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READ

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EDITOR'S NOTE...

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Dear Readers,

The READ Editorial Team wants to thank all who submitted a manuscript!!

We hope you enjoy reading the third issue of this journal. The theme for this issue is: **Globalizing Digital Literacies**.

The theme for the **June 2017** publication is: **(Re) envisioning Literacy for Struggling Readers**.

The theme for the **December 2017** publication will be an **unthemed issue.** We invite Feature Article and Column submissions that offer a variety of viewpoints and visions related to literacy in the 21st century. The viewpoints and visions can be across multiple settings and modalities. This issue will contain an assortment of articles that helps to expand our viewpoints and visions about literacy education and literacy practices.

Please go to the website to review submission guidelines:
https://www.shsu.edu/academics/language-literacy-and-special- populations/read-journal/
We look forward to reading your manuscript!

Sincerely,

READ Editorial Team!!

READ Journal Highlights

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Winter 2016

Welcome to the third issue of *READ: An Online Journal for Literacy Educators.* The theme of this issue is **Globalizing Digital Literacies**. According to Lankshear and Knobel (2008), the term *digital literacies* is described as "a shorthand for the myriad social practices and conceptions of engaging in meaning making mediated by texts that are produced, received, distributed, exchanged, etc., via digital codification" (p. 5). Undergirding digital literacies are social practices that go beyond mere technical competencies to include the development of a particular way of thinking or "mindset" (Knobel & Lankshear, 2007). Myers, Erickson and Small (2013) declare there is no unified definition of digital literacies. Yet, they point out that *digital literacies* can be seen as either: a) the acquisition of information age skills; b) the cultivation of habits of mind; or c) the engagement in digital cultures and practices. It is the third approach that is evident in this current issue.

In the article, **"21st Century Digital and Global Teacher Preparation Efforts: A Content Analysis of Major Assignments and Assessments in Stand-Alone Children's Literature Courses"**, Laurie Sharp, Betty Coneway and Elisa Diego-Medrano present an in-depth study examining whether course syllabi for stand-alone children's literature courses from university-based, traditional educator preparation programs in Texas are preparing preservice teachers seeking a Generalist (Grade Level EC-6) certification for success within 21st century digital and global environments. Employing a content analysis methodology, the findings reveal educator preparation programs need to consider ways to transform stand alone children's literature courses to better accommodate the development of digital and global competencies among preservice teacher candidates.

In the article, **"Creating teachers' digital toolboxes through modeling: Lessons learned from technology-rich teacher education classrooms"**, Tracey Hodges and Chyllis Scott argue that teacher educators need to provide preservice and in-service teachers with opportunities to practice and learn about new technologies because these experiences will help them better understand the benefits and limitations of different types of technology and build their confidence in using technology for instructional purposes. In support of this, the authors highlight their personal experiences with modeling technology pedagogy in teacher education courses. They share their experiences with the hope that technology is embraced as an integrated part of teacher preparation.

In the article, **"Understanding the Video Game Experience through Reader Response Theory"**, April Sanders conducts a case study of 15 participants to examine three mainstream video games using Louise Rosenblatt's reader response theory. Sanders explains that adding gaming to the language arts classroom and the world of literacy means that games must be evaluated in all their complex splendor, meaning the visual and semiotic and interactive nature of the game must be considered wholly as text instead of looking at only one part of the game as text. According to Sanders, the way we view traditional print text as literacy cannot be the complete lens through which we view this new area of literacy.

In "**21st Century Teaching, Learning and Play"**, Elizabeth Cunningham, Rachel Lechmann and Elizabeth Lasley explore 21st century research on teaching practices in early childhood including play and technology. The purpose of this action research project was to develop a broader perspective on the future of early childhood teachers and their understanding of play and technology in the 21st century.

Finally, Burcu Ates and Alma Contreras-Vanegas recognize the Internet revolutionized the way we interact and communicate. In their book review of a recent publication, ***Sociolinguistics of digital literacies*** by Patricia Freidrich and Eduardo H. Diniz de Figueiredo, they discuss the author's perspectives on how language has changed by globalization and digital communication. The book's review/content go hand in hand with the theme of our issue, yet specifically exploring the globalization with regard to spread of English and Englishes and its status of a global language.

In his book review of a recent publication, ***Conducting qualitative research of learning in online spaces*****,** by Hannah Gerber, Sarah Abrams, Jen Curwood and Alecia Magnifico, Slimane Aboulkacem discusses the ways the authors lay the foundation of researching learning in online spaces. The book helps researchers connect with various communities online with limited intrusion to the space. Additionally, this book provides researchers with methods to gain insight into learning in online spaces as well as the efficient tools for research design, data collection, and analysis with rigor. The book calls for using a multi-method approach and invites researchers to be creative. Information in the book also describes learning theories, such as behaviorist, socio-cognitive, and socio-cultural as connected to learning across online spaces. The important highlights also include the profile of a creative qualitative researcher and the ethical responsibility in collecting data from human subjects. Gerber et al., encourage researchers to push the traditional boundaries of traditional qualitative research methods and provide ideas to match with the technological advancement. Their work incites the community of scholars and researchers of online spaces to consider an array of research tools in researching the fluid networked field sites.

This issue includes an eclectic selection of book reviews written by Sam Houston Writing Project participants, a National Writing Project site and by preservice teachers enrolled in undergraduate literacy courses for those seeking grades 4-8 certification in the state of Texas.

Stay tuned for the next issue in June 2017: (**Re)envisioning Literacy for Struggling Readers**.

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21st Century Digital and Global Teacher Preparation Efforts: A Content Analysis of Major Assignments and Assessments in Stand-Alone Children's Literature Courses

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Abstract

The expansion of technology access and digital devices has engendered the need for different approaches with literacy instruction in order to adequately prepare individuals to be active and successful participants in a digital and global environment. The purpose of this study was to explore how stand-alone children's literature courses have been transformed to address 21st century digital and global preparation efforts among preservice teachers. A content analysis methodology was employed using publically-accessible course syllabi for stand-alone children's literature courses required in Generalist (Grade Level EC-6) initial certification programs offered among educator preparation programs in Texas. Analyses conducted identified a total of 372 types of major assignments and assessments within which 18 were specific digital preparation efforts and eight were specific global preparation efforts. Limitations and discussion are addressed, which included two recommendations for educator preparation programs.

Keywords: children's literature, preservice teachers, digital literacies, globalization, educator preparation

In a 21st century technology-driven society, the term literacy has taken on new meanings which include digital literacies. Within an educational environment, digital literacies encompass how students "negotiate the digital world" (Jacobs, 2014, p. 101). However, the concept of digital literacy goes well beyond the integration of technology. This type of technology knowledge entails the literacies, or practices, that are used to engage in meaning-making productions through the use of digital tools (Lankshear & Knobel, 2007). Recognized as "an essential requirement for life in a digital age" (Bawden, 2008, p. 30), digital literacy has reshaped traditional notions of literacy.

The 21st century society has also enhanced the interconnectedness of people all over the world (Stewart, 2012). Technology has ushered in limitless opportunities for the amalgamation of countries and economics, which has necessitated the importance of globalizing education. In a globalized educational system, students develop knowledge and skills that prepare them to succeed in a constantly evolving, technology-driven society. Although literature once cited the presence of a digital divide due to inequities related to technology access, recent literature has

acknowledged that this gap has narrowed significantly (Cohron, 2015). However, the expansion of technology access and digital devices has engendered the need for different approaches with literacy instruction in order to adequately prepare individuals to be active and successful participants in a digital and global environment (Cohron, 2015; Hicks & Hawley Turner, 2013).

Conceptual Framework

As shown in Figure 1, the conceptual framework for this study draws upon literature that has identified the key concepts that underpin a 21st century classroom. In a digital and global environment, teacher educators must ensure that they develop preservice teachers' "pedagogy for preparing 21st-century literate students" (Zygouris-Coe, 2016, para. 2), rather than their use of "technology as a tool for the acquisition or transmission of existing knowledge and practices" (Burden, Aubusson, Brindley, & Schuck, 2016, p. 14). Teacher educators must transform literacy preparation approaches to prepare future teachers to navigate successfully within a transient 21st century digital and global learning environment (Muilenburg & Berge, 2015).

As teachers assume responsibility for 21st century classrooms, they must establish a "culture of literacy" that merges all aspects of language, literature, communication, technology tools, and culture to promote learning among all students (Moore & Grisham, 2015, p. 23). Teachers in today's classrooms must be skilled practitioners who establish technology-infused learning environments that develop students' global awareness (Cook, Bell, Nugent, & Smith, 2016) and foster students' competence with the 4Cs: creativity, collaboration, communication, and critical thinking (Partnership for 21st Century Learning, 2016).

Context of the Study

Scholarship published within the past five years concerned with preparation efforts related to 21st century digital and global competence fell into the following categories:

- scholarship that explored programmatic educator preparation efforts with digital competence (e.g., Instefjord & Munthe, 2016; Tondeur et al., 2012);
- scholarship that explored specific preparation approaches for digital competence, such as technological pedagogical content knowledge (TPACK) (e.g., Tondeur, Roblin, van Braak, Fisser, & Voogt, 2013; Yan, 2012);
- scholarship that explored digital competence among preservice teachers (e.g., Lemon & Garvis, 2016; Maderick, Zhang, Hartley, & Marchand, 2016);
- scholarship that explored programmatic educator preparation efforts with global competence (e.g., Jean-Sigur, Bell, & Kim, 2016; Poolea & Russell III, 2015);
- scholarship that explored specific preparation approaches for global competence (e.g., Oh & Nussli, 2014); and
- scholarship that explored global competence among preservice teachers (e.g., Brooks, 2015; McGaha & Linder, 2014).

In considering this scholarship base, it would seem natural that 21st century digital and global preparation efforts would also be infused throughout the literacy curriculum.

Scholarship available within the past five years also reported various techniques used by teacher educators with preservice teachers, such as use of multimodal and digital communication practices (e.g., Hundley & Holbrook, 2013; McTavish & Filipenko, 2016), non-print texts (Dobler, 2015), and literature as a tool to widen global perspectives (Durand, 2015).

Although endeavors are underway to improve educator preparation efforts with 21st century digital and global competencies, much more work still remains (Burden et al., 2016; Muilenburg & Berge, 2015). Within educator preparation programs' literacy curricula, we became interested in exploring how literacy courses were being transformed, particularly courses that are deeply rooted in traditional literacies, such as a children's literature. Viewed as a beneficial and powerful tool during literacy instruction (Gaffney, Ostrosky, & Hemmeter, 2008; Serafini & Moses, 2014), much literature has advocated for the inclusion of stand-alone children's literature coursework in educator preparation programs (Brindley & Laframboise, 2002; Greenberg, Walsh, McKee, 2015; National Council of Teachers of English, 2004; Tunks, Giles, & Rogers, 2015). Based upon this pedagogical understanding, we formulated the following research question to guide our study: How have stand-alone children's literature courses been transformed to address 21st century digital and global preparation efforts among preservice teachers?

Methodology

Sampling

We utilized purposeful sampling methods to conduct this study. We also limited the sample to include university-based, traditional educator preparation programs (EPPs) for the certificate area of Generalist (Grade Level EC-6). At the time that this study was conducted, there were 69 state-approved entities that fit these conditions (Texas Education Agency, 2016).

Next, we conducted web searches on each university's website to locate Generalist (Grade Level EC-6) initial certification program information for each EPP. Once program information was retrieved, we examined the coursework to determine if a stand-alone children's literature course was a requirement for all students seeking Generalist (Grade Level EC-6) certification. This examination revealed 53 EPPs, which we used as our study sample.

Data Collection

Six years prior to this study, the Texas legislators passed House Bill 2504, which required all state universities to post on their website information for each credit bearing undergraduate course offered, including a course syllabus. Course syllabi must also include a description of each major assignment and/or assessment. Hence, we conducted subsequent web searches on university websites to locate course syllabi from the most recent semester in which stand-alone children's literature courses were taught at EPPs in our sample. Among the 53 EPPs, 28 EPPs had course syllabi that were accessible electronically. As shown in Table 1, 47 course syllabi were collected from EPPs at public universities. Among the private institutions, follow-up web searches were con-

ducted using the name of each private institution and the title of their children's literature course. These search efforts produced five syllabi. A total of 52 course syllabi were collected with course dates ranging from Spring 2011 – Spring 2016.

Analysis Procedures

In order to explore our research question, we conducted a content analysis using the collected syllabi. Conducting a content analysis of course syllabi has been a successful method used to explore the presence and extent of specific elements within a course's planned learning experiences (Barrett, Cottrell, Newman, Pierce, & Anderson, 2015; Sweifach, 2015). For this study, we applied content analysis procedures as described by Stemler (2001) in order to "examine trends and patterns" (para. 4) among the data.

Using the syllabi collected for this study, a member of the research team created a spreadsheet to assist with retrieval of each major assignment and/or assessment from each course syllabus. In order to ensure accuracy with retrieval efforts, four undergraduate students also collected the data separately and findings were compared. Once accuracy of data retrieval was confirmed, the research team met to develop an emergent coding scheme with which to analyze data systematically (Stemler, 2001). First, the research team conducted independent reviews of the data and developed a preliminary checklist. Second, the research team met to compare their findings. During this meeting, the research team engaged in discussions to resolve differences present on their preliminary checklists and created a revised version. Third, the research team used the revised checklist to apply the coding scheme independently with the data collected from three randomly selected syllabi in the sample. Members of the research team compared their findings and engaged in discussions until they reached 100% accuracy with coding patterns. Finally, the research team coded the remaining syllabi separately and met to create a final summary sheet of their findings.

Findings

Analyses conducted identified a total of 372 types of major assignments and assessments within the following seven categories: Collaborative Class Interactions, Peer Oral Communication, Learning Experiences beyond the Classroom, Class Presentations & Performances, Technology/Digital Tasks, Traditional Assessments, and Written & Visual Artifacts. As shown in Table 2, almost one-third of all of the assignments and assessments were categorized as:

- *Written & Visual Artifacts* (n = 172, 46%). Although a large variety of assignments were represented, most of the assignments in this category required preservice teachers to compose a wide variety of written reflections, assemble collections of literature, create instructional resources, and engage with research tasks.
- *Class Presentations & Performances* (n = 52, 14%), the majority of assignments in this category entailed preservice teachers' engagement with (a) individual presentations, (b) partner and group presentations, and (c) dramatic performances within the walls of classrooms at their respective

universities.

- *Traditional Assessments* (n = 46, 12%), preservice teachers' understandings of course content in this category were measured through quizzes, tests, and examinations.

Surprisingly, less than ten percent of all major assignments and assessments were categorized as Technology/Digital Tasks (n = 33, 9%). Almost half of the assignments within this category involved preservice teachers' creation of digital artifacts or participation in asynchronous online discussions. Although ten other types of technology and digital tasks were present in children's literature course syllabi, the number of references for each of these was minimal.

The categories of Collaborative Class Interactions and Peer Oral Communication each contained the same number assignments (n = 25, 7%). Within Collaborative Class Interactions, preservice teachers collaborated with their peers during class primarily in literature circles or group tasks. With respect to Peer Oral Communication, preservice teachers communicated among their peers mostly in small groups or as a whole group.

The final category, Learning Experiences beyond the Classroom, contained the least number of major assignments and assessments (n = 19, 5%). Over half of the assignments within this category were field experiences with children, such as reading aloud with children or presenting a lesson to a class at an elementary school. Two of the assignments in this category (community service and professional development) were listed as extra credit; therefore, these were optional learning experiences made available to the preservice teachers.

Analyses also revealed 18 specific types of specific digital preparation efforts among the major assignments and assessments. Closer examination of these types demonstrated that two were directed by the teacher educator. In other words, preservice were engaged with a technology-infused learning experience prepared by the teacher educator. The remaining 16 types were preservice teacher-directed, meaning that preservice teachers were expected to utilize various technology tools to complete required assignments.

Using this same analytic approach, we identified eight types of specific global preparation efforts. Closer examination of these types showed no presence of teacher educator-directed assignments. Moreover, within the eight types that were identified as preservice teacher-directed, two types were noted as extra credit. Thus, these extra credit assignments would be optional assignments that preservice teachers would elect to complete.

Limitations and Discussion

As described in our methodology, we limited our analysis to course syllabi collected from university-based, traditional EPPs for the certificate area of Generalist (Grade Level EC-6). We applied this limitation because EPPs are bound by state educator certification rules, which have differences among certification areas and program types (i.e., traditional and alternative). Another limitation of this study was the data that was collected from course syllabi. We viewed each syllabus as a permanent record of stand-alone children's literature courses. However, as Barrett et al. (2015) noted, ". . . syllabi may be incomplete, may lack detail, and are sub-

ject to change throughout the semester" (p. 257). A final limitation would be related to our use of manifest content during analyses. According to Berg (2001), manifest content describes the "elements that are physically present and countable" (p. 242). For example, in order to be coded as a specific type of global preparation effort, we looked for explicit references related to development of preservice teachers' globalized perspectives. In other words, identification of global preparation efforts were limited to assignments that developed preservice teachers' ability to "perceive and know the people and cultures within their world" (Merrill, Braskamp, & Braskamp, 2012, p. 306). Therefore, to meet the exploratory purpose for our study, we felt that using interpretive analytic techniques with latent content was not appropriate.

In looking at our findings, we discovered that a large number of assignments presented preservice teachers with learning opportunities to foster their development with learning and innovation skills (Partnership for 21st Century Learning, 2016). As shown in Table 5, collected data pointed to several examples of assignments in stand-alone children's literature courses where preservice teachers were likely to use and develop their skills with creativity, collaboration, communication, and critical thinking. We argue that continued inclusion of these types of learning experiences is vital for preservice teachers. Although educational systems are fundamentally grounded in the development of students' disciplinary knowledge, it is equally critical that teachers promote students' development with learning and innovation skills to prepare them for success within 21st century digital and global environments (Kereluick, Mishra, Fahnoe, & Terry, 2013).

