specific topic. Similarly, when students are asked to respond using information from texts they read, their fluency and comprehension greatly influence their ability to provide clear responses and integrate ideas across texts and/or paragraphs.

Secondly, this study addresses science learning and writing in science, which recently has received attention due to the Common Core State Standards Initiative (2010), the Science standards (National Center for Education Statistics (NCES), 2012), and the Next Generation Science Standards (Achieve, 2013). Students write in order to persuade, to inform, to entertain, and to convey an experience (CCSSI, 2010; National Center for Education Statistics (NCES), 2012; Philippakos, 2018). Within these purposes, multiple genres and sub-genres are present that students a) should be able to identify when they read so they can comprehend the content and take notes to use in their writing, and b) should be able to develop in response to assignment topics. Due to these expectations, the goal is for students to write across the curriculum and conduct research in order to support their assertions using evidence from information they read and/or their scientific observations. Importantly, students should write in social studies and science. One way of doing this is for instruction to provide opportunities for students to apply writing knowledge they acquire in English Language Arts (ELA) throughout the disciplines. Thus, students can apply taught writing strategies and skills in science and use domain specific vocabulary and information to support their work. It is anticipated that this practice will support their writing and could also support their comprehension of content.

Limitations

One of the limitations of this work is the lack of a control group or a comparison group. Nevertheless, in design research the purpose is not to examine what works compared to a different approach, but what are the conditions that something works within a classroom setting and what are the contextual factors that can influence outcomes. A limitation is that we did not include student interviews. Further, we did not include a measure of motivation. The next cycle of implementation could incorporate this information. Finally, in this work we did not include a measure of reading comprehension in science to examine whether students comprehended better the specific science concepts. Their transfer essays provided the information accurately, but there was no additional science-specific measure.

Practical and Research Implications

The standards (CCSS, 2010) call for students to write across the curriculum for a variety of purposes and genres. The NextGen standards also set performance expectations for students to develop essential knowledge (not just skill) that will allow them to explore scientific phenomena, investigate, and report findings. Writing across the curriculum requires the collaboration between disciplines with professionals who know those well. Future research could examine the application of genre-based writing not only in the life sciences discipline, but with other science-foci. Further, in this work we only focused on opinion writing. Future work could examine other genres such as compare and contrast, cause-effect, and/or narrative. In addition, the use of this approach to instruction can be applicable in social studies and not only in science. For instance, students may be asked to write opinion papers from the point of view of specific historical figures. This task will better help them understand the historical context and also practice writing using a different perspective. The latter will require for them not only to write in first person but also to write using the language style, vocabulary, and syntax of the speaker that may reflect a specific time period.

Writing is a challenging and demanding cognitive and social task. Teachers are asked to prepare student-writers but without themselves having received adequate preparation from college to teach writing (e.g., Cutler & Graham, 2008; Gilbert & Graham, 2010) or adequate PD on writing (Philippakos & Moore, 2017; Troia & Graham, 2016). Writing across the curriculum while supporting students' learning of content is a challenging goal; perhaps this type of instruction in which students learn about genres in ELA and apply it across disciplines can support teachers' instruction and students' academic growth. Further,

instruction in which students actively engage in learning, set goals, and individually are supported in achieving milestones promotes social justice in education.

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APPENDIX A

Planning Materials (FTAAB, IDEAS, Graphic Organizer (GO)

PLAN

Form: What is it that I am writing? Essay Paragraph Letter Other_____

Topic:

Audience:

Author:

Purpose:

IDEAS

Brainstorm

In Favor (YES.....)	Against (NO.....)
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APPENDIX B

Graphic Organizer (GO) for Persuasive Writing

Beginning	Topic/Issue:
	Opinion/Position:
Middle	Reason 1:
	Evidence:
	Reason 2:
	Evidence:
	Reason 3:
	Evidence:
End	Restate Opinion/Position:
	Think:
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USING LITERATURE AS A SPRINGBOARD FOR MATH EXPLORATION: CONCEPTUALIZING MATHEMATICAL THINKING IN EARLY GRADES

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Abstract

Our experience with integrating reading and math have convinced us that if we teach math skills and concepts using children's favorite books, we can help even the most reluctant learner to engage in and learn from their explorations and experiences with math concepts and skills. Therefore, the intent of this article is to share some of our experiences with using an integrated approach to teaching math in early childhood classrooms. Moreover, this article will discuss how children's literature could be used to conceptualize mathematical thinking for early learners.