With respect to digital competence, we were disappointed that the data did not show a larger presence with specific digital preparation efforts. We acknowledge that a significant number of assignments implicitly suggested preservice teachers' usage of technology tools to create meaning-making productions, such as the creation of instructional resources would most likely involve the use of word processing tools or access to electronic resources (Lankshear & Knobel, 2007). However, our analyses focused upon manifest content that explicitly referenced ways in which preservice teachers developed understandings related to establishing a "culture of literacy" in their future classrooms (Moore & Grisham, 2015, p. 23). With this in mind, cultivating digital competence among preservice teachers must go well beyond the mere integration of digital and technology tools and focus upon development of preservice teachers' pedagogy for teaching students within 21st century digital and global environments (Burden et al., 2016; Zygouris-Coe, 2016).

We held similar concerns with the presence of specific global preparation efforts. Although the analyses with manifest content may have been a limiting factor, the lack of teacher educator-directed assignments and the narrow scope of preservice teacher-directed assignments strongly suggested that this preparation effort requires attention. Exposing preservice educators to a wide variety of cultures and perspectives through diverse

texts is a beneficial and effective way to foster global competency (Dwyer, 2016). However, extending preservice teachers' connectivity with others worldwide is of equal importance. In a 21st century digital and global environment, global competency is concerned with "connecting, creating, collaborating, and communicating across a global network" (p. 136).

Based on these discussion points, we developed two recommendations. First, we noted that our search efforts for relevant literature that focused upon digital and global competence among teacher educators was incredibly sparse and resulted in only one publication (Krumsvik, 2014). Just as frequent and ongoing professional development among practicing teachers is important, teacher educators must also have opportunities to engage with high-quality professional development experiences related to preparation efforts within 21st century digital and global environments. We recommend that educator preparation programs provide teacher educators with adequate resources and support to stay current with educational trends and learning expectations so that they may remain relevant with their preparation efforts.

Second, literature published over the past 16 years has noted that educator preparation programs have begun to eliminate or alter the delivery of content from stand-alone children's literature courses (Hoewisch, 2000; Tunks et al., 2015). We wondered if this might be related to the perceived relevance of the course's content, especially since it has an historic grounding in traditional literacies, such as reading. However, children's literature has been deemed an invaluable tool during 21st century literacy instruction (Aerila & Rönkkö, 2015; Cetin & Bay, 2015; Monobe & Son, 2014; Serafini & Moses, 2014; Sun, 2016), and preservice teachers must be trained in how to select, evaluate, and incorporate children's literature into effective literacy instruction (Bouley, 2011; Escamilla & Nathenson-Mejía, 2003; Hug, 2010). With this in mind, we strongly advocate that educator preparation programs keep stand-alone children's literature courses as one of their program requirements and carefully consider how to transform these courses to better accommodate the development of digital and global competencies among preservice teacher candidates. We encourage teacher educators to engage in curriculum transformation endeavors collaboratively (Moffat, 2010) and consider employing innovative course redesign techniques, such concept mapping (Simon, 2010), teaching portfolios (Quinlan, 2002), and peer reviews (Mager et al., 2014).

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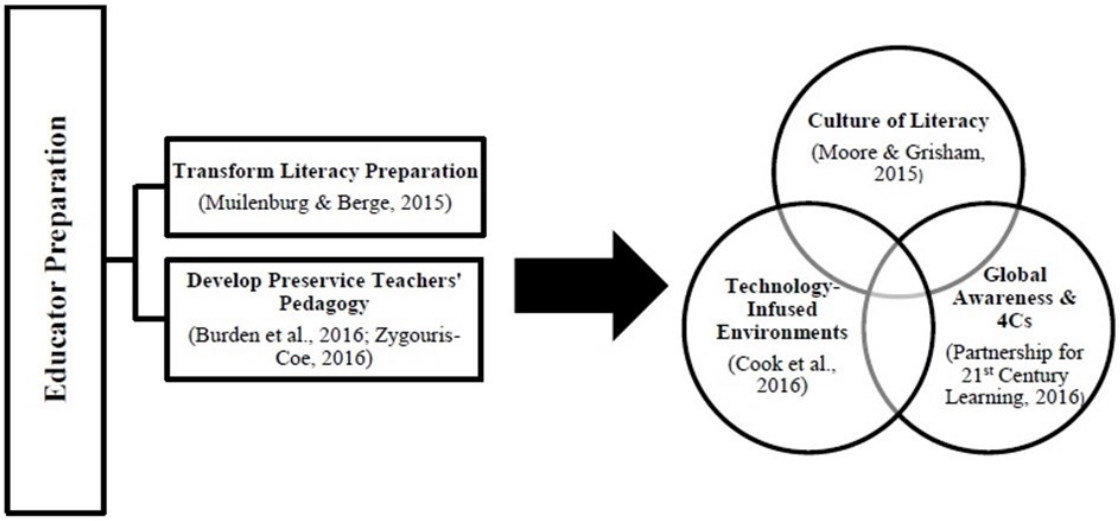

Figure 1. Conceptual framework that depicts visually the literature-based concepts underpinning the relationship between educator preparation and 21st century classrooms in a digital and global environment.

Table 1. *Summary of Syllabi Collected*

EPP	Type	Number of Syllabi	Semester
1	Public	2	Spring 2016
2	Private	1	Spring 2011
3	Private	1	Fall 2014
4	Public	1	Spring 2016
5	Public	2	Fall 2015
6	Public	1	Spring 2016
7	Public	1	Spring 2016
8	Public	1	Spring 2016
9	Public	3	Spring 2016
10	Public	1	Fall 2015
11	Public	3	Fall 2015
12	Public	1	Summer 2015
13	Private	1	Spring 2015
14	Public	4	Spring 2016

EPP	Type	Number of Syllabi	Semester
15	Public	3	Spring 2016
16	Public	5	Spring 2016
17	Public	3	Spring 2016
18	Public	3	Spring 2016
19	Private	1	Fall 2015
20	Public	1	Spring 2016
21	Public	1	Spring 2016
22	Public	1	Fall 2015
23	Public	1	Spring 2016
24	Public	4	Spring 2016
25	Public	1	Spring 2016
26	Public	1	Fall 2015
27	Private	1	Winter 2015
28	Public	3	Spring 2016

Table 2

Major Assignments and Assessments in Stand-Alone Children's Literature Courses

Major Assignments and Assessments	Frequency
Collaborative Class Interactions	
Literature Circles	11
Group tasks	10
Partner tasks	2
Reading/writing workshop	2
Peer Oral Communication	
Small group discussions	10
Whole group discussions	9
Peer feedback exercises	6
Learning Experiences beyond the Classroom	
Field experiences (e.g., read aloud to children, teach a lesson at a school)	10
Visit libraries and/or bookstores	4
Service learning projects	2
Interview a child	1
Community service (*extra credit)	1
Professional development (*extra credit)	1
Class Presentations & Performances	
Individual presentations	18
Partner and group presentations	13
Dramatic performances (e.g., Reader's Theater, poetry, "Jackdraw")	10
Read aloud to peer/small group/class	7
Choral/shared/poetry reading	3
Share originally created book	1

Technology/Digital Tasks	
Digital artifact (e.g. PowerPoint, Prezi, digital story, e-book, digital map)	10
Asynchronous online discussions	6
Review books on website	4
Compile and evaluate online resources (e.g. websites	2
Interact with non-print texts (e.g., videos, films, internet resources)	2
Post digital artifacts online (e.g., digital presentations, videos)	2
Synchronous online discussions	2
Blog participation	1
Inquiry-based webquest	1
Literature compilation in database software	1
Virtual lesson	1
Website creation	1
Traditional Assessments	
Quizzes	15
Mid-term exam	13
Tests/exams	9
Final exam	8
Practice Certification Test	1
Written & Visual Artifacts	
Written reflections (e.g., journal entries, reflective essays, teaching philosophy)	35
Literature compilations (e.g., annotated bibliographies, notecard file, notebook)	31
Instructional resources (i.e., extension activities, lesson plans, strategies)	28
Research tasks (e.g., author/illustrator study, literacy topic, awards, genre)	22
Analysis tasks (e.g., illustrations, poems, songs, texts)	11
Writing assignments (e.g., text summary responses, book reviews, essays)	9
Planning/prewriting (e.g., experience chart, movie script, storyboard, story map)	6
Evaluation tasks (e.g., texts, literature resources)	5
Written information for peers	5
Audio and video components (e.g., pictures, audio recordings, video recordings)	4
Original books/poems	4
Daily writing/class notes	3
Poetry illustrations	2
Parental communication (e.g., parent guide, inventory sheet, letter)	2
Visual presentations	2
Case study	1
Dear Reader letter	1
Self-evaluation rubric	1

Table 3. *Types of Specific Digital Preparation Efforts*

Teacher-Educator Directed Assignments	Preservice-Teacher Directed Assignments
Inquiry-based webquest	Document event with pictures
Virtual lesson EdPuzzle.com	Audio record an event
	Video record an event
	Compile online resources (e.g., websites)
	Create a PowerPoint
	Create a Prezi
	Make a book trailer using a movie maker application
	Create a digital story
	Literature compilation recorded in Excel spreadsheet
	Viewing of films, video clips, internet resources
	Create an e-book
	Create a digital literacy life map
	Create a digital presentation
	Include hyperlinks in digital presentation
	Use Weebly website platform to display research project
	Conduct reviews of web resources

Table 4. *Types of Specific Global Preparation Efforts*

Teacher-Educator Directed Assignments	Preservice-Teacher Directed Assignments
	Select and read multicultural texts
	Diversity tracking and reading log
	Read and track books from diverse cultures
	Service learning project
	Discussion item to gain different perspectives
	Multicultural literature circle
	Community service (*extra credit)
	Professional development (*extra credit

Table 5

Presence of Learning and Innovation Skills among Major Assignments and Assessments

Skill	Definition	Examples of Representations
Creativity	The ability to think of new ideas and exhibit innovation, originality, and inventiveness (Partnership for 21st Century Learning, 2015).	Brainstorming in planning/prewriting Creation of original works Designing presentations Developing new ideas with others Use of dramatic elements Use of symbolic elements
Collaboration	The ability to work with others effectively and civilly as an equal contributor (Partnership for 21st Century Learning, 2015).	Discussion groups Group and partner tasks Literature circles Reading/writing workshop
Communication	The ability to listen and express oneself effectively using oral, written, and nonverbal communication methods in diverse contexts and settings (Partnership for 21st Century Learning, 2015).	Digital productions Field experiences Group, individual, and partner presentations In-person and online discussions Peer feedback exercises Reading aloud to others Written productions
Critical Thinking	The ability to use reasoning and higher order thinking skills, such as reflection, analysis, and evaluation (Partnership for 21st Century Learning, 2015).	Analysis tasks Development of instructional resources Evaluation tasks Research tasks Written reflections

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Creating Teachers' Digital Toolboxes through Modeling: Lessons Learned from Technology Rich Teacher Education Classrooms

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Abstract

From sending texts around the world to following Snapchats from traveling celebrities, humans are more globally-connected than ever before. Interactions around the world that seemed impossible 20 years ago are now literally at our fingertips. Due to the increases in technology, education can no longer be seen as an entity unique to individual countries but rather, an integrated system of cross-cultural societies. With these shifts comes changes to education. Students learn through technology and teachers must adapt their instruction to best fit their students' needs. As a result, teacher education must become more focused and deliberate about preparing future and current teachers to utilize technology effectively. Linking digital literacies with modeling, we include two perspectives on integrating technology into teacher education. The first perspective is from a former middle school teacher who now instructs preservice teachers, while the second perspective is from a former K-12 teacher who now primarily instructs in-service teachers seeking graduate degrees or additional training. After reflecting on the two experiences, we summarize lessons learned and provide recommendations to other literacy teacher educators.

Key Words: technology integration, strategies for technology instruction, teacher education, sociocognitive theory, self-directed learning

Introduction

From sending texts around the world to following Snapchats from traveling celebrities, humans are more globally connected than ever before. Social media can be used for personal pursuits, but educators are also finding innovative ways to use technology to transcend the four walls of the classroom. For example, students in a classroom in Austin, Texas can use Skype to share experiences with children in Rio de Janiero, Brazil during the 2016 Summer Olympics. Students in Little Rock, Arkansas can post blogs about using different mathematical equations to solve problems, and students in Hong Kong, China can respond to those blogs with comments and feedback. Interactions that seemed impossible even 20 years ago are now endlessly possible.

Due to the increases in technology, education can no longer be seen as an entity unique to individual countries (Kihoza, Zlotnikova, Bada, & Kalegele, 2016). Instead, education is global. Not only are students ca-

pable of communicating easily across international boundaries, but they also have unprecedented access to information. In 2012, Wakefield and Smith described the changes technology has on teaching by stating that students should not only learn to locate, evaluate, and utilize information, but must also determine from where the information comes and from what culture. Clearly, this requires a skill-set, which goes beyond information literacy.

Therefore, technology has not only shaped how students learn but challenges teachers to improve how they teach. In summary, teachers must be:

1. competent with technologies,
2. comfortable with societies and cultures around the world, and
3. confident in teaching both technology-based and culturally-relevant lessons.

For teachers to accomplish these three goals, teacher educators must prioritize technology, and the many components that go with it. In this paper, we provide strategies and in-class instructional ideas for promoting these three goals in teacher education. To support the variety for improving teacher practice, we include perspectives from a teacher educator who primarily instructs preservice teachers, as well as a teacher educator who prepares in-service teachers seeking advanced degrees. After reflecting on our own experiences with technology, we summarize lessons learned and provide recommendations to other literacy teacher educators.

Digital Literacies in Teacher Education

Currently, teachers must perform a balancing act when it comes to their use of print-based and technology-rich resources. From one perspective, traditional print-format textbooks, children's books, and other resources are used as much as ever. Students relish the opportunity to hold a book and feel the pages as they turn. On the other hand, teachers are encouraged through legislation, national standards, parents, and other stakeholders to incorporate as much technology as possible, including digital texts. Digital texts, or digital literacies, are commonly thought to include multimedia-based literacies like videos, Internet webpages, electronic readers and mobile devices (Gainer & Lapp, 2010; Karchmer-Klein & Shinas, 2012).

However, the integration of digital literacies and traditional literacies in 21st-century classrooms influences an "immersion in meaningful design practice within a community of learners; overt instruction in the metalanguages of design; examination of the social, cultural, and historical meanings of designs and design elements...and, opportunities for students to put their designs to work in new settings," (Seigel, 2012, p. 673). In other words, teachers cannot simply use a picture book one day and a digital story the next and hope to be thought of as a balanced teacher. Digital literacies do not only apply to traditional modes of reading that are now digitalized, such as picture books which are -aloud through video sites such as YouTube. Instead, students must be able to read, inference and interpret learning material that is not necessarily word-based, but still requires the cognitive skills of reading like comprehension, syntheses and analysis.

Most classrooms today "continue to

privilege traditional texts, beliefs, and forms of reading and writing like textbooks, storybooks and printed materials" (Lapp, Moss, & Rowsell, 2012, p. 367). One reason for a continued emphasis on traditional literacies is the limited accessibility in many classrooms to digital literacies like online sources, ebooks, digital sources and the like (Lapp et al., 2012). Teachers struggle to meet the technology demands of the Common Core State Standards, students, and society (Leu et al., 2014; Shanahan, 2015).

Teachers are required to teach skills for processing multimodal literacies, which differ greatly from the processing skills required to understand traditional literacies (National Reading Panel, 2000). Multimodal literacies move beyond print-based media to include videos, gestures, graphics, and illustrations. When students use multimodal literacies, teachers are further challenged to deliver instruction that is rigorous in preparing students for advanced cognitive tasks. For teachers to successfully prepare students to interact with and comprehend new literacies, they must first be proficient in the use of these literacies. This proficiency allows teachers to transcend their knowledge to their students, creating a generation of learners who navigate the wealth of knowledge available, quite literally, at their fingertips.

Theoretical Framework for Using Technology

Education is multifaceted and complex, particularly in relation to teacher education and the programs that prepare future and current teachers. Teacher preparation programs are responsible for preparing qualified teachers and providing professional development to in-service teachers (Cochran-Smith, 2003). Therefore, we believe that it is valuable to focus on several theoretical constructs that support instructional practices at the teacher preparation level, which can be both distinctive and overlapping with K-12 pedagogical theories. First and foremost, teachers are not only educators but also learners. In discussing preservice and in-service teachers, we must consider theory emphasizing adult learners. Adult learners are fundamentally different than children and those differences must be considered separately from children. This difference is referred to as "andragogy", in contrast to "pedagogy", which refers to the science of helping children learn (Baumgartner, Lee, Birden, & Flowers, 2003; Knowles, 1980). Andragogy incorporates six assumptions that are the building blocks of adult education: (a) self-directed; (b) greater depth of experience; (c) developmental tasks; (d) focus on problem centered instead of subject centered; (e) motivation to learn is internal and includes the need to know why something is being learned (Baumgartner et al., 2003; Knowles, 1980, 1990; Merriam, Caffarella, & Baumgartner, 2007). Using andragogy as a baseline, we consider each of these six assumptions when preparing preservice and in-service teachers to use technology comfortably and effectively. In the following sections, we describe three theories that support technology integration in teacher education settings: 1) social-constructivist theory; 2) social cognitive theory; and 3) self-directed learning theory.

Social-Constructivist Theory in Teacher Education

Social-constructivist theory posits that experience facilitates learning (Vygotsky, 1978). From a Vygotskian lens, social constructivism emphasizes how knowledge is accumulated through social and cultural processes. It is a process of changing and modifying knowledge through collaboration with others (Wink & Putney, 2002). Learning is attained not only through isolated learning opportunities but also through collaborations and dialogue (Wilson, 2003). Therefore, learning is created by societies and influenced by culture, as each society values different experiences. When considering preservice and in-service teachers, social-constructivist theory indicates that teachers learn through collaborations and build knowledge from their experiences in the classroom. This can include clinical experiences of preservice teachers, or practicing teachers' own classroom experiences.

Social-constructivists acknowledge that abstract thinking is complex, and that people learn information more deeply when learning is concrete (Unrau & Alvermann, 2013). Often, technology falls into this category. While many individuals are comfortable using technology such as smartphones on a daily basis, they may become uncomfortable when trying to determine the most effective ways to monitor students' comprehension with technology. Moreover, if preservice or in-service teachers are only taught the theoretical or conceptual understandings of technology, they will not be able to confidently implement technology. When instructing with technology, teacher educators have a strong responsibility to provide opportunities to practice using the technology, model methods of incorporating the technology, and discuss alternative strategies related to using technology.

Preservice Teachers. Many teacher education programs accomplish the task of making teaching more concrete by allowing students to complete clinical experiences in the field (Darling-Hammond, 2010). Preservice teachers may conduct observations, provide small group instruction, or teach demonstration lessons in these experiences. Through these opportunities, preservice teachers match the theory of their teacher education program courses to the practice of being a teacher. In some cases, preservice teachers may not be able to work as closely in schools. A variety of obstacles including mandated limitations on course hours toward graduation, struggling public school systems, and insufficient resources may prevent preservice teachers from getting more than a few hours in schools, if any. In this manner, technology can be a powerful tool for teacher educators. Teacher educators can use videos to show demonstrations of teachers, which give preservice teachers much needed observations of real classrooms. Additionally, through features like FaceTime, Skype, and Google Hangouts, teacher educators can live view classrooms for preservice teachers. Here, preservice teachers can have conversations with teachers and students as lessons are being completed. These experiences capitalize on technology while allowing preservice teachers to learn through simulated experiences.

In-Service Teachers. As previously mentioned, in-service teachers have concrete

knowledge from their experiences in the field, but they crave the theoretical framework to improve their own teaching (Hodges, Feng, Kuo, & McTigue, 2016). Technology is a resource that can help make the abstract learning of theory and conceptual frameworks more meaningful to what teachers already do in their classrooms. Similar to preservice teachers, in-service teachers can use technology to record their classroom environments and teaching practice. They can then bring those videos to the teacher education setting. By observing their own teaching and the teaching of other practicing teachers, they can see concrete examples of what is being discussed in their professional development.

Social-Cognitive Theory in Teacher Education

Social-cognitive theory is most notably attributed to the work of Bandura (2001), who described the idea of shifting a person's view of his or her ability to complete a task. This concept, known as self-efficacy, reveals that when people believe they are capable of completing a task, they are more likely to succeed in the task (Bandura, 1997). Specifically, Bandura (2001) states that self-efficacy is built through several key components: practice, effective models, and challenging previously held beliefs. By building self-efficacy, social-cognitive theory has significance for preservice and in-service teachers (Merriam et al., 2007). Current research on self-efficacy shows that teachers who demonstrate a high sense of efficacy are more likely to diversify their instructional strategies, utilize multiple genres of text, and engage students in various grouping methods to improve student achievement (Tschannen-Moran & Johnson, 2011). Therefore, preservice teachers and practice teachers should be tasked with practicing instructional methods, observing effective models of teaching, and challenging their previously held beliefs about teaching. Additionally, these examples should include technology to ease the challenge of bringing technology into the classroom.

Preservice teachers. Again, technology serves an important purpose in increasing preservice teachers' self-efficacy for teaching. First, technology is often a skill in which preservice teachers have low self- efficacy and little support. By seeing effective models of teacher educators using technology, preservice teachers can boost their confidence and better understand how to integrate technology in their own classrooms. Through technology-rich teacher education programs, preservice teachers can learn about the most up-to-date technologies and features, while mastering how to problem-solve when the technology falters. Additionally, preservice teachers will be given the skills they need to continue learning about technology.

In-Service Teachers. Second, practice is key to learning any skill. When in-service teachers are given opportunities to use technology, they become more comfortable with it. For example, if a teacher has never used an interactive whiteboard, such as a Smart Board, before, he or she may feel uncomfortable even presenting a PowerPoint. If that teacher works in a district that only uses this technology in classrooms, he or she may not enjoy going to work. However, if teachers master using interactive whiteboards, they will be more confident when using the tech-

nology in their practice. Additionally, if preservice teachers and in-service teachers are taught the skills to learn new technology, technology will not be an overwhelming source of stress in teaching.

Self-Directed Learning Theory in Teacher Education

Self-directed learning is defined as a process of learning in which people plan, execute, and evaluate their own learning (Merriam et al., 2007). For preservice and in-service teachers, self-directed learning is a large component of their profession. Preservice teachers are guided by their teacher education program, but must often take initiative to learn additional skills they may have forgotten or not mastered in their K-12 education. When preservice teachers begin their teaching careers, they are expected to continuously remain updated on policy and legislative changes in education as well as current research-based practices. Much of this learning occurs outside of the formal work environment or professional development. Self- directed learning does not relieve the educator of teaching responsibilities, but places the responsibility of gathering, evaluating, and using information on the teacher (Jarvis, 2010). Through self-directed learning, the teachers at every stage of their career are using their autonomy to continue to develop and learn (Jackson, 2009; Jarvis, 2010).

Preservice teachers. Preservice teachers must acquire the skills to learn new technologies, and these skills are often learned through independent learning. Unfortunately, in a traditional, four-year teacher education program, some technologies may no longer be used when the candidates reach their own classrooms. Given that many teacher preparation programs are less than four years, it is more salient that preservice teachers are given the tools to learn about technology independently. Because technology changes rapidly, teacher education programs show more promise if they equip preservice teachers with the skills and resources to learn about new technologies successfully, rather than emphasizing individual pieces of technology. For example, Karchmer-Klein & Shinas (2013) outline several principles that support teachers' self-directed learning of new technologies. Focusing on these principles and developing preservice teachers' aptitude for exploring new technologies and locating assistance when they need it will help them develop confidence in using unfamiliar technology.

In-Service Teachers. In-service teachers face similar and unique challenges when learning about new technology independently. Depending on how long a teacher has been in the classroom, he or she may have faced numerous changes in technology, all requiring additional skills and knowledge. This can become exhausting while also developing countless skills that can help teachers support student learning. In-service teachers primarily hunger for motivation and concrete support when learning new technologies. In teacher education programs where practicing teachers are obtaining additional specializations or degrees, teacher educators can focus on practice that help teachers learn new instructional practices that are supported by technology. Additionally, teacher educators can provide ongoing professional devel-

opment that includes coaching and continued mentoring. In-service teachers thrive when they have resources available to them, particularly when they have questions or when technology does not work appropriately. In summary, while similar challenges face preservice and in-service teachers, teacher educators should alter their approaches to best help each group of teachers.

Bringing the Three Theories Together

By considering social-constructivist theory, socio-cognitive theory, and self-directed learning theory, teacher educators can consider preservice and in-service teachers as adult learners with unique needs. First and foremost, we argue that teacher educators should be mindful of how they are using technology in their own practice and what technologies they are exposing teachers to. Some technology may be outdated by the time teachers try using them, or some districts may not have the same resources to use technology. Therefore, it is more important that teachers at all levels of the profession know strategies and resources for learning about new technology. These skills will prove more valuable over a career and will keep teachers motivated and encouraged to utilize technology. Second, we acknowledge that teacher educators should be fearless in modeling technology in their classrooms. Additionally, teacher educators need to discuss why the technology works and how it promotes student learning. Preservice teachers need to see that technology is not used for technology's sake, but improves the learning experiences of children. In-service teachers need to be convinced that technology is worth the time and effort and helps students in a unique way. Finally, teacher educators need to provide preservice and in-service teachers with opportunities to practice [CS7] and learn about new technologies. These experiences will help all teachers better understand the benefits and limitations of different types of technology, while building their confidence in using technology for instructional purposes.

Two Perspectives on Modeling Technology Pedagogy in Teacher Education

Tracey is a former middle and high school English teacher, who now prepares preservice teachers for initial licensure. She teaches both traditional preservice teachers in a teacher preparation program, and master's students who have already completed their college degree and are now seeking first-time licensure. She teaches a variety of literacy courses that include content area literacy, research trends, and assessment practices. In contrast, Chyllis is a former K-12 teacher with more than 20 years in education. She taught early elementary and middle school grades as a classroom teacher and a Reading Specialist. She prepares teachers who are seeking additional licensure and advanced degrees. Many of her students have teaching experience and are continuing their education with a desire to learn the latest research-based methods. In the following sections, we detail some of our experiences with technology and how we utilize technology in teacher preparation.

Tracey's Perspective

My interest in technology grew when I taught in K-12 settings. Because I taught

students who were often one or more grade-levels behind, I needed to teach foundational literacy skills. For example, while teaching 7th-grade, many of my students' reading levels were still at the elementary level, meaning they struggled to read with fluency and decode multi-syllabic words. I found that by integrating technology, I could teach basic skills while appealing to my students' interests and keeping them engaged.

One such lesson included using iPads to teach spelling patterns. My goal was to teach the students spelling patterns and then transition that skill to decoding. As a secondary goal, I hoped the activity would build my students' self-efficacy with spelling to make them more confident writers. Using Inspiration software on the iPads, my students engaged in a word sort where they could drag and drop words into different columns. After this activity, as a class, we discussed how the words could be grouped and assigned each group a spelling rule. These rules were added to the students' individual resource folders for writing. I could continue these word sorts over time, building my students orthographic knowledge continually.

As I transitioned to higher education and began preparing future teachers, I realized the same motivations for using technology assisted my preservice teachers. Many of my students are traditional students, in the sense that they are continuing education directly from high school. Most of these preservice teachers can be described as "millennials" and represent a transitional period of life from adolescent to adult (McGlynn, 2005). One interesting perspective these students bring is that they are engaged by and enjoy technology, but because it is so engrained in their lives, they become frustrated if the technology-based instruction feels forced or unthoughtful. As a result, I am conscientious to use technology as effectively as I can and to continually direct my students to the purpose of using a specific device.

Flipping the Classroom. One method for incorporating technology into my teacher preparation classes has been through the pedagogy of the flipped classrooms (Hodges & Weber, 2015). For each class I teach, I prepare videos, audio-recorded PowerPoint presentations, and online modules for students to work through prior to class. Combining these materials with course readings, students receive a "first exposure" to the content before class begins and every class starts with specific questions and clarifications initiated by the students (Engin & Donanci, 2014; Hodges & Weber, 2015). These first exposures allow preservice teachers to self-monitor their progress through the content and allow instructors to differentiate the content to meet each student's individual needs. This approach also prevents the instructor from spending lengthy amounts of time lecturing.

When preservice teachers enter class, the first 15-20 minutes are spent clarifying key points, answering questions, and connecting new content to previously learned material. Then, much of class time is spent on in-class activities, which range from discussions to hands-on practice of the content. For example, when teaching about assessing readability, preservice teachers come to class having reviewed material to set their foundation of what readability is and how it can be meas-

ured. During class, I reiterate the key points. Then, preservice teachers use their own devices to assess the readability of children's picture books I supply in class. The preservice teachers determine the readability based on their own knowledge then use an online readability calculator to determine the actual readability from a variety of formulas. Finally, in groups, preservice teachers read the book and determine, based on interest, content, and structure, grade-level appropriateness. Through this activity, preservice teachers use technology to understand the usefulness and limitations of readability and begin to consider additional factors for choosing texts for students.

By using a flipped classroom approach, my preservice teachers get more hands-on practice and spend less time listening to lectures (Engin & Donanci, 2014). I am able to provide my students with various technologies through their at-home sessions, and preservice teachers' can self-regulate their own learning. Some preservice teachers view the materials once, while others view the materials numerous times prior to class. Preservice teachers also report that they enjoy having the materials to look back to later in the semester and even while they are in their first few years of teaching. Finally, the flipped classroom approach models student-centered teaching in which the students drive instruction and activities, while the teacher is a facilitator to their learning.

Bring Your Own Device – The Many Possibilities. The rule in my classroom is that preservice teachers are encouraged and expected to bring their own device to class (Johnson, 2012). Devices include Smartphones, tablets, computers, and mini mobile devices. During class, the preservice teachers are given both structured and unstructured tasks that require the devices. For example, I utilize various small group activities to model different pedagogy strategies. In these activities, at least one small group requires the use of a device to look up information and resources. In this structured task, preservice teachers see how their devices can be used to find and store information for teaching.

Additionally, during class, I often pose questions that require preservice teachers to do a quick online search. In this activity, preservice teachers see how they can integrate devices into their own classes. Devices provide students with freedom, give them an opportunity to use devices that they often use outside of class, and help them learn to facilitate their learning and dissecting of information.

Using Applications. Finally, in my class sessions, I turn to applications to help preservice teachers remain engaged and monitor their understanding of course content. A common struggle for teachers has consistently been eliciting full class participation in class-wide activities (White, 2011). Devices can be used to increase participation and help the teacher monitor individual students' understanding of the material. This monitoring of student comprehension and active participation by students is an educational trend that began early in education (Dewey, 1938) and has continued into the modern era (White, 2011). While eliciting participation from every preservice teacher, every day is a challenge; I find that three applications help keep my preservice teachers motivated, engaged,

and interested in course content: *DoodleBuddy, eClicker,* and *NearPod.*

DoodleBuddy is a simple application that allows the user to "doodle" or draw as they like on a white, or other color should the user choose, screen. This application can be used as an interactive whiteboard, free to manipulate at the fingertips of each preservice teachers. When the I ask a comprehension question, preservice teachers can use their finger to write the answer on the white board then show me their answers. This is a quick, easy and mess free may to ensure that preservice teachers are (a) paying attention to the lesson, (b) making logical connections between new and old material and (c) are active members of the instruction (Turel & Johnson, 2012).

Too often, preservice teachers act as sponges absorbing information and regurgitating that same information later. This simple strategy of using white boards ensures that preservice teachers are not acting as sponges but rather living organisms absorbing the information and processing it for future use. Additionally, for teachers who are short on time, resources or supplies, the interactive whiteboards are handy. It takes a great deal of time and resources to create flipbooks or maintain dry erase markers; it takes relatively little time to tell students to open their device and click on *DoodleBuddy*. The white board allows for student choice and creativity. Preservice teachers can write, draw, create graphic organizers, type or embed pictures onto their whiteboard, allowing them freedom, creativity and motivation to participate in class. Finally, this same strategy can be used in K-12 classrooms, so it once again models an effective use of technology for preservice teachers.

For teachers that prefer multiple choice questions or at times when teachers choose to practice these types of questions, there is *eClicker*. This application serves as an electronic clicker for students to respond to multiple-choice questions. I create a bank of questions and then choose the ones I want to use in a particular class session. I connect my device to the *eClicker* Host application using a wireless Internet server, and the preservice teachers then connect to the same wireless Internet source and type in the address of my *eClicker* Host. Once this is completed, I can ask students questions throughout the lesson and have the preservice teachers select a multiple-choice answer on their device. The data is sent to the host and I can quickly see what choice students chose to determine understanding. I can also monitor how many students are actively participating to ensure active cognitive engagement is occurring in the classroom. Teachers can adjust their teaching and decide whether to move forward with instruction, reteach or scaffold the lesson for increased comprehension using clicker technology (Anderson, Healy, Kole & Bourne, 2011).

Finally, a device I enjoy using to help students work through course content is *NearPod*. *NearPod* serves as an interactive presentation format, much like PowerPoint. As the teacher, I combine PowerPoint slides, Internet links, and videos to create a presentation. This presentation can be connected to by preservice teachers through a code, or I can assign the presentation as homework. For homework use, students work through the presentation, which can also include short

answer responses, quizzes, or polls. Each preservice teachers' information is compiled into a report and sent to the teacher educator. This is a great feature for integrating into a flipped classroom.

For in-class use, I allow students to connect their own devices to my link. This makes the presentation live. As I go through slides in lecture, the preservice teachers' slides automatically move as well. If a preservice teacher leaves the presentation (closes out to go to another application, for example), I am notified. This keeps preservice teachers engaged and holds them accountable for being present in class. As we come to slides that include an activity, short-answer response, quiz, or poll, preservice teachers answer individually, and my device anonymously shows me responses. I can then share the entire classes' responses or I can self-select a certain students' response to share. Because it is anonymous, I am still in compliance with the Family Educational Rights and Privacy Act (FERPA). At the end of the session, *NearPod* emails me a report of each student's responses and time-in the presentation activity. This is an efficient way to document students' progress, understanding, and class participation.

Chyllis's Perspective

As an educator for nearly 20 years, I have experienced much change with pedagogy, andragogy, and classroom instructional practices. When I began my teaching career in California in 1996, I had two classroom computers with dial up Internet. My school had a computer lab with games for the students to "play" for 30-minutes per week, but the technology integrated into my own classroom instruction with limited and minimal to say the least. We did not stream videos or have interactive Smart Boards, our standard tube television would suffice, and the wall of whiteboards and overhead projector was our form of technology. At this early stage of technology integration and technology preparation for teachers, my technology preparation was inadequate. In my licensure program, I had one technology course entitled: *Educational Application of Computers.* This introductory course provided me with opportunities to practice working in Excel files, making PowerPoint slides, coloring, attaching Clipart, and writing in a Microsoft program. Such programs are now more commonplace and lack direct instruction; rather it is an expectation that students and teachers are familiar with this basic form of technology.

Now as a teacher educator I understand the importance of working "with" my students to learn and gain new knowledge and skills pertaining to integrating technology as a resource for pedagogical practices. I also reiterate the importance of technology as a tool to support student learning and assessment, but not as a replacement for the pedagogy.