Keywords: Fiction literature, math literacy, integrated approach, early childhood

Introduction

As early as the 1980's researcher Robert Moses championed mathematic literacy as a civil right issue. According to his research, math literacy is a prerequisite to for full citizenship into a society. His discourse includes the belief a child not grow to be a fully functioning adult with reading, but this is equally so with math education (Moses & Cobb, 2002). When marginalized groups encounter a system that does not address mathematical needs, issues of social inequality, absolute freedom, and guaranteed privileges emerge. In the mathematic literacy discourse, the absence of the voices of diverse not associated with the dominant culture demonstrates a void. Within this void, the voiceless do not have the same freedoms and privileges the discourse infusion in developing academic and instructional practices affiliated with their children. This then becomes a civil rights issue (Edwards, & McMillon 2010; Kress, 2005; Larnell, Bullock & Jett, 2017; Moses & Cobb, 2002; Watkins, 2001). Moses and Cobb (2001) presented a historical discourse related to the understanding of mathematical thinking as the new battleground for civil rights. Accordingly, it is the right of marginalized families to develop an understanding of mathematics. Hence it is critical for educators to take a serious look at understanding mathematical thinking.

Mathematical thinking is frequently seen by many educators as a challenging content to teach and for students to grasp. This school of thought often comes from early experiences, which may not have been positive. But could you imagine what might happen if you give a child a book to enhance his/her development of mathematical concepts and skills? Perhaps, the abstractness of mathematical concepts could be conceptualized for the youngest of learners. Our experience with integrating reading and math have convinced us that if we teach math skills and concepts using children's favorite books, we can help even the most reluctant learner to engage in and learn from their explorations and experiences with math concepts and skills. Therefore, the intent of this article is to share some of our experiences with using an integrated approach to teaching math in early childhood classrooms. Moreover, this article will discuss how children's literature could be used to conceptualize mathematical thinking for early learners.

Literature Review

The notion of using an integrated reading and math approach is not a new approach. Researchers Siebert and Draper (2012) have long stated literature and math instruction should be intermingled. However, they caution, "...before literacy and mathematical educators can work together effectively, they must establish a bridge of communication between two fields that recognizes and

respects the discipline-specific goals of each field and that attempts to build common ground from which meaningful literacy instruction in a mathematics classroom can emerge.” (p. 174). Indeed, integrated approaches to instruction have been widely advocated as one of the ways to reduce fragmentation throughout the curriculum.

We know, in some important ways, learning to read and learning math are different. Math time is often somber and tense. Rigor and seriousness are essential, but so are the excitement and creativity that teachers generate when teaching language arts (Hill, Frieland & McMillen, 2016). Similarities do exist between learning to read and learning math. For example, both involve skills, but this similarity also leads to another difference. For reading, there’s one gatekeeper skill, decoding. While decoding alone isn’t sufficient for reading proficiency, it’s the essential skill that gives readers access to the entire world of printed matter. Unfortunately, this isn’t the case for math. As early learners, children learn to count, add and subtract small numbers; next, they learn about place value and working with greater numbers; then they move on to multiply and divide. They do all of this first with whole numbers, then face fractions and decimals and how to add, subtract, multiply, and divide them as well. In math, there’s no one gatekeeper skill that students can practice and perfect. Because the concepts and skills build and build, it can be daunting (Tasden, 2015).

Our research suggests that it’s possible that abstract mathematical concepts and skills can be less daunting when teachers allow learners to deeply engage in explorations and experiences through math and reading integration (Day & Haynes, 2017; Hill & McMillen, 2016; Kilpatrick & Findell, 2011; Tasden, 2015). Conceptualizing mathematical thinking through the use of age appropriate, quality children’s literature allows productive experiences that enhance the mastery of mathematical skills and concepts. Moreover, Cunningham (2014) states rigorous interdisciplinary instruction supports cognitive skill development while increasing students’ literacy and math learning through enhancing their ability to meaningfully reflect on their own work.