First, I acknowledge that preservice and in-service teachers enter education programs with vast and differed experiences, this includes their experiences with technology, and thus I strive to include some form of technology in each class session. As an teacher educator for in-service teachers, my education students range from early post baccalaureate (just recently graduated with their undergraduate degree); students with Teach for

America (TFA) who have recently relocated to the area to start their first teaching assignment and often have minimal to no previous teaching experience; students who are working toward their alternative route to licensure (ARL) typically with a degree in another field and they are in their first or second year of teaching; current in-service teachers working towards their master's in education; and, doctoral education students. Although these students are in different programs, most of them are classified as in-service teachers—this is because they are already teaching and have their own classroom. Additionally, this range of students also span the age gap, from "millennials" who have recently turned 21 to the "non-traditional" students who are returning to school, or who have retired from their first or second career and are continuing their education. I believe these details are pertinent because just as I teach my preservice teachers and teachers, I need to know my students. It is important to know where they come from and what experiences they have. This information helps to guide my instruction, but also helps me to know how much scaffolding is needed. For this reason, I strive to weave the course content and application with technology and particularly with new and digital literacies.

Using Technology as a Tool to Participate and Instruct. One way for incorporating technology into my education courses is by supplementing the course through an online platform, such as Edmodo, "Edmodo is where education meets innovation" (Edmodo.com, 2016, para. 1). Edmodo is a social learning network and educational technology that offers an online platform for teachers and educators to provide instruction and communication. For some, it is described as the educational Facebook that provides a learning environment beyond the face-to-face instruction. It is acknowledged that there are many other online platforms, such as eLearning, Blackboard, and Webcampus, but these educational technology companies are often purchased and financially supported by higher education institutions. Whereas, Edmodo is a free service for teachers and their students to communicate, and for the K-12 classroom it also has an option for parents. Other advantages to Edmodo are the tools, which include: discussion boards, assignments, quizzes, and polls.

This form of technology is utilized in my instruction to help the teachers not only organize their courses, but also provide them with an opportunity to learn how to implement technology into their own instruction. By using Edmodo, the teachers may also join other Edmodo interest topics (e.g., English language arts, mathematics, science), join their school or district, and communicate with other teachers for support and lessons.

Another View for Classroom Instruction. In preparation of teachers I want my students to have as many takeaways as possible. For example, in-service teachers must complete assignments for their own course work, but this work should be tangible for their classroom teaching. Therefore, I often encourage my in-service teachers to utilize webpages as a source for collecting, presenting, and managing their work. This can be achieved by using free webpages or websites such as, *Google Sites, Squarespace, Wix, Weebly,* and *Wordpress* to name a few. These websites are cloud-based and can be accessed

from almost any device. Additionally, these webpages are platforms that provide templates to help teachers to organize their own course work, as well as their class. These spaces provide the developer (i.e., teacher) with a link that may be shared with others. For example, in their college courses the link can be shared with the instructor or classmates, students and parents may also be granted access. The advantage of developing a webpage is that the teacher has ownership of it, but it also a place to manage their work and classroom (e.g., student work, home work, assignments, projects, etc.).

Using Applications. Similar to Tracey, I too use applications (apps) to help in-service teachers supporting their teaching, manage their instruction, and assess their students. Applications provide teachers with tools to support their instruction, they can share apply various applications and devices through their teacher preparation courses and in turn put them into practice into their own instruction. Three applications that are utilized in my courses to support my in-service teachers include: *Kahoot!, Seesaw,* and *Plickers*.

Kahoot! is a free application that "is a game-based learning platform, allowing both educators and students to research, create, collaborate and share knowledge" (2016, para. 26) . *Kahoot!* is usually displayed on a white board or used in conjunction with Smart Boards and are designed as a learning tool to be used socially, as a whole class, with small groups, or individually. The application allows the user to develop quizzes, discussions, or surveys. An excellent way to formally assess students, this tool can be used by teachers for their students and classrooms, but is also an excellent tool for adult learners. The instant feedback and discussions can be used as mini-lessons for content clarity and allows instructors to check for understanding, or evaluate who actually completed the required reading prior to class. Kahoot! also has a database of quizzes on assorted topics that may be accessed and allows the user to input their own content. Typically used an entrance ticket (i.e., quiz) in my courses, the in-service teachers are engaged in both the learning and assessment process.

Additionally, teachers are required to evaluate and assess their students on a regular basis, an application for formative assessments and portfolios is *Seesaw*. The Seesaw application is designed to "[empower] students of any age to independently document what they are learning to school" (Seesaw, n.d., para.1). A K-12 application for all content areas, Seesaw provides students with opportunities to save and document their learning. A process that has traditionally been the responsibility of the teacher is now a collaborative learning process. Students take ownership of the learning and their individual digital portfolios are stored on the Seesaw application, which allows teachers can monitor student progress and evaluate the end products. The portfolios can also be used as a tool and example of student work for parent teacher conferences, and help to keep parents actively engaged in their child's learning.

Third, *Plickers* is a low-technology application tool that allows teachers to use technology in their classroom instruction with real time feedback and data on student learning. Plickers is another assessment tool that can be used in a variety of different ways: pre

-assessment, exit tickets, warm-ups, on-going check for understanding. It is best used with a device with a larger screen when doing it whole group or may be best utilized in a small group setting. Plickers allow teachers to engage the students in the process without the need for individual student devices (e.g., clickers, phones, tablets). To effectively implement this application, teachers need to acquire/print out paper clickers, once each student has their assigned paper clicker the teacher can scan the paper clickers, this process requires that the teacher use a device, such as a phone or iPad to scan the student responses. The responses are instantly tallied and are automatically saved.

Each of these applications have been used for instruction, evaluation, and progress monitoring of my in-service teachers; additionally, teachers are engaged in the process and understand the need for technology in their own instruction. The in-service teachers are encouraged to apply their learning in their own instruction. Through using applications regularly in the course, I provide opportunities to practice using unfamiliar technology. In this way, teachers become comfortable and confident with the technologies. Hopefully, this practice encourages them to use the technology in their K-12 classrooms. Finally, I am an additional support for teachers as they experiment with technology. For example, if a teacher wants to use Kahoot in their classrooms, they can test it out and ask me questions prior to implementation. This provides a safe space for teachers to gain self-efficacy with technology and different instructional practices.

What We Have Learned About Technology in Teacher Education

Through our unique experiences in using technology with both preservice and in-service teachers, we have learned several lessons worth sharing for other teacher educators who are committed to utilizing technology effectively. We can summarize our lessons into four big ideas.

Lesson #1 - Novelty Creates Engagement

Teacher appreciate novelty and continually learning about new technologies. Each time we integrate a new technology into the classroom, we always expect some resistance but experience very little. The students are engaged and interested in the content because they enjoy the technology. From this viewpoint, novelty can be a way to re-invigorate teaching.

From the future teacher perspective, preservice teachers are hungry for tools and methods for managing a classroom and eliciting interest in their students. As such, they want to learn about as many devices as they can. Preservice teachers are ready to accept the technology they see modeled because they can see the potential for how it will improve their own teaching once they have a classroom. Teacher educators want to give preservice teachers as many resources as possible so that they are prepared when they have their own students.

From the in-service teacher perspective, many are facing challenges in the classroom. Some many feel tired, unmotivated, or worried about student achievement. Again, as a result, they are excited about methods that

increase students' attention and re-invigorate their teaching. New technologies and resources can be a tool to help organize their teaching, while also tracking and managing student work and progress. Additionally, when technologies are modeled effectively, they become a resource that teacher can take into their classroom and use immediately. For example, many of the applications we describe in our perspectives can be used within a few minutes and take little time to master. In-service teachers, therefore, can go to their classrooms directly after class and make small improvements that will have big gains.

Lesson #2 – Consistency is the Only Path to Implementation

While novelty can build enthusiasm, and grab teachers' attention, it is not sufficient for mastery of technology content. Technology should be approached as any other content. Practice will lead to mastery, and practice cannot occur if there is zero consistency. For this reason, teacher educators should pick a few technologies and hone those well. For example, in Tracey's class, she utilizes a flipped classroom pedagogy and uses certain applications on preservice teachers' own devices. By only focusing on a few technologies and teaching them consistently, she keeps novelty but preservice teachers have the opportunity to master the technologies.

While in Chyllis's instruction, the in-service teachers are not only the students they are also a learner. The course content and the technology content are integrated to support their learning, but is also applicable to their own classes and students. They can make the connection from theory to practice in real time, while also communicating with their peers on integration, application, content, and lessons.

Lesson #3 – Technology Integration Takes Time in the Beginning, but Yields a High Pay-off

When a teacher educator decides to use technology in their classroom, more than just through presenting content, it is a big time investment. The teacher educator must research technologies and spend time working with the technology to master it. Additionally, traditional methods of teaching and delivering content do not work as effectively with technology, so the teacher educator must adjust their pedagogical approach. These changes take a great deal of time and effort. Additionally, similar to K-12 settings, using technology may be difficult initially. Some class time may be lost through technologies not working, adjusting preservice teachers to the new learning methods, and lesson that do not work as planned.

However, despite some of these limitations, the reality is that they are minimal. One class day may be affected by technology not working, but if the teacher educator has mastered the technology, this will not occur often. Instead, there will be a big pay-off in preservice teachers' interest level, motivation, and skill as teachers. Additionally, this is the only way preservice teachers can truly build their own skills as teachers using technology.

Lesson #4 – The Learning Never Ends

Most importantly, because technology is constantly changing, the learning never ends. A teacher educator cannot be complacent and believe that they have learned all there is to know about technology. Instead, teacher educators must have a growth mindset. That is, they must believe that they can continuously learn about and utilize new technologies. Through our experiences, we are constantly working to learn about new technologies. Even as we write this manuscript, new technologies are being created and previously used technologies are becoming outdated. For these reasons, teacher educators must make conscious efforts to never cease learning about innovations. Several ways we have maintained our enthusiasm for technology is through online blogs and journals, which often report on ways to use technology. We have also attended professional workshops and conferences devoted to technology. Most importantly, we are continually asking our preservice teachers about technologies they use, for pleasure and teaching. By making continual learning a priority, we ensure our teaching helps our teachers and future teachers be as prepared as possible to use technology effectively.

Technology is ever-changing and what works today may not work as effectively tomorrow. For that reason, it is critical that teacher educators continually learn about new technologies and work to integrate them into their classrooms. Not only will this maintain interest and engagement from preservice teachers, but it will model effective practices they can utilize in their K-12 classes in the future.

Recommendations to Teacher Educators

1. **Explore new technologies.** We recommend budgeting some time often to explore new technologies and enjoy them. Spend an hour each week browsing new applications and playing with them. Not only is this a fun stress-relief, it can bring about new creativity and ideas for class, even if the teacher educator does not use the application. To get teacher educators started, we provide a table of resources we have used in our literacy courses (see Table 1).
2. **Ask the tech-gurus you know.** Some campuses have a technology department that is focused on bringing the newest technologies to faculty, but often they are used primarily to fix crashed hard-drives. Make an appointment to meet with an instructional technology specialist and ask what they recommend. By scheduling the time, there is a focus of the meeting. These specialists can be a great resource for learning new technologies and getting mentorship. Additionally, many will come support you in your classroom. If the university does not have a technology specialist, ask friends and family who know about technology or find someone online who can help. There are resources everywhere!
3. **Provide opportunities for teachers to share technologies.** This can be a class assignment or a simple sharing time. Ask teachers what technologies they know of, what they use, and allow them time to share with the class. This can be a great way to

build a list of resources and gives preservice teachers the initiative and ownership over their technology experiences.

4. **Do not be afraid of technology working.** In our experiences, we continuously hear teacher educators hesitant to use technology because so many things could go wrong. While that may be true to an extent, often these hiccups are not as severe as they seem. Additionally, most can be solved quickly and easily. If the teacher educator is fearful of technology, likely preservice teachers will be too. If they see a model of a teacher educator who embraces technology and handles malfunctions effectively, they are more likely to view technology favorably.
5. **Students are great resources.** Often the instruction targets the students' learning, but when it comes to technology do not be hesitate to ask students about their experiences or preferences for learning and integrating technology into your class instruction. Especially with preservice teachers, many are using technology in their daily lives and can easily describe how they view technology. As an expert in teaching, the teacher educator can take these suggestions for technology and can apply them to education.
6. **Research the "Internet".** Due to increased Internet usage in schools, web site evaluation lessons should be implemented as a precursor to allowing students to conduct research in class or on the Web. Teachers need to provide instruction to their students about the reliability and validity of what they see and read on the Internet. One such lesson that may be utilized is the evaluation of the Pacific Northwest tree octopus (*Octopus paxarbolis;* Zapato, 2015) website. The Pacific Northwest Tree Octopus website (http://zapatopi.net/treeoctopus/) is thorough, provides precise details, and supports fact with evidence and research. This model lesson can teach students about authentication, which they can apply to independent research and future authentication lessons.

Conclusion

The world is becoming more global and is shifting greatly from year to year. Without a concentrated, dedicated effort to technology, teacher education will not parallel the demands of the workforce. Technology can be a scary part of education – both at the K-12 and teacher preparation levels. However, we have learned that technology, like anything else, can be learned and enjoyed through practice and dedicated effort. We hope our perspectives, strategies, and lessons learned inspire other teacher educators to embrace technology as an integrated part of teacher preparation. Through effective modeling, experimentation, and continual learning, teacher education can make great gains in preparing K-12 students for future jobs that may not exist today.

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Table 1. *Teacher Tools: Applications and Internet Resources*

Application/Resource	Link and Purpose
Camtasia	• Provides free trials and membership packages. Camtasia allows the user to record video of your computer screen. A program that is often used to develop lessons and tutorials. https://www.techsmith.com/camtasia.html
DoodleBuddy	• Interactive white board that students can write on with their finger to provide answers in class
eClicker	• Connects the instructor's device to students to allow for quick assessment and in-class engagement https://eclicker.desk.com/
Edcite	• Free platform for teachers and districts • Empowers teachers and engaging students with an online format for building, sending and reviewing assignments. https://www.edcite.com/
Edmodo	• Free web-based platform for educators that helps to support class structures, discussions, quizzes, assignments, etc. https://www.edmodo.com/
Educreations	• Community for teachers and students to use their iPad or web browser as an interactive whiteboard • Users can animate, create and narrate videos and share with other community members) • Available online or on iTunes: https://www.educreations.com/ https://itunes.apple.com/app/educreations-interactive-whiteboard/id478617061?ls=1&mt=8

Engage NY	• Webpage developed and maintained by New York State Education Department that provides educators with real-time tools and resources for educators • Open access and contains curriculum materials for grades Pre-K-12 in both English language arts and mathematics https://www.engageny.org/
ESGI	• An assessment software with 200+ preloaded assessments available and additional support (e.g., charts, graphs, reports, personalized parent letters, scheduling, and class management tool) https://www.esgisoftware.com/
Google sites	• Personal websites that are free or have a minimal fee that allows the owner to create and share a website https://www.google.com/sites/help/intl/en_GB/overview.html
iMovie/	• Video editing software that allows the user to create, develop and organizer video clips or films (for Mac computers, Apple products, and iTunes) http://www.apple.com/mac/imovie/ https://itunes.apple.com/us/app/imovie/id377298193?mt=8 http://www.apple.com/ios/imovie/
Inspiration software	• Visual learning tool that students and teachers use to develop and organize ideas into a graphic or visual representation http://www.inspiration.com/
iPads, iPhones, SmartPhones, laptops	• Personal devices that can be used by both the teacher and students for instruction, assessments, and other forms of communication.

Kahn Academy	• Ready-made videos covering course content and allows teachers to create online activities for students to complete • Teachers can track students' progress and assign them increasingly challenging tasks, based on their individual results https://www.khanacademy.org/
Kahoots!	• Application that is a free game-based learning platform that allows users to develop or use previously designed assessments, games, or activities https://getkahoot.com/
Nearpod	• Interactive tool that is free for teachers and includes research-based, interactive, ready to use lessons for grades K-12 https://nearpod.com/
Plickers	• A real-time tool for formative assessment data with minimal to no need for individual devices. https://plickers.com/
Prezi	• Presentation software that uses visual graphics, motion, to expand your presentation, lesson, or ideas https://prezi.com/
Seesaw	• K-12 application for all content areas, Seesaw provides students with opportunities to save and document their learning into individual portfolios http://web.seesaw.me

ShowMe	• ShowMe is an online learning community to create and share lessons via iPad http://www.showme.com/
Smart Boards or Digital/ Interactive Whiteboards	• Interactive whiteboard technology controlled by touch detection
Tabletop Twitter	• Tabletop Twitter is a strategy that can be applied to nearly every subject and may provide an opportunity to expose students to a variety of sources (such as artwork, story passages, articles, primary sources, poetry, etc.) • Use this activity to assess prior knowledge before teaching a unit or to build on current topics and allow student to delve further into the material • Tabletop twitter may be used as a part of a centers rotation or the whole class may be divided into smaller discussion groups.
Wix	• Wix allows users to custom design their own page and content, including text and videos • Good for classroom webpages, class portfolios, homework, and student and parent communication. http://www.wix.com/
Weebly	• Weebly allows the user to build a site or blog https://www.weebly.com/

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Understanding the Video Game Experience through Reader Response Theory

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Abstract

The world of literacy has expanded alongside technology, and new literacies are being used as an alternative or an addition to traditional text. By including video gaming as literacy, the connection can be made between students' multimodal world outside of school with the world of literacy they encounter in school. As a way to look at the gaming experience, a case study of 15 participants examined three mainstream video games using Louise Rosenblatt's reader response theory. In this qualitative study, interview transcripts about the gaming experience are coded for themes relating to reader response theory. The literature does not currently contain substantial research regarding how the gaming experience and reading experience are similar, so this study begins to add to the present literature by demonstrating that at least for these games the presence of the components of the theory can be evaluated in much the same way as the reading experience.

Keywords: Reader response, video games, new literacies, case study, Louise Rosenblatt

The New London Group (1996) recognized that a change of paradigm was occurring for literacy and the connected pedagogy. This change included recognition of the "multifarious cultures that interrelate and the plurality of texts that circulate" as well as the text forms connected to multimedia technologies (New London Group, 1996, p. 62). The defining term, resulting from the full year of discussions by this group of experts within the field of literacy and learning, was "multiliteracies," meaning the additional aspects of traditional literacy pedagogy. "Mere literacy" was a term coined for language-only communication contrasting with multiliteracies since it "focuses on modes of representation much broader than language alone" (p. 63).

As literacy transforms and includes digital literacies, educators must form an understanding about how learning relates to these new tools. Additionally, we can now begin to evaluate how aspects of the act of reading are morphing. One particular tool that is reshaping the world of literacy is video games. As commercial video games become more of a integral part of our culture, the role of the gamer must be examined in relationship to the role of the reader. By showing the parallel nature of these two roles, the changes the New London Group forecasted in literacy will begin to be part of the mainstay of defining literacy.

Review of Literature

The role of the reader is to be a producer of meaning instead of simply a consumer of the meaning of the text. Reader response theorists believe the reader is integral to the reading experience (Lye, 1996). The text is not single in meaning; the text and the reader combined create meaning and a transaction that is unique to that reading. Because of this connection, the experience is a vital aspect of Louise Rosenblatt's reader response theory.

Transactional Experience

Louise Rosenblatt established the transactional theory, which moves literacy instruction away from prescribed answers that the teacher or experts have established into more of an experience with literature. In order for the piece to be literary, the work must be experienced; the text must then relate to the reader to produce an experience (Rosenblatt, 2005b). Transactional theory explores the transaction of the reader and the text while making meaning. The transaction produces meaning, and its manifestation is the response of the reader to the text (Rosenblatt, 1978).

The transaction is what happens between the reader and the text during the reading event. The creativity of the reader affects this transaction as well as the personal experience of the reader. Because of this personal aspect, the context greatly influences the transaction; a reader can have a very different experience with the text at different times in life due to changes in circumstances (Rosenblatt, 1995). But the two stances do not have to exist totally void of one another. Instead, the stances are located on a continuum with efferent and aesthetic at each polar end. The interaction that occurs between the two ends of the continuum has been demonstrated in the literature (Irwin & Mitchell, 1983).

Rosenblatt (1995) contends that students are functioning on two separate levels of thought in the English classroom. On one level, students are learning ideas about literature that are established by and accepted by educators; the other level is where students are reacting to the literature from a personal standpoint. By not having a personal connection, students will simply be learning content about literature and "only a vague, feeble, or negative response will occur" (p. 56). A connection to past experience must happen; otherwise, the reader will not be prepared to fully absorb and digest the text. She explains that the reader must have the connection or "the work will not come alive for him, or rather, he will not be prepared to bring it to life" (p. 77).

Historically the reader has been left out of the reading equation, or at the very least, the reader is sanctioned to a backseat position. To contrast this passive position of the reader, Rosenblatt suggests the reader be moved into a much more active and visible role in reader response. In order for a reader to have a transaction with the text, s/he must be motivated – motivated to read – motivated to connect past experiences – motivated to bring in personality qualities. Without that level of motivation, the reader would not begin to engage, and engagement is the key to the transaction occurring within the reader.

Reader Response Connection to Gaming

But as the language arts classroom evolves and technology broadens the realm of

literacy, theory must adapt as well. As with all forms of 'serious play,' from aesthetic experiences to hobbies to even scholarship itself, novel reading complicates and enriches the notion of 'fun'" (Alberti, 2008, p. 263). As this inclusion of new literacies occurs, engagement with learning can be strengthened by encouraging students' connection and transaction with new literacies. That encouragement is crucial for teachers to establish because efferent and aesthetic reading are necessary: "knowing how to use a text in the right place and time is as important as knowing how to 'decode' it" (Gee, 2010, p.18).

Connecting reader response theory and gaming has been evident in research about creating and playing games (Curtner-Smith, 1996; Gaudart, 1999). Typically, these studies focus on more efferent stances related to learning, such as recalling specifics, memory, and noticing differences in text, and the text is seen as the center of learning. Even though there are not numerous studies about gaming and reader response, the literature regarding such a connection is starting to be established.

Developing Literacy Through Gaming

Teachers may be reluctant to use gaming in the classroom simply because of its connection to entertainment, and the gaming industry may not be fully marketing to schools because of their connection to "learning," which could be translated into "boring." Most research involves study of simplistic games that are not equal to commercial video games (Cordova & Lepper, 1996); the majority of studies on gaming before Squire (2004) did not even include commercial games. Complexity and difficulty also play a part in how integral gaming can be in school learning. Typically games used by teachers have not been very complex so that students could learn the games quickly and easily in short periods of time. Most quality video games can take 30-100 hours of play in order to win (Gee, 2007).

Just because gaming is in a medium different from that to which teachers are accustomed does not mean that the value decreases: "Young people's literacy activities in the semiotic domain of gaming may prepare them to operate, communicate, and exchange information effectively in a world that is increasingly digital and transnational – and in ways that their formal school does not" (Selfe, Mareck, & Gardiner, 2007, p. 30). Thus the world of literacy is changing, and with such a change, literacy is now inclusive of video game play. Adding gaming to the language arts classroom and the world of literacy means that games must be evaluated in all their complex splendor, meaning the visual and semiotic and interactive nature of the game must be considered wholly as text instead of looking at only one part of the game as text. Even though a game may be a narrative and contain characters much like print text, gaming as its own structure works with additional aspects such as images and interactive play. Thus, the way we view traditional print text as literacy cannot be the complete lens through which we view this new area of literacy.

Visual Literacy

In order to explore the ways gaming can have merit as literacy, the connection between visual literacy and gaming must be established. A limited amount of research has

explored the value of the connection of visual image and text. Visual literacy does not replace traditional literacy; instead "the use of images supplements and complements the linguistic composition" (Zoss, 2009, p. 187). The New London Group (1996) has highlighted the connection of the visual images in relationship to written words as significant for literacy teaching and learning. Traditionally, text has been defined as "a passage of print or a slice of speech, or an image" (Lankshear, 1997, p. 45). But text has now been broadened to include much more; students are now involved in reading/viewing from a multimodal perspective, which calls for teachers to include the new literacies in the classroom literacy experience (Bearne, 2005). As visual literacy makes its way into the defining structure of literacy, the research must include it also. Just as the decoding of text has always been an important component of literacy, the decoding of graphics, charts, maps and other aspects is now considered significant. Consequently, researchers have been giving attention to structures for visual decoding (Leu, Kinzer, Coiro, & Cammack, 2004).

Aristotle believed images are connected to knowledge. In order for a reader to experience the text, s/he must have some level of knowledge as a basis for the experience (Thompson, 1988). Some educators fear that visual media detract from text. However, teachers have observed struggling writers constructing text with much more vivid imagination when a visual is included in the assignment. Thompson (1988) finds in her own experience with low-performing high school writers that these students wrote more fluently about a picture than a traditional prompt. The students needed an image to assist them in finding "their own internal flow of images as material to write about" (p. 48). Colby and Colby (2008) suggest an English course focusing on the game World of Warcraft (WoW) where students would write and conduct research based on the game. The students would write documents that they determined to be important and create text that was meaningful within a community of gamers.

The visual arts have been studied in connection with struggling readers. Students who discussed the meaning of visuals accompanying text found this connection gave the reader/viewer a stronger ability to enter and participate in the world of the text (Zoss, 2009). The connection provided a stronger understanding of the text. Beach and O'Brien (2009) studied 7th and 8th grade students participation in a Literacy Lab, a media-based program for students who were at risk of failing in reading. One of the important skills taught to these students was the ability to work with multimedia tools in connection with their reading and writing assignments. Students are able to critically examine text by juxtaposing images. Other assignments had students examining the meaning of images in relation to text; images were found to be important to the development of their reading skills.

Most classrooms do not connect image and language, yet that type of connection is how most students function outside of school and will need to function as adults in a very rich multimedia world. A 2006 study found that college students spent an average of 11 hours per day using some type of media

or digital communication, which meant that they were engaged in communication combining image and language (Beach & O'Brien, 2009). Modern literacy should embrace the visual and language connection that is now normal and commonplace in the structure of society's communication.

The incorporation of both image and text does not confuse or bombard the reader/viewer. Instead that combination reflects the modern student's way of life. Neural scientists suggest brains are changing to increase efficiency in accommodating the increase in multi-visual images with text (Beach & O'Brien, 2009). Students are easily able to multi-task between texting, listening to MP3 files, and skimming a website; "students are accustomed to communicating through the combination of print with visual, sound, and tactile texts" (p. 778). Adding another sign system to language can expand the dimension of resources for the student and teacher; images can be valued as much as text (Zoss, 2009).

Finding Meaning in Gaming through Semiotics

Video games are a family of semiotic domains comprised of various genres. Just as in literature, video games have genres (role-playing, adventure, etc…) (Myers, 2003). Apperley (2006) defines the genre for video games as games that share similarities in narrative and visual elements as well as in the area of interactivity. The way the action is perceived and performed plays an important role in determining genre. Within genres, the particular types of games employ a semiotic system. The relationship between the signified and signifier is significant in the meaning making process, and the various genres of video games create that relationship differently. In action games, the signified is actually within the game, but simulation games place the signified elsewhere (Myers, 2003). For example, flight simulation games make reference to other semiotic systems instead of establishing a unique system within the game. Role-playing games emphasize symbol transformations with the signification process as the same in the game as in social interactions. Since this genre involves multiple players, contextual significations are required. Action games use denotative signs to create a common context for players. Many oppositional relationships exist in this genre, and meaning can be immediately understood (Myers, 2003).

Codes for social semiotics include the cultural reference as a code within itself. Danesi (1994) defines culture as a macro-code: "consisting of the numerous codes which a group of individuals habitually use to interpret reality" (p. 18). Ranker (2006) found that specific content and codes were used within various genres of video games. The participant, Adrian, talked about his drawings with Ranker to share video game knowledge but also for Adrian "to put his meaning into words so that he might go on to write about it" (p. 23). The meaning was derived because Adrian was able to use codes with which he was familiar as the basis for the discussion. The codes being used in the particular game were context-based for that game; Adrian derived meaning from his video game experience in the way Rosenblatt discusses deriving meaning through particular times under particular circumstances. For

example, in one conference, Adrian made reference to the term "warp," which Ranker must explain as a function in the game that allows a character to be moved to another location in the game. Meaning for this term is different for a player who has contextual knowledge within the culture of the game.

Ranker (2006) discovered that video games include a narrative component. Because of this, Ranker could relate aspects of traditional literature to gaming; Ranker asked Adrian to discuss characterization within his video game, and Adrian used drawings to begin this conversation. Only Adrian (or a player steeped in the culture of the game) could read those drawings appropriately because specific signs and codes were used that depended on the cultural connection. By using the participant's specialized knowledge about a particular video game, Ranker developed suggestions for use by the student in writing conferences. The suggestions were meaningful because they were working with "images informed by video games" (p. 23). Rosenblatt (1995) discusses words as "merely inkspots on paper until a reader transforms them into a set of meaningful symbols" (p. 25). Meaning is created and a transaction can occur because the reader is able to construct meaning from the signs just as Adrian constructed meaning about characterization through the familiar codes of his game.

One teenage boy who participated in a three-year study created meaning through a specific cultural experience and semiotics (Burn, 2008). During the first year, the participant was interviewed about his gaming experience. In the second year, he created a game using provided software, and in the final year, he created a second game. The participant's created games demonstrated that he included elements that are typically connected to traditional literacy. Burn found that semiotic analysis must be connected with the cultural world of the student, which in this case was the world of gaming, because the creation of the game (or the text) is connected to the individual's experience.

Boys were successful readers and writers (contrary to some research) in Sanford and Madill's study (2007) in less traditional areas of literacy not recognized by schools nor teachers. The study focused on adolescent males involved in literacy through video game play. The participants were instructors (ages 11-16) at a summer video game camp who participated in focus group interviews. The study revealed that the participants found numerous opportunities to learn in the areas of operational and cultural literacy. Implications from this study demonstrated that more research about learning with the new literacies was needed of the extent to which students are entering the classroom with prior experiences from this realm.

Ranker's case study (2006) focused on an eight-year-old boy who used his experiences with the video game Gauntlet Legends in his writing and drawings. The participant was resistant to traditional literacy; he preferred drawing to writing. Several insights were discovered through Ranker's interactions, which consisted of writing conferences with the participant. Visual modalities are a strong component of video games, so the participant used drawing as part of his writing process. Inclusion of visuals suggested that

the writing notebook could be considered a design notebook to allow students to explore meanings in different modes. Also, video games are written in a nonlinear format, but narratives written in school settings are written almost exclusively in a linear format. Video games are interactive with the gamer, who can make decisions about action and characters to affect the path of the game and narrative. The study suggested that a nonlinear format can be explored with students in writing. The nonlinear format is familiar to gamers and used effectively when they begin to write and make meaning within their own narratives. This familiarity with non-linear experience can make all the difference in being able to have a full transaction. Ranker (2006) does just what Rosenblatt suggests by connecting traditional literacy (writing) with the participant's own world (gaming) in order to produce a transaction.

An interesting connection between gaming and traditional schooling is made in a case study by Abrams (2009). The participants of this case study were advanced video game players who played at least one hour per day and at least four days a week. The students did not recognize themselves as strong students at school. Descriptive coding was used to track when students connected academics to their video gaming experiences. The coding was organized into four areas: prior knowledge, remembering, comprehension, and past experience. Abrams found that the participants' game play contributed to building the schema needed for their traditional work at school. For example, one student was able to draw upon his understanding of the Normandy invasion from a video game sequence about World War II with which he was very familiar. All three participants discussed their distaste for school, yet they all showed excitement about classes and projects they could connect to their gaming experience. The context of the academic information had to be related to the gaming environment in order for the students to fully grasp the educational content in the classroom; the key to grasping is connection to experience. Gaming does not have to be a part of the traditional school day in order for students to call up those experiences and build them into schema that can further their knowledge and excitement about learning.

Just as a reader uses semiotics when reading, a gamer uses semiotics when gaming. The connection between gaming and reading is apparent through the use of semiotic domains and can help establish the beginnings of the parallel between the gaming experience and the transactional experience when reading. The similarities between gamers and readers was detailed by Journet (2007) who says that both groups must "find patterns among details, to organize information in relevant ways, and to map relationships using a range of semiotic systems" (p. 106).

Gaming Experience

Attempts have been made to compare the gaming experience with the reading experience (Aarseth, 1997; Murray, 1997; Rush, 2005; Ryan, 2002), yet an exact comparison is difficult since reading and playing video games have important differences. Instead, a parallel can possibly be made between the transactional experience in reading and the gaming experience. One way to view the

gaming experience is to realize that the experience is based on the outcome of what transpires between the individual and technology (McCarthy & Wright, 2004). Considering this view, one avenue to understand the gaming experience is to use evaluation methods that look directly at the interaction between the player and the game. The relationship between the gaming experience and reader response theory is evident because the meaning of playing the game "resides in the relationship between action and outcome" (Salen, 2007, p. 317).

Research Design

The paradox of the case study is the view that the individual leads to the ability to understand the universal. This paradox lends a creative element to research by studying the truth of the unique in order to grasp a more comprehensive (or generalized) view (Simons, 1996). A multiple case study is used to see the differences between cases with a goal "to replicate findings across cases" (Baxter & Jack, 2008, p. 548). Stake (2005) uses the term collective case study when more than one case is being examined instead of the term multiple case study. This is a collective case study of three cases that can be viewed in relationship to each other. Each case consists of the five gamers within each group. The case study attempted to answer the following research questions:

1. What aspects of reader response theory are displayed through video game play in the gaming experience?
    A. What similarities are found between the gaming experience as described by gamers and the key components of stance and transaction found in Louise Rosenblatt's transactional theory?

Profile of Participants in Case Study

Participants were placed into three groups according to their preferred video game; each group consisted of five participants. The results were reported according to how the emergent themes were demonstrated in each case study, which is grouped according to chosen video game. Participants were asked to provide age, ethnicity, and gender at the beginning of the interview. The majority of participants were White, with five non-White participants. Females outnumbered (total of 9) male participants (total of 6) in the study. Two groups of siblings were involved in the study, although each group played different games. The Sims Freeplay participants had been playing for at least one year; Halo 1 participants had been playing four to six years; WoW participants had been playing for three to eight years.

Interviews

The participants were interviewed using questions regarding their gaming experience when playing the specific video game of their choice as well as questions about their general gaming experiences; thus, the interviews were semi-structured. The established interview questions were developed from Alberti (2008) who poses questions to understand the "gaming experience," and those questions were used while interviewing the participant to demonstrate how a gamer views her/his gaming experience. Alberti (2008) poses these questions as rhetorically to consider the connection between the gam-

ing experience and the reading experience. These questions were used as a foundation for the semi-structured interview, as a way to connect the two experiences for the participant. Three other questions were adapted from reading inventory questions (Vacca, J., Vacca, R., & Gove, M., 1991) to give a sense of the history of the gaming experience for the participant. Further questions were developed that might relate the gaming experience to the levels of personal understanding and efferent/aesthetic scale. Since the interviews were semi-structured, follow-up questions were used to encourage the participant to add depth to answers given to the established interview questions.

Coding Process for Interviews

The interviews (Spradley, 1979) were recorded and transcribed verbatim. Using the descriptive coding method (Miles & Huberman, 1994; Wolcott, 1994), each transcript text was read three times, and participant responses were given descriptive codes summarizing their responses. Descriptive coding "summarizes in a word or short phrases – most often as a noun – the basic topic of a passage of qualitative data" (Saldana, 1994, p. 70).

All of the participants answered similar questions in their interviews, so themes found after the descriptive coding of transcripts were connected to the questions asked during the interview. Additionally, importance was given to any prominent themes emerging from the texts with regard to a relation to Rosenblatt's reader response theory. A list of emerging themes was constructed from the descriptive codes and then connected to Rosenblatt's transactional theory in order to understand how the gaming experience is similar to the reading experience.

Results

Interview Data

This study examined how a gamer's experience with playing the video game may be parallel to the transaction in reader response. The interview transcripts were coded with descriptive codes and read three times to code responses that connected to either stance or the transaction. Once the transcripts were coded according to these parameters, themes emerged related to either stance or transaction (see Table 1).