Methodology

As researchers working with teachers from a literacy-focused elementary school, we were challenged to figure out how to translate the key tenets of integrated literacy instruction into actual classroom practices that worked well for the students. Focusing on the integration of reading and math, we asked two basic questions: Why use literature to teach math? How should we go about infusing math with reading? Of course, numerous answers emerged to these questions, which

was also supported by noted researchers (Cunnington, Kantrowitz, Harnett, & Hill-Ries, A. 2014; Day & Haynes, 2017; Hill & McMillen, 2016; Kilpatrick & Findell, 2011; Moses & Cobb, 2001, Tasden, 2015). The simplest and most compelling reasons for us were:

- The evidence of a current movement toward integrated multidisciplinary curriculum.
- The potential benefits of integrated instruction for teaching concepts and skills in a more holistic, rather than fragmented, way.
- The theoretical grounding of integrated approaches, as found in the work of such widely respected scholars as Kilpatrick (2010).
- The support of integrated instruction given by key professional organizations, such as the National Council of Teachers of Mathematics, the National Council of Teachers of English, and the National Association for the Education of Young Child.
- The frequent occurrence of integrated topics in widely respected journals, such as *The Reading Teacher* or the *Educational Research and Review*.

We discovered, however, that beyond the rational of theoretical support, we needed to figure out the conditions for making the integration of reading and math work.

No condition emerged as more important to success than that of choosing the ‘right’ books. Massey and Riley (2013) argue that books assisted with mathematically content do not facilitate of reinforce students’ comprehension of content area material unless incorporated into instruction purposefully and appropriately. We, therefore, developed guidelines for selecting books, concluding that, minimally, the books must allow us to:

- Make linkages to our student’s background knowledge (Coppola, 2014; Kress, 2005)
- Bridge abstract knowledge to concrete knowledge (Kamina & Iyer, 2009; Larnell, Bullock& Jett, 2017; Tasden, 2015)
- Apply new knowledge to real world situations (Kilpatrick & Findell, 2001; Hill & McMillen, 2016).

Beyond these guidelines, we also grappled with the question of whether the types of books, fiction or informational, should influence our selection of

books. Accepted wisdom has been that young children grasp the concepts of fictional books because of their interest in fantasy and their constant involvement in play as a key mechanism for learning (Davis & Haynes, 2017, Tasden, 2015). However, our explorations with the question of what types of books to select from, fiction as opposed to nonfiction, led to some interesting discoveries. Quite recently, more attention has been given to the value of informational books in early childhood curriculum (Hill, Frieland and McMillen, 2016). We are finding that informational books are popular among children and are gaining prominence by book publishers. However, we resolved that the selection of books should not be limited to informational books when thinking of integration, but should adhere rigidly to our guidelines for selecting books. Therefore, we decided to begin our explorations with fictional books, a genre readily found in early childhood classes.

Findings

Mindful of our guidelines for selecting books, we generated a list of timeless classics. We would like to emphasize that in the books selected, the math content may be either explicit or implicit. For example, the *Grouchy Ladybug*, by Eric Carle, explicitly allows for the teaching of time, a math concept that is identified in the standards for mastery by kindergarten children. In contrast, *Willie Jerome*,

Book Title	Author	Grade Range	Math Concept
<i>Arthur's TV Trouble</i>	Marc Brown	1st -3rd	Money
<i>The Very Hungry Caterpillar</i>	Eric Carle	Pre-K- 1st	Time, Counting
<i>The Grouchy Ladybug</i>	Eric Carle	Pre-K-1st	Time, Counting
<i>Miss Viola and Uncle Ed Lee</i>	Alice Faye Duncan	1st -3rd	Money, Time
<i>Willie Jerome</i>	Alice Faye Duncan	1st -3rd	Time, Money
<i>The Jazz Fly</i>	Matthew Gollub	Pre-K- 1st	Counting, Time
<i>Amazing Grace</i>	Mary Hoffman	1st -3rd	Time, Money, Patterns
<i>I Love You Stinky Face</i>	Lisa McCourt	1st -3rd	Money, Time
<i>All By Myself</i>	Mercer Mayer	1st -3rd	Ordinal Numbers
<i>If You Give A Mouse a Cookie</i>	Laura Numeroff	1st -3rd	Patterns, Time
<i>Leola and The Honeybears</i>	Meodye Benson Rosales	1st -3rd	Tallying, Measurement
<i>Bunny Cakes</i>	Rosemary Wells	1st -3rd	Measurements

by Alice Faye Duncan, presents implicit information about time, e.g. the time of day that is considered inappropriate for Willie Jerome to practice his music. Importantly, all the books above fit our guidelines for selecting books.

The answer to the question of how to use books to teach math concepts and skills is illustrated in this section. For some of the books on the list below, we describe activities that we have used successfully to teach mathematical skills and concepts.