Personal Connection to Video Games

Choice of Genre

The Halo 1 participants believe that playing in first person gives them a better experience of actually living through the character than playing in third person where the player can see the character from an outside view. Iris talked about how she feels more connected to the game when she can see the game through the eyes of the character. Sherry explained that playing in first person is easier for her to understand than third person play because she can "understand the spatial relation that way and how to direct the character." She must be completely immersed in becoming the character to efficiently operate the game in order to have a good gaming experience. But Alex suggested that being in first person goes beyond operating the game: "…it's more of an actual experience than it is just playing a game…I think that alters your perspective so that you're experiencing something rather than just playing the game."

In contrast to these lived-through experiences favored by Halo 1 players, the Sims

Freeplay players admitted that simulation is not their favored game genre and report a much different experience while playing. Only one of the Sims FreePlay participants reported simulation as her favorite type of game; they preferred other genres, such as puzzle and logic games. They were not as concerned with living through the experience as with just accomplishing the tasks set before them in the game and described their experience as an "escape from reality." Laura described playing Sims Freeplay as a "way to waste time like if I'm waiting for something and got some extra time." Another commonality among all the Sims Freeplay players was that they liked this game because they can play it for a short period of time throughout the day instead of having a long gaming session, and Danielle, the only participant who identified simulation games as her favorite genre to play, specifically pointed out that being able to "play the game in bits and pieces throughout the day" is her main motivation for liking the game. The decision to play the game is not about a strong connection to the game. All of these participants reported playing simply to fight boredom or to have "a little entertainment." When discussing the events of the game, the Sims Freeplay participants provided only literal meanings of what happens within the game. On Cox and Many's (1992) levels of personal understanding (LPU) chart, their responses were contained at the first level, which is in the world of the text.

WoW participants enthusiastically described RPGs as their favorite genre of game to play. One commonality found among the players when they detailed why RPG is their favorite genre was the challenging and interactive nature of RPGs. Nick plays WoW exclusively now, and he thinks the challenge the game provides is why he does not need to play other games: "You always have to play well when playing with other people because what one person does affects you, and what you do affects them and you have to adapt to their skills. That's actually a challenging part of the game." Another aspect to the challenge is the element of strategy because, as Mark pointed out, "there is more strategy behind the role-playing game than just the simple point and click or driving around a racetrack or whatever." Mark further explains that RPGs are challenging because of the thinking process behind working through aspects of the game, and he prefers that in a video game genre. Another part of the challenge is the creative options provided in the game. Nick describes WoW as "an entire world so you can keep creating constantly." The idea of creation is important to all the WoW players in the study. All the WoW participants mentioned the design and creation of characters as a reason they enjoy this game and genre; for example, Billy explained, "you have to create a backstory for your character that really keeps you interested in the character."

Relationship with the Game

All but one Halo 1 participant had read the books associated with the lore related to the game, and the one participant who has not read the books is familiar with them and has discussed their content with other players. Three of the Halo 1 participants described reading online information related to Halo on a weekly basis, while the other two participants read related information on a monthly basis. In similar fashion, WoW par-

ticipants had a strong connection to the game that extended beyond simply playing the game. All five WoW participants spend time each week doing outside research about the game and/or reading lore associated with the game; four of the five participants even designate a specific time each week devoted to outside reading. Lisa described this connection by saying, "so even though I'm not reading the storyline or lore all the time there's so many other things to be reading because I feel like I'm always looking things up just to stay really into the game." Jordan is a guild master and expects everyone in his guild to research the raid before going into raid, and if the members do not do their research prior to the raid, they must leave the guild. Nick has the same rule in his guild. In stark contrast, Sims Freeplay participants do not report spending any time outside of playing the game for research or reading. One participant, Danielle, does receive a monthly e-newsletter but only spends a few minutes skimming the information. Danielle also visits a Sims website to discover new additions to the game, but she only briefly visits the site once every few months.

Game Completion

Alex explained that he is compelled to play a game until completion only if "the storyline is engaging" within the game; if not, he can just enjoy the action of the game and turn it off at any time. Brett agreed by explaining that he prefers playing games that have a "strong and interesting storyline making me [him] have to finish and beat the last boss." Having to finish the game or reach an ending point was a common theme among the Halo 1 participants; Sherry described this push forward as "You know the game is pushing you toward something and you're just in the story and you have to keep going." All of the Halo 1 players described Halo 1 as a game that engages them to the point that they must keep moving forward in the game to reach an end point.

WoW is not a game designed with an ending per se; players can reach a certain level to open up new content but not an ending. Mark explained that when he plays other types of games, he might feel compelled to get to the end, but with WoW, he just wants to move forward and discover new content. The other WoW participants focused on the same point when discussing the importance of reaching the end of the game. Nick and Jordan discussed progressing through the game (or leveling) as much more important than finishing. Jordan explained, "the beginning is the learning and then 85 comes and you really start playing. It's another beginning." In fact, he went on to say, "the game doesn't start until max level." Some of the WoW players saw reaching max level as a type of completion of the game as Billy described: "I play my character to ultimately get to the end which is being at the max level and doing max level things." Even though the players may have seen the max level as an ending of sorts, they wanted to reach that level in order to move forward into more challenging content. And some players discussed how there is no real ending to WoW because of expansions and updates; Lisa described her desire for more content: "There's always going to be something else…more. There's always going to be an update. The expansion is coming out next month and there's going to be so much more to do, so it's like you

kinda don't want it to end in a way." Even though they do not want an ending, they want to move forward and reach levels of accomplishment.

In contrast, the Sims Freeplay participants did not see importance in finishing the game; as Rhonda pointed out, "…there's no reason to end because it's just the same stuff all the time…you're just doing the same thing." The other Sims Freeplay participants agreed that an ending is not necessary. Danielle explained that she normally does like to reach completion in other games, but in Sims Freeplay, "it's just something I can always do when I need to be entertained or something."

Distance from Reality

All of the participants specifically listed a break from reality as one of their favored aspects of their chosen games. Even though the Sims Freeplay participants were performing mundane and reality-based tasks (feeding characters, going to work, going to the bathroom, etc…), they all specifically stated that the game gives them a break from reality. Halo 1 participants talked at some length in their interviews about Master Chief and the Covenant in a very realistic manner even though the characters are futuristic and imaginary. WoW players acted in a similar manner when talking through the different characters, spells they can cast, and fantasy gear they can collect.

Gaming Experience

Lived-Through Experience

Three themes emerged from the data that were about participating in the gaming experience: describing, watching, and cheating the experience. Since all three were about the active involvement of living through the gaming experience, they are grouped together.

Describing the Experience

The participants each discussed their own description of their gaming experience. All but one Sims Freeplay participant mentioned briefly that the game does have a connection to the real life and described how the game requires money made at a job or tasks to buy items and create an easier life for their characters, which is much like real life. The WoW and Halo 1 players discussed such a relationship between the game and a greater meaning in much more depth. Mark discussed how he uses walk-through websites to help him when he has encountered a challenge in WoW that he cannot readily figure out. He likened facing challenges in the game to challenges in life: "Like I mean just like in everyday life if you have a problem you can't solve there's nothing wrong with asking for help." Both Nick and Billy listed nerfing as the only aspect of WoW that they dislike. Nerfing is the action taken by video game creators to lessen the power or desirability of an element in the game. Nick and Billy reported that when nerfing is used in WoW it is due to less skilled gamers needing help to advance in the game. Nick explained that such an artificial adjustment to the game "just isn't how real life goes" because in real life "working hard and being better at something is [are] good and people don't get a break at their jobs and stuff just because they don't know how to do something very good." Billy echoed this idea Nick describes when he explained that nerfing takes away from the experience for him because it shows players

that if they are not as accomplished at game play then the designers will step in and help them; this type of help "isn't given to you in life and just isn't right."

Watching as Experience

All of the Halo 1 players discussed how they have watched other players play the game for at least one hour, possibly longer, and while their experience of watching does not fully equal the experience of playing, they reported having a gaming experience in that circumstance. Several Halo 1 players remarked that they knew players who were not as skilled whom they believed could have a better gaming experience by watching a more skillful player.

WoW players echoed the responses from the Halo 1 players. All of the WoW participants discussed watching another gamer play as fulfilling even though they each added that actually playing the game supplies them their preferred gaming experience. Alex explained this best when describing a recent experience he had watching two teams play Defense of the Agents 2: "…and watching how they were playing the game and admire their skill I would consider that a gaming experience." Nick, a WoW player, explained watching the game as a gaming experience: "When I'm watching a game I mean I'm having an experience because when I watch my brother play I like watching it because I like watching everything he's doing and seeing the skills he's utilizing and seeing all the cool stuff going on. I think it's definitely a cool experience." Likewise, Jordan discussed watching walk-through videos online and felt he definitely had a gaming experience watching those videos. Danielle, a Sims Freeplay player, explained why watching is a positive experience for her because "I [she] have [has] really bad hand and eye coordination so I [she] can't always work the controllers but I [she] can watch him play and figure things out and I [she] like[s] that." Even though Danielle (and other Sims Freeplay players) agreed that watching game play gave them a gaming experience, they did not prefer to watch Sims Freeplay; instead, they discussed watching other video games when having a vicarious gaming experience. Several participants discussed watching their siblings play a game which lead to their wanting to actually play the game because they had a gaming experience while watching the game play. Lisa believed that watching a game could provide a gaming experience depending on the knowledge base of the person watching. For example, she thought a person who was not a gamer would not have a gaming experience by simply watching; whereas, to an avid gamer watching could because the gamer would have knowledge of what was happening during the game play. Mia, a Sims Freeplay player, talks about how she has a gaming experience when watching (although she excluded watching Sims Freeplay) because she feels a real involvement in the game: "It doesn't matter if you're sitting there watching it or playing it you're still wanting to turn left or turn right or shoot this gun or that gun and you're having the experience."

Cheating the Experience

The Halo 1 players participating in the study were all in agreement that cheating should not be tolerated when it impacts another's game play. Sherry even went so far as to describe those who do not cheat as be-

ing "legitimate players." She also questions how a cheating gamer can even enjoy the game: "But in a game like Halo, I don't see how gamers with cheats would really have a good experience because it is about the skill of the player instead of just running through the action." This same idea of lack of skill was echoed in the responses of other Halo 1 participants' responses. Brett described the connection between lack of skill and cheating by explaining "you're really cheating yourself more than cheating another player because you're cheating yourself out of the experience." He went on to explain that gamers who cheat are actually having a "watered down" experience and Iris agreed saying that cheating is pointless because "it's not really playing the game." Anna admitted she reports players when she discovers them cheating because "cheating takes from the skills." Alex began a website for a community that focuses on reporting cheaters and shutting them out of game play. Alex believes that cheaters are having a gaming experience "but it's an altered synthetic gaming experience." He described cheating players as those who could not have success any other way in the game.

WoW participants' responses were in alignment with the responses from the Halo 1 participants. All of the WoW participants were against cheating and felt it robbed the player of an authentic gaming experience. More specifically, all of the WoW participants expressed confusion about why a player would even choose to cheat. Nick and Mark discussed how cheating does not allow the player to experience the challenges. He felt that a lack of challenges would greatly diminish the true gaming experience. Billy explained that if a player cheats in WoW, he stopped playing with that person and reported the cheater, but he also admitted that if the cheating did not affect his own game play, then he might be willing to ignore it. Jordan admitted he has known people who have cheated in WoW and been kicked out of the game, but he does not understand the allure of cheating since he believes the cheater will be caught and not be able to play. The possibility of not being able to play is too high a price for him to cheat. Lisa also expressed dismay over why players would want to cheat: "It seems like a waste of time because you're not really experiencing the game."

In contrast, the Sims Freeplay participants did not take issue against cheating in the game. In fact several participants admitted to cheating. Danielle said she encourages other players to cheat because she thinks that players need more money to buy more things in the game. Laura and Rhonda were the only Sims Freeplay participants to classify cheating as wrong because it takes from the experience, but they did not have a problem with other people's cheating as long as the cheating did not affect their own game play. Cindy expressed a similar stance by saying "if you're playing by yourself, I see no problem with it." She admitted to using cheat codes frequently in the game to move ahead. Mia believed players who cheated for their own gain and did not affect others should be allowed to cheat. She did not approve of using cheat codes to hurt another player, "but if you're using it for your own personal game then that's fine."

Implications

The incorporation of video games in the classroom may prove difficult for educators. More research is needed to understand exactly how video games can be included in curriculum due to the complexity of video games and the time and effort that must be put into understanding and mastering a video game (Gee, 2003). Video game content is certainly a factor that educators must consider when including games in the classroom. Different levels of violence can be present in video games, and the entire genre of FPS is based on the player assuming the role of a shooter. Playing the role of a shooter is a part of the game that educators and parents might not be comfortable with when it comes to young players. In addition to violence, some RPGs do require the players to use and become familiar with magic spells and potions. Parents could have a problem with their children learning about magic and/or committing violent acts while playing the game. Curriculum developers have to be aware of these types of features present in games so as to avoid the inclusion of such controversial topics. Additionally, some video games are going to be largely based in trivial actions. Sims FreePlay is a good example of a game that does not have any level of depth with meaningful content and does not require players to think through strategy or do any kind of research. Games with this type of play are easy to learn and navigate, but the content is not intellectually demanding.

The results from the study view the response of the gamers in terms of Rosenblatt's transactional theory. In this study, the data from the interviews were viewed through the reader response lens in order to see if the gamers are engaging in a gaming event that uses the reader response approach. The key components of stance and the transaction were examined in the interviews about the gaming experience. Data demonstrated that the Halo 1 and WoW players tended to have a more aesthetic response to their gaming experience than the Sims FreePlay participants.

Demonstrating a connection between reader response theory and gaming is one way of understanding gaming as an actual literacy that may have similarities to traditional literacy. The parallel between the gaming experience and reading experience was demonstrated in the results as well as an understanding of the foundations of how the transactional experience is just as present in gaming as in reading.

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Table 1.

Themes Related to Rosenblatt's Transactional Theory

Themes Found in Transcript Texts	Transactional Theory Key Tenets
Personal Connection to Video Game • Choice of Genre • Relationship with the Game • Game Completion • Distance from Reality	Efferent-Aesthetic Stance
Gaming Experience • Lived-Through Experience o Describing the Experience o Watching as Experience o Cheating the Experience	Transaction

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Twenty-First Century Early Childhood Teaching, Learning and Play

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Abstract

How is play or technology implemented in early childhood classrooms? As preservice teachers entering the field of early childhood education, we wanted to systematically examine this question and increase our understanding of twenty-first century teaching practices. The objective for this study was to research and consider current ideas and teaching practices therefore expanding our knowledge of early childhood curriculum, teaching and learning. Action research was selected as the research method to achieve this objective (Kemmis & McTaggart, 1988). The purpose was to develop a broader perspective and understanding of our future as early childhood teachers in the twenty-first century. This article describes twenty-first century research on teaching practices in early childhood including play and technology, a comparison between the research and current early childhood teachers' practices as well as our personal early childhood experiences.

Key words: early childhood, play, technology, learning, teaching

Introduction

The use of play and technology in early childhood classrooms appears to be on a continuum from incentives for completing classwork, educational tools for practicing skills, conveying information, or opportunities for constructive authentic play (Murray & Ramstetter, 2013; Papert, 1992). Early childhood educational research suggests that higher academic standards are achievable through play (Bodrava, 2008; Lehrer, Petrakos & Venkatesh, 2014; Wallace & Russ, 2015). Questions or concerns about using technology in early childhood classrooms possibly stem from the inappropriate use of technology as a learning tool or substituting technology for physical, sensory, kinesthetic play (Fox, 2003; Haugland, 2000).

Educators realize that curriculum for early childhood development requires movement, human connection and natural, caring environments for learning (Epstein, 2012; Epstein & Hohmann, 2012). The concept of play may be described as authentic learning that can involve movement, human contact, caring environments as well as educational. Play is serious, yet not serious, trivial yet profound, imaginative and spontaneous, yet

bound by rules and anchored in the real world (Gray, 2013, p. 139). There are five fundamental characteristics of play: (1) play is self-chosen and self-directed; (2) play is activity in which means are more valued than ends; (3) play has structure or rules that are not dictated by physical necessity but emanate from the minds of the players; (4) play is imaginative, nonliteral, mentally removed in some way from "real" or "serious" life, and (5) play involves an active, alert, but unstressed frame of mind (Gray, 2013, p. 140). Therefore, a developmentally appropriate early childhood curriculum incorporates various forms of play that stimulate authentic learning.

According to the National Research Council (2012) the use of play and technology in education can engage children in hands-on rigorous scientific discovery of concepts through active experimentation. Technology is defined as techniques, skills, and processes using interactive media to invent things, solve problems, or realize challenges. Technological tools include, but not limited to, cell phones, iPods, computers, scanners, printers, internet connections, email, cameras, digital cameras, video cameras, recordable CD's or DVD's, and digital video recorders. Such tools can encourage self- chosen and self-directed exploration, symbolic representation, physical manipulation, and learning modalities controlled by children while they play. For example, researchers discovered that preschoolers can use technology to engage in scientific investigations and create innovative artifacts (Glauert, 2005; Peppler & Glossom, 2013).

Early childhood coursework in higher education emphasizes pedagogies of engagement for child-directed learning that supports children's play. The premise for such pedagogical practices is to insure the use of developmentally appropriate practices for young children, age's three to eight. A research study examining preservice teachers' beliefs suggested that there was an imbalance between knowing and using developmentally appropriate practices (Kim, 2011). Jung and Jin (2014) conducted an investigation of 207 preservice early childhood education and child-family studies majors on the role of play in early childhood classrooms. Participants in the study identified play as important but differed as to the role of play in early childhood learning and curriculum. The differences became apparent as graduating seniors began to assume their role as teachers in their own classrooms. Play was only viewed as helpful but not as important as teaching and children's learning.

How is play or technology implemented in early childhood classrooms? As preservice teachers entering the field of early childhood education, we wanted to systematically examine this question for our future teaching practices. The premise for this study was to find and consider current ideas and teaching practices in order to expand our knowledge of early childhood curriculum, teaching and learning. Action research was selected as the research method to achieve this objective (Kemmis & McTaggart, 1988). The purpose was to develop a broader perspective and understanding of our future as early childhood teachers in the twenty-first century. The remaining sections of this article describes twenty-first century research on

teaching practices in early childhood including play and technology, a comparison between the research and current early childhood teachers' practices as well as our personal early childhood experiences. Personal experiences were included because research indicates that teachers basically teach the way they were taught (Darling-Hammond & McLaughlin, 1995; Darling-Hammond & Sykes, 1999). Awareness of personal biases because of past experiences may create clearer perspectives as future teachers.

Twenty-first Century Teaching in Early Childhood

Twenty-first century teaching in early childhood involves the development of constructivist learning environments that promote multiple pathways for children to actively engage in the learning process. The multiple pathways include child-centered, child-directed play, integrated technology, environments that promote collaborative and cooperative learning, differentiated instruction, integrated curriculum, and assessment for learning (Bewick & Kostelnik, 2004; Darling-Hammond & McLaughlin, 1995; Darling-Hammond & Sykes, 1999). Why? Children are active constructors of their own learning (Piaget, 1945). This infers that the early childhood teachers' role in children's development and learning is as a guide, mentor or facilitator (Gallant, 2000). As facilitators, mediators, models, and coaches, teachers actively engage children in rich meaningful experiences (Sharp 2006).

NAEYC (2009a) identifies play as a way to provide meaningful experiences and an avenue for developing self-regulation, language, cognition, and social competence. NAEYC (2009a) also notes that children learn in a variety of ways. One may infer that in the twenty-first century child-centered and play-based early childhood curriculum must provide various ways for children to learn through various forms of play including the use of technology.

Play

As defined previously, play is serious, bound by rules, reflective, thoughtful, imaginative and spontaneous (Gray, 2013). Play supports opportunities for children to acquire and practice such qualities as divergent thinking, problem solving, collaboration, communication, creativity, and critical thinking. The following list of play attributes, table 1, supports the use of inquiry-based learning, guided discovery-learning, class discussions, collaboration, communication, reciprocal teaching, self-regulated learning, and reflective teaching (Allen & Barber, 2015; Bodrova, 2008; Bransford, Brown, & Cocking, 2000).

Authentic play is natural, interactive, imaginative, repetitive, and inventive (Piaget, 1945; Rengel, 2014; Vygotsky, 1978). Nell, Drew and Bush (2013) indicates that meaningful play within a classroom allows children to make their own decisions, be intrinsically motivated, become immersed in the moment, allow for spontaneity even though children plan their play, make changes, and become emotionally engaged.

Technology

The definition of play aligns with the definition of technology in which techniques, skills, problem solving, and interactive engagement are necessary to accomplish self-selected objectives. Wohlwend and Peppler

(2015) advocates play within any early childhood curricula to include the use of new technologies that encourage intuitive, critical and divergent thinking. Researchers suggest that play, collaboration, creativity, science and technology need to be intricate parts of any play-based curriculum for meaningful play (Wohlwend & Peppler, 2015). Meaningful play includes the integration of technology such as digital cameras, desktop computers, multimedia bookmaking, internet research centers, Minecraft coding, and various other avenues for learning with technology. Table 2 describes attributes associated with children using technology. The only differences between technology and play attributes are interactive media and technology handling skills.

What about free play? Ginsburg (2006) identifies free play as unstructured playtime that offers opportunities for children to discover an interest as well as access creativity. Unstructured play is controlled, structured, and organized by children during playtime based on their own set of rules. There is freedom to learn how to work in groups, negotiate, share, self-advocate and make decisions. Technology can enhance this freedom. Consider the features of a computer game or toy. Computer games have specific design elements and basic rules but children have options when planning, performing and achieving self-selected results. The Fisher-Price Think & Learn Code-A-Pillar toy introduces preschoolers to problem solving skills for coding. Once again, children have options for planning, executing and determining the end results.

The important message for teachers is the need to find a happy medium between the use of technology and children's development (Levin, 2013). Emphasis is on the consideration of children's age and appropriate use of technology to promote active engagement in the learning process (NAEYC & Fred Rogers Center, 2012).

Methodology

Purpose of the Study

Reason and Bradbury (2006) describes action research as an inquiry that "seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people" (p. 1). The objective of our research was to gain a clearer understanding and perspective of our role as teachers. Our shared goal was to systematically collect interview data from current early childhood teachers, analyze and compare interview responses to early childhood research and theoretical constructs, then describe the results to enhance our awareness and knowledge of curriculum, teaching and learning (Kemmis & McTaggart, 1988).

Procedures

The systematic collection of interview data began with the construction of questions for early childhood teachers. The following questions evolved from NAEYC's (2009a) five interrelated guidelines for effective teaching. The questions aligned with our coursework as preservice teachers and our overall driving question, how is play or technology implemented in early childhood classrooms?

- How do you create a caring community in your classroom?

- How do you differentiate curriculum?
- How do you promote critical thinking, play, and creativity in your classroom?
- How do you use play to assess student's development?
- How do you create caring relationships among children through play?

Interviews were conducted through personal emails. The emailed responses were individually read and reread to determine categories based on individual theoretical perspectives. We established descriptors defining categories within the responses for each question. Triangulation was established by two classmates reviewing and evaluating the category selections and coding (Angen, 2000; Patton, 2001). Triangulation was used to establish consistency and validity for credibility and trustworthiness (Angen, 2000; Patton, 2001). Once the analysis was verified the categories were compared with early childhood theoretical constructs. The results were then compared with our personal experiences.

Participants

We interviewed 10 early childhood teachers that we knew. The teachers are employed in four different school districts within the State of Texas - Richardson ISD, Conroe ISD, Klein ISD, Cyfair ISD, and Katy ISD. The teachers' years of teaching experience ranged from 3 to 12 years. Table 3 describes each teacher's current grade level and number of years of experience per teacher:

Table 3

Kindergarten	1st Grade	2nd Grade	3rd Grade
8 years	12 years	9 years	3 years
	10 years	13 years	9 years
		5 years	4 years
		7 years	

Findings

How do you create a caring community in your classroom?

NAEYC (2009a) refers to the development of a caring community as part of creating a community of learners that supports development and learning. Ultimately, a classroom that is conducive to learning is one in which children feel safe, their differences are celebrated, relationships are built, and play is encouraged. The foundation for the community is consistent, positive, caring relationships between the adults and children, among children.

Theoretically, caring communities within the twenty-first century classroom emphasizes a comprehensive approach to creating nurturing and stimulating learning environments where children and teacher simultaneously control the learning (Rogers & Freiberg, 1993). The facilitation of significant learning rests upon certain attitudinal qualities that exist in the personal relationship between facilitator and learner (Rogers & Freiberg, 1993, p. 305).

An analysis of teacher responses to the caring community question recognized:

Table 4

Teacher Response	Responses
Modeling positive behavior	3 out of 10
Enforced respect in the classroom	4 out of 10
Open communication - active listening	4 out of 10

Brief responses were received from participants regarding creating a caring community of learners. Play or the use of technology during play was not mentioned as part of creating caring a classroom. Teachers emphasized the use of modeling behaviors of respect, cooperation and open communication that facilitates social development. Bandura's (1976) social learning theory suggests that modeling by the teacher requires attention, retention, reproduction, and motivation from the children to learn – reciprocal determinism. Whereas, Vygotsky's (1978) theory promotes modeled learning when children play an active role in the learning process. Teachers collaborating with children or children collaborating with children facilitates meaningful learning – reciprocal relationships. Such relationships are also important play attributes - social interactions.

Smeets (2005) describes technology as an avenue to support child-centered environments. Technology supports authenticity and allows for the construction of knowledge, open-ended learning, cooperation and collaboration, and mixed ability levels (Smeets, 2005). For example, technology provides multiple opportunities for the development of relationships when children construct digital storyboards, filmmaking, programing encoding, and even robotics. Children can learn how to create their own questions while technology provides ways to find the answers. Group projects also promote caring classrooms, hands on tactile exploration as well as an understanding of various forms of technology.

How do you differentiate curriculum?

Early childhood curriculum may be defined as a plan of action that includes development and learning goals for experiential learning. Curriculum development needs to include knowledge of: child development, individual differences, knowledge of subject matter, children's culture including parental desires, and long range goals for children to develop skills (NAEYC, 2009b). Concrete experientially based learning facilitates children's movement from pre-operational to concrete operational thinking. Experiential learning coincides with NAEYC's (2009b) recommendation to consider children's developmental levels, needs, and interests when developing curriculum. Focus is on how children learn. Children learn through play (Thompson, 2016; Twardosz, 2012).

An analysis of teacher responses regarding differentiated curriculum indicated:

Table 5

Teacher Response	Responses
Documentation required to differentiate	1 out of 10
Different learning styles	3 out of 10
Pre-planning curriculum	3 out of 10

NAEYC's recommendations align with some of the teachers' statements about pre-planning curriculum and the use of standards for curricular guidance as a framework for materials, learning experiences, and teaching strategies. Teachers must understand curriculum in order to adapt to individual needs, interests, learning styles, and cultures. Learning styles may be construed as children's preferences for learning. Only one teacher referred to the use of differentiated instruction. But, differentiated instruction occurred only when there was official documentation.

Experiential learning is apparent in differentiated instruction and the Universal Design for Learning. The concept in both educational frameworks imply that focus needs to be on children's interest, needs, and abilities when planning curriculum. This mirrors NAEYC's recommendations for curriculum development. In other words, curriculum adjusts to children's development and learning rather than children adjusting to the curriculum (Rose & Meyer, 2006; Tomlinson, 2012). Emphasis is on the concept that children learn in different ways so children deserve curriculum based on how they learn.

Play was not specified by any of the teachers. Pretend or make-believe play offers the opportunity for children to share ideas and learning. Pretend play supports and facilitates higher-level thinking. It is also directly connected to the development of social and linguistic competence. Wohlewend and Peppler (2015) suggests the use of curriculum based 'playshops' that encourage playful and collaborative learning. For example, children can collaborate and work together when transforming a version of their favorite story into live-action videos using digital cameras.

The use of technology was not mentioned either. The Technology and Young Children Interest Forum (2008) suggest the alignment and use of technology and media for the development of curriculum goals, child-centered and play-oriented learning, hands-on exploration and relationship building. Sadao and Robinson (2010) recommend the use of technology to meet children's unique and individual needs, learning styles and preferences. Technology may enrich children's differences in order to develop meaningful connections, organize concepts and materials, and offer opportunities to reflect on their learning. For example, digital literacy can offer choices for children when attempting to understand how stories evolve and constructing story narratives (Linebarger & Piotrowski, 2009).

How do you promote critical thinking, play, and creativity in your classroom?

Critical thinking occurs when children demonstrate the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and evaluating information. This infers that children need opportunities to develop the ability to organize, plan, implement and reflect upon their actions which results in the ultimate goal thinking and learning. Opportunities to choose when and how to gather information through observations, experiences, reflections, and communication transition children's intuitive reasoning to critical and divergent thinking.

An analysis of teacher responses about critical thinking, play and creativity

revealed:

Table 6

Teacher Response	Responses
Free choice – independent thought	3 out of 10
Age appropriate materials	3 out of 10
Centers	6 out of 10
Games	2 out of 10
Limited room for play	1 out of 10

Each teachers' response, except the limited room for play, implies efforts to access children's critical thinking, creativity and play. Three teachers reported the use of choice during the school day. Children must have opportunities to make choices and explore topics of interest (Dinnebeil, Boat & Bae, 2013). Choice allows children the opportunity to explore, create ideas and take control of their learning (Lanaux, Vice, & Fasching-Varner, 2014). Self-regulation, ownership, self-control, and self-directed learning is developed when children make choices and decisions free from adult intrusion (Wood, 2014).

Teachers identified the use of age appropriate materials. Promoting critical thinking, play and creativity requires age appropriate learning environments that are organized with materials appropriate at children's developmental levels (Dinc, 2011). Materials need to be interest-driven (Peppler, 2014) as well as meeting the needs of children from different cultures and different sexes (Dinc, 2011). Materials should also allow children to gain experiences through child-directed research and discovery (Dinc, 2011).

Teachers use of games, centers and age appropriate materials may or may not allow children multiple pathways for accessing and processing information. Teachers did not describe or specify how games, centers or materials were used – teacher-directed or child-directed. According to Lanaux, Vice, and Fasching-Varner (2014) centers can be used so children have full control of what they are learning and when. Centers create opportunities for children to collaborate and create an environment for independent learning.

Game-based learning offers engaging and motivating alternatives to traditional learning environments (Denham, Mayben, & Bomar, 2016). Game-based learning characteristics are similar to conditions for learning while children play: rule-based, active, contextually situated and engaging. Games create excellent learning environments because they are interactive, provide ongoing feedback, grab and sustain attention, and have appropriate and adaptive levels of challenges (Denham, Mayben, & Bomar, 2016 p. 71).

Teachers did not mention the use of play or technology when children are allowed to make choices. Age appropriate materials including technology tools allow students to create multiple pathways to access the information they learned. Meaningful learning and achievement can occur through gamification and the use of computers to support critical thinking, play and creativity (Kuo-Kuang, Peng-wei, & Chung-Ho Su, 2015; Mohammad & Mohammad, 2012).

How do you use play to assess student's development?

Assessment provides a record of growth in all developmental areas: cognitive,

physical, language, and social emotional (Kuo-Kuang, Peng-wei, & Chung-Ho Su, 2015; Ntuli, Nyarambi, & Traore, 2014). The purpose and objective of assessment is to connect standards with authentic learning. There should be a systematic assessment framework, which focuses on specific skills, concepts, or characteristic, as, described in learning expectations or outcomes for children (Currie, 2001). Assessment in early childhood classrooms include observations, developmental checklists, rating scales, rubrics, performance-based strategies for authenticity, as well as portfolios.

An analysis of teacher responses to the assessment question indicated:

Table 7

Teacher Response	Responses
Observation	5 out of 10
Games to assess student learning	4 out of 10
Play to assess social development	4 out of 10

The teachers cited observation and play including games as avenues for formative assessment. Play and games, as described previously, allow students to create multiple pathways to access and construct meaningful connections during the learning process. Gaming technology can create challenges as well as assess learning (Phillips & Popovic, 2012). Phillips and Popovic (2012) indicate gaming technology as an assessment tool that can also provide on-going feedback directly to children.

Teachers reference to the use of observation assessment aligns with NAEYC's premise that effective teaching begins with thoughtful, appreciative, systematic observation, and documentation of each child's unique qualities, strengths, and needs (Kline, 2008; NAEYC, 2009a). Observational assessment allows teachers to adjust instruction, scaffold learning and plan differentiated curriculum for each student (Kline, 2008; Kuo-Kuang, Peng-wei, & Chung-Ho Su, 2015).

How do you create caring relationships among children through play?

Building caring relationships with children requires mindful involvement, providing comfort, responding to children's questions, building on teachable moments, and attending to children's individualized needs. Trusting relationships between teachers, children and their families increases meaningful learning because children become comfortable within their various environments – home, school, and community. Relational security promotes confidence and competence for exploration, supports self-regulation, decreases stress, and enables children to learn from sensitive guidance provided by teachers (Thompson, 2016).

An analysis of teacher responses related to creating relationships described:

Table 8

Teacher Response	Responses
Modeled positive behavior	3 out of 10
Observe and interference when necessary	2 out of 10

The use of modeling is a restatement of teachers' responses from the caring community question. Observation and interfer-

ence when necessary statements are similar to the responses identified in the assessment question. Some teachers did not respond to this question. Play, technology, or play using technology were not mentioned within any response to this question.

Encouraging an environment of personal relationships facilitates the development of children's empathy and problem-solving skills which are important areas of self-regulation (Baldwin, DaRos-Voseles & Swick, 2003). Play increases motivation to learn within meaningful contexts (environments) as well as meeting intrinsic needs for social interaction (Vygotsky, 1978). As stated previously, play can include the use of technology. Couse and Chen (2010) research notes that the use of tablet computers provided support for the National Educational Technology Standards because children could use the tablets to communicate and work collaboratively. The tablets supported individual learning and contributed to the learning of others. Children began to produce innovative products using technology.

Conclusion

Experiential learning where children are physically and actively engaged in the learning process penetrates the current early childhood education literature. Teaching in the twenty-first century stresses pedagogies of engagement child-directed learning with emphasis on play and play with technology.

The purpose of this study was to synthesize our understanding of our planned profession before we become teachers. Awareness of personal biases because of early childhood experiences compared to twenty-first century research and the reality of current teaching practices will help develop clearer perspectives of future teaching practices. One of John Dewey famous quotes emphasis the need for such an awareness - *You cannot teach today the same way you did yesterday to prepare students for tomorrow.*

Personal Experiences

Attending public school primary classes provided the following perception of early childhood teaching practices before early childhood course work. A caring environment appeared to be a low priority in the classroom. Teachers were warm and caring but interaction among children during class was limited. Only one teacher appeared to use differentiated instruction to meet children's interests. There was limited access to manipulative materials. And, assessments were geared to daily stated objectives and passing standardized tests. An awareness of negative relationships between teachers and children was apparent when teachers didn't like a certain student. The student was seen as the "odd one out" and often had trouble making friends.

As a product of homeschooling, a caring community was present because everyone was responsible for helping each other learn. Experiential learning occurred daily with multiple materials and multiple ways to make connections for problem solving, critical thinking and creativity. We would use manipulatives to create visual representations of written numerals and properties, create lap books on different math concepts, and build problems with Legos or Lincoln logs. Assessment occurred during multisensory, experi-

mental exploration and hands-on activities. Play was at the center of everything we did. Relationships were strong, trusting and vital for planning play-based learning opportunities with other families.