Arthur's TV Trouble by Marc Brown

Construct a pet store in the classroom. Have students bring in their favorite stuffed animals and make a price tag for them. The prices should be set up to match the number concepts being taught. Have the students figure out how much of his allowance Arthur will need to save in order to purchase a pet from the pet store. Then, using play money, allow the students to purchase their favorite pets from the pet store.

Willie Jerome and Miss Viola and Uncle Ed Lee by Alice Faye Duncan

Make a hypothetical schedule of a typical day for Willie Jerome utilizing time segments appropriate to the level of the students. Considering time in relation to seasons, determine the seasons that are represented by the 'courtship' of Miss Viola and Uncle Ed Lee. It is also possible to engage children in an author study by having them vote on the book by Duncan that they liked most. Using paper clips to vote on their favorite story have students clip the paper clips together. Using a ruler to measure the length of the paper clips, have the judges of the contest to determine which book the class liked most.

The Jazz Fly by Matthew Gollub

Make a "jazz fly" by writing the recipe and discussing the number and shapes of items needed: 1 Oreo cookie, 1 miniature Oreo cookie, 6 pretzel sticks, 2 red hot candies, 2 waxed paper wings, etc. You are now ready to extend this activity by having a "Jazz Fly" Concert. Make a concert schedule and tickets to go to the Jazz Fly concert. Students entertain at the concert with a chorale reading of the book.

Amazing Grace by Mary Hoffman

Make spiders and have students number the legs on the spiders. Allow children to count (by two's) the legs on the spider. Push the math concepts of the book

forward by providing coins from the United States and Trinidad so students can compare the coins and then use them to purchase the spiders made by the class.

All by Myself by Mercer Mayer

Using ordinal numbers, recount the sequence of events of the book. Have children use teddy bear cookies as counters to vote on the kind of juice they want to have with their cookies at snack time. Reinforcing the main idea of the book, make a graph to show the number of students who have little sisters, little brothers, or neither.

Leola and the Honeybears by Meodye Benson Rosales

Use counters to vote on the children's favorite story of Goldilocks and the three little bears or the Leola version. Reinforcing the skill of identifying main characters and counting, allow students to vote on Goldilocks or Leola as their favorite character. Select students who need extra work on counting to be judges and allow them to count the votes. To teach fractions, have children guess, in terms of fractions, the amount of porridge/soup taken from the bears' bowls, e.g. about $\frac{1}{8}$ of a cup from Papa Bear but $\frac{8}{8}$ from Baby Bear's bowl. Also, practice fractions by having children use a recipe to measure ingredients for a cooking activity that allows students to prepare a special treat for Baby Bear who was left without a nutritional lunch.

Bunny Cakes by Rosemary Wells

Using clothespins have students make a graph showing the cake that Granny would like best. Using a measuring cup, have children measure the ingredients needed to make a bunny cake for Ruby, the main character of the story.

Discussion

Many of the activities above can be used with a variety of books and can be adapted for use with children from pre-K through grade 2. The main point is, however, that if early childhood educators use books that are carefully selected and pre-examined for their value in teaching mathematical concepts and skills, the children will be motivated to productively engage in learning. They will ask more questions, make more requests, and become involved in more useful learning experiences than we might otherwise imagine, just as mouse did when he was given a cookie. Using children's literature in the teaching of mathematics in the primary grades can make teaching and learning fun, relevant, and lively.

Children experience math concepts personally, through stories that relate the use of mathematics to their daily lives and hands-on activities. Educators can introduce this concept and skill with a relatable story and follow through with hands-on activities that are sure to enthrall their students, while enhancing their understanding of the concept. When educators ground their lessons in good quality children's literature that leads to appropriate math activities, both teachers and students benefit.

In future research and exploration of practices we would like to explore the thought of utilizing nonfiction books to include building vocabulary while increasing mathematical thinking. In the same vein of social justice in relations to mathematical thinking, marginalized learners often experience vocabulary deficiencies. As a result, it would be a choice to continue our research to build both vocabulary and math literacy in an integrated method using children's non-fictional works. As it is widely known vocabulary development occurs when children are exposed to non-fictional text.

An additional consideration for continuous research with fictional book is the selection of gender-specific book. We would like to know if text with specific gender roles have an impact on the connectedness which may or may not have an impact on mathematical thinking development. As researchers of color, the social justice perspective is important. Hence social justice is the overarching rationale for our current research as well as future exploration in the area of mathematical thinking.

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