Future Practices

What have we discovered and learned? As future teacher in public schools, we have come to the conclusion that a balance is needed between child-directed and teacher-directed learning. Both approaches facilitate the development of respect, open communication, and active learning. Meaningful learning is a very important part of development and allows for connections to be made, pathways to be built, and old to new schemas are to be constructed for future development (Baldwin, DaRos-Voseles, & Swick, 2003). Play and the use of technology during play can be part of early childhood development and learning.

We plan to construct and implement curriculum to meet children's needs based on abilities and interests. The development of curriculum includes play as well as play with technology. Current research, teacher interviews and coursework as well as scheduled and unscheduled contact hours with children have influenced the need to incorporate play and technology into curriculum.

Children must have age appropriate materials. As twenty-first century teachers the necessary equipment, tools and use of technology can extend beyond the classroom and into real life situations. Materials can include filmmaking, multimedia bookmaking, writing games using coding, virtual meetings with other classes around the world, and much, much more. We discovered that kindergarteners can construct digital storyboards and make movies. First graders are using Hour of Code to develop their own games.

The comparison between teacher interviews and early childhood research revealed that twenty-first century classrooms are evolving technologically. Technology can support the documentation of children's progress and maintain records of performance-based assessment strategies through photographs, digital videos, games, projects, work samples and portfolios. Basically, technology offers immediate documentation of children's progress, evaluation for instructional planning.

Our biases are evident with regard to creating relationships among children through play-based curriculum. Play can be integrated into the curriculum for social and personal learning (Saracho, 2012). Child-directed learning requires collaboration which translates into the need for positive relationships among children (Saracho, 2012). Vygotsky's (1978) theory stipulates that children's development occurs through sociocultural interaction. Teachers can construct appropriate situations and intervention strategies that motivate and encourage relationships through play which will also motivate learning (Saracho, 2012).

Limitations

There are definite limitations within this study. Only 10 teachers were interviewed. Additional interviews may or may not alter the findings. Additional coursework to complete teacher certification program requirements may also influence perspectives.

Summary

How is play or technology implemented in early childhood classrooms? The purpose of this action research study was to gain insight into early childhood teaching practices that include play and technology. Kemmis (2010) supports such research because our desire was to increase our knowledge of early childhood practices which may transform our future practices. Another John Dewey quote applies to this quest. *Education is not an affair of 'telling' and being told, but an active and constructive process*.

As twenty-first century teachers, it will be our responsibility to raise up a generation of critical thinkers and problem solvers. This is possible through play and the use technology during play. Children's desire to learn and be creative is fostered through play. The environment should therefore be one that fosters choice, self-regulation and self-discovery. It should allow children to use their imagination as well as explore the world around them through experiential learning using all of their senses, manipulating objects, and learning through trial and error.

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Table 1

Play Attributes:

- Develop multidimensional skills
- Test their capacities & capabilities,
- Socially interact
- Develop relationships
- Process emotions
- Apply new learning
- Set achievable goals
- Learn how to problem solve
- Develop fine and gross motor skills
- Develop creativity and innovation
- Language & vocabulary development

Make connections with prior knowledge

- Develop self-regulation & self-control
- Develop Critical thinking
- Physically experience the world around them
- Engage in opportunities for self-awareness
- Learn by doing
- Foster physical development
- Promotes engagement & movement

Table 2

Technology Attributes:

- Develop multidimensional skills
- Interactive media - interactive literacy
- Social interactions develop relationships
- Technology handling skills
- Apply new learning
- Language & vocabulary development
- Learn how to problem solve

Technology Attributes:

- Make connections with prior knowledge
- Develop self-regulation & self-control
- Develop critical & divergent thinking
- Engage in opportunities for self-awareness - collaboration
- Learn by doing – increases dexterity
- Promotes engagement & movement
- Develop creativity and innovation

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Scholarly Book Reviews

The Sociolinguistics of Digital Englishes

By: Patricia Freidrich and Eduardo H. Diniz de Figueiredo

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The Sociolinguistics of Digital Englishes (2016) by Patricia Freidrich and Eduardo H. Diniz de Figueiredo explores how sociolinguistics have been altered by current era of globalization, especially digital communication and the Internet. There are many books out there about sociolinguistics; however, this is the only one that incorporates how Englishes, in the digital age, have been influenced by new modes of communication, genre (e.g., wikis, blogs, and videologs) and digital/social media (e.g., Facebook and Twitter). Central topics related to sociolinguistics such as language choice, language shift, language ideology, multilingualism and many more are discussed in the context of world Englishes and internet communication.

The authors are careful and intentional with using the term world Englishes. They reference world Englishes scholarship and theory to bring attention to the fact that English can no longer be viewed as a single entity. Instead there are multiple local varieties. As English has expanded, the need to develop local norms for local uses have surfaced. They argue American and British English are important; yet, they are not the only forms of the English language. Indian English, Nigerian English and many other Englishes exist.

The authors indicate that this book is intended to be a key reading for "all students studying sociolinguistics and digital communication or with an interest in language in the globalized world" (p. i). We believe it speaks to a broader audience: anyone who has interest in languages. The book is comprehensible and accessible to every reader who has an introductory knowledge of sociolinguistics. The authors shy away from theory-heavy linguistic explanations and definitions. New or unfamiliar terms are highlighted in bold letters and explained simply and meaningfully immediately within the text.

The book is divided into 9 chapters. All of the chapters start with a list of objectives, "This chapter will help you understand that:..." (p. 1) and ends with questions for discussion. The objectives and discussion questions are detailed and to the point. While many important topics are discussed, this review will only highlight certain concepts.

Chapter 1, "Introduction: Language, Englishes, and technology in perspective," looks into how English has become a global language of communication. The authors assert it is essential to investigate and revisit sociolinguistics in its new virtual context. They ask the questions, "Do people use English creatively when they communicate online?", "Does the language change as a result of that?", and "Does English influence, and is it influenced by, other languages it meets online?" (p. 4). The majority of information that exists on the Internet is in English. However, Internet not only serves native English-speakers (NES) but also functions as a lingua franca between people whose first language is not English. Many interactions online occur among nonnative English-speakers (NNES). Before digital communication it was not common to come across speakers of local varieties of English, unless one travelled. Now, local varieties reach a broader audience through movies and media.

The authors also provide examples of new and loanwords from English for computer terms in various languages: "cliquear" for "to click" in Spanish and "blogueiro" for "blogger" in Portuguese.

Chapter 2, "Language, society, and changing networks," provides insight into how language is a "social entity, one that is used for interactions among people in diverse groups" (pp. 20-21) and influenced by "attitudes, technologies, political forces, and economic factors" (p. 21). It identifies how the Internet era changed the frequency, the form and the audience of people's communication. In fact, the concept of social network introduced by Milroy and Milroy (1985) has a different meaning now. It has now become a term used to connect to other people to share thoughts, feelings, images and many more on websites, blogs, online games, and other virtual spaces. Possibilities for intercultural communication have increased vastly. People in different parts of the world connect and will probably never meet in person while using English as the lingua franca.

Changes in oral and written modes of language are also explained. The new cyberculture, for instance, brought the use of emoticons, emojis, and new abbreviations such as lol (laughing out loud). Online gamers and bloggers have their own unique way of using English. The authors illustrate examples of newly created words such as *hashtag* and *selfie.* They include examples of new compound words such as *weblog* and the Internet slang terms *hactivism* for activism via hacking. The chapter further deepens our understanding of language ownership and argues ownership is not inclusive to being a native speaker of that language.

In chapter 3, "Code-switching, code-mixing, and virtual Englishes," provide extensive research and examples of code-switching, as well as code-mixing, that happens both in the real and virtual world. The more global online communication becomes the more choices language users have. Things previously done in real life are now being done virtually as evident by expressions such as "tagging", "bookmarking", and "trending".

Authors also talk about heteroglossia, translanguaging, pidgins, creoles, and minority languages. They point out to the availability for resources online for minority/creole

language users if they want to hear stories or learn vocabulary in Gullah or in Jamaican Creole.

In chapter 4, "English knowledge, power, and Internet competence", authors tackle how power operates in and through language. They cite works of Pennycook, Fairclough, and Foucault; scholars whose names we often associate with language is linked to power. They delve into Bourdieu's concept of cultural and linguistic capital. They argue that even though a great variety of voices are heard through the Internet it is still a space predominantly for hegemonic voices. They critique that not all individuals around the world have access to the Web or digital literacies. Digital literacy is primarily acquired in countries that have higher socioeconomic capital. They regard having access to English language education similarly. Later, the authors talk about the possibilities virtual worlds created for English Language Teaching (ELT).

In chapter 5, "Changing varieties, discourse practices, and identity," the authors demonstrate the importance of identity and how it is intertwined with language. They argue the topic of identity is already complex and it got even more complex in the virtual world. For example, people can choose different names (e.g., in online games and chats) and choose their *avatars* depending on who they wish to portray. Often international emerging businesses choose English names to attract more customers worldwide. The authors also mention how the Twitter and its feature of including only 140 characters forces users to develop "special linguistics abilities to accomplish that goal" (p. 93) of writing an effective message. They further take on the issue of language use in texting as well as where Standard English stands now with digitalization of language.

In chapter 6, "The sociolinguistics of gender and race construction on the Internet," the authors embark on inquiries that discuss issues of gender and sex, and race and ethnicity and their relation to language. They also delve into how these are affected by digital media. For example, people who are introverted in real life may find it easier to communicate virtually. Later they share data reporting on how men in general have more access to Internet than women worldwide and further unpack how gender and identity can easily be hidden and manipulated on the Internet. However, they explain the benefits of Internet also and how it has been "a place for linguistic gender-related innovation." (p. 116)

The authors talk about how gender and racial awareness and activism have become stronger with the help of Internet. They discuss how linguistic prejudice takes place in relation to race/ethnicity and language. For example, some Englishes that are stigmatized like Chicano English and African American Vernacular English. They remind the readers that linguistic varieties associated with racial/ethnic minorities and lower socioeconomic status tend to be the most marginalized.

Chapter 7, "Truthfulness and access in online communication," discusses how the digital age provided linguistic innovation; however, it also had undesirable outcomes. Some examples provided are cyberbullying and trolling. They examine why people do what they do online due to factors of anonymity and invisibility in online spaces.

In Chapter 8, "Culture and webs of

significance," the authors attempt to define what culture is and how it can be represented through "webs of significance," which refers to people sharing knowledge and experiences socially. People share their knowledge and experiences using language. We must keep in mind that even though the majority of people living in the U.S. speak English, we cannot associate nations with a specific culture. The authors further state that online cultures are "more flowing, less stable, more fluid" (p. 153) and acknowledge how the U.S. and U.K. influence the English language in cyberspace to a certain extent. An extensive discussion of Kachru's Concentric Circles model is also included.

Chapter 9, "Conclusions" focuses on addressing the following questions: Have languages, or specifically Englishes become liquid? If so, what was the role of the Internet in this liquefaction process? The authors explain what sociologist Zygmunt Bauman means by *liquid modernity,* "that our behaviors, relationships, trade negotiations, wants, and wishes transform so fast in present society that we do not have time to strengthen them enough for them to become robust and durable," (p. 160). The authors assert that oral Englishes have remained strong and have not reached a "liquid" state. This is not the case for Englishes in a digital environment because they "are indeed a liquid state, as they do not seem to have a regular shape that is based on specific norms and institutions, or regular patterns that can be expected" (p. 164).

The chapter concludes by the authors anticipating how more fluid Englishes will become in the digital world. The Internet has made Englishes more malleable in which connects people across the globe every day.

Overall, Freidrich and Diniz de Figueiredo's book constitutes an extensive effort to present up-to-date account of sociolinguistics research. It fills an important void in the field of sociolinguistics and provides a starting point for discussion that is needed to understand the impact of digitalization on the English language. As authors argue no other language has been impacted as much as English.

Conducting Qualitative Research of Learning in Online Spaces

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In *Conducting qualitative research of learning in online spaces*, Gerber, Abrams, Curwood, and Magnifico lay the foundations of knowledge for doing just that: researching learning in online spaces. The world is increasingly flat and often online spaces allow researchers to conduct studies that exist across multiple modes of online communication; these online spaces require researchers to acquire the right tools to rigorously seek answers to their questions about how learning occurs online. The creation of online spaces has not only shifted research practices but also the means of expression and communication of their users. Digital literacies in multitude of forms, such as words, pictures, movies, sound, and the remix of it all are becoming the norm. This book helps researchers understand the digital world and think through ways in which researchers could connect with communities and access online spaces with minimal invasiveness to the communities. Additionally, this book will provide researchers with not only methods of gaining access, but also equip them with the right tools of research design, data collection, and analysis with augmented certainty of not breaching the participants' privacy. Through this work, the hard endeavor of qualitative research is rendered feasible.

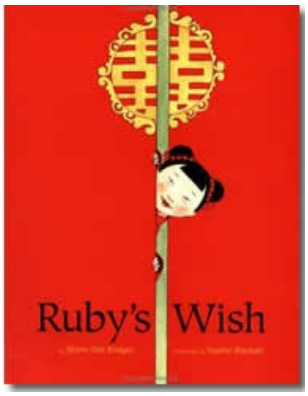
In the start in his foreword, Anthony, J. Onwuegbuzie sets the tone among qualitative research movements drawing from Lincoln and Guba's (2011) historical positioning of qualitative research movements from the early 1900's all the way through Web 2.0 in the 2000's into what he terms "methodological innovation". Knowing about the historical movements gives the researchers a clear sight to their questions and research stances. Researching Web 2.0 use and online spaces, especially within and outside academe within informal learning frames, is of paramount significance to understanding contemporary learners and learning. The authors of this book provide salient information on how to do this and how to study online spaces and the flows of learning across these spaces.

In the first chapter, Gerber et al., displayed the complexities of research sites and called for using a multimethod approach to research. Networked field sites, the term they used to describe the interconnectedness and fluidity of spaces, lays a background to suggest adopting a pragmatic stance in researching the multiple online sites that are at times connected and different in forms. In Chapter

Two, Gerber et al., introduce online spaces and possible online data sources available for researchers. Chapter Three connects online spaces and learning theories, such as behaviorist, socio-cognitive, and socio-cultural. In this chapter, the reader understands that despite the advancement of technology, learning in online spaces is still tied to the theories of learning in social sciences. Chapter Four defines the profile of a qualitative researcher and digs into inhabiting online spaces with the complexities of collecting rigorous data ethically. Chapter Five explains trustworthiness and rigor in light of the philosophical paradigms of research. Chapter Six accompanies researchers into the analysis of data, as, when it comes to ethics in online research, the line between what is ethical and what is not can often be fraught within confusion. The last chapter pushes the traditional boundaries of qualitative research methods. It centers on research in new times; it broadens the sources of data and challenges the researcher to be creative in selecting the right tool for the right set of data.

Overall, the structure of the book is reader friendly and provides resources for both beginner and experienced researchers. It is, however, not meant for researchers with little to no experience with the traditional qualitative approaches. This work is a stepping stone into thinking through researching learning in online spaces. It is a great resource for every researcher interested in understanding and documenting how learning occurs in online spaces.

Children and Young Adult Book Reviews

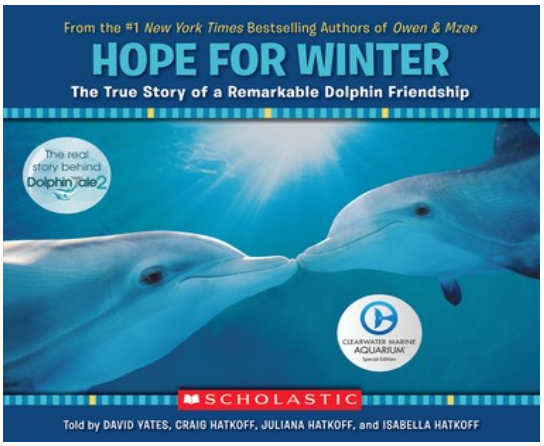


Ruby's Wish

Written by Shirin Yen

Reviewed by Dr. Tamesha Bullock, 7th ELAR, Spring Branch ISD, Houston, TX.

Ruby is Red! Red is Ruby! Ruby's love of red and learning personifies one with great character and courage. Red is the fire that sparks Ruby's trail to ignite a blaze that brings great change to the world around her. The brilliance of "red" in Ruby makes her shimmer, shine and stand out among others while demanding the attention of an entire society. Ruby's Wish by Shirin Yen is one of the most fascinating realistic fictional books. It details a young girl's struggle against cultural traditions in China. Because Ruby has a passion for learning, her journey as young girl displays the fight and the determination on the inside of her to go against the cultural grain of not allowing girls to obtain an education. Her personality of self-determination and being a "cultural rebel" in her society is displayed in how she dresses and presents herself to those around her. Ruby's character is not only hard to ignore, but also plays a huge role in impacting the mindsets of an entire society. Ruby's Wish is an inspirational book that motivates those on personal journeys to become trailblazers for those who follow and want to leave an imprint and long lasting legacy.



Hope for Winter: The True Story of a Remarkable Dolphin Friendship

Told by David Yates, Craig Hatkoff, Juliana Hatkoff, and Isabella Hatkoff

Reviewed by Paula Opp, 5th Grade Science, Cleveland ISD, Cleveland, TX.

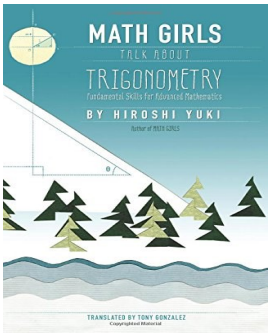
What kind of friend do you think you are? How do friendships begin? What makes them strong and lasting? The story, Hope for Winter, begins with the rescue of a two-month old female, Bottlenose dolphin, named Hope. With the help of the Clearwater Marine Team, Hope struggles to survive and grow stronger. It is soon evident that the tough little dolphin will never be able to be released back into the wild. The story continues in the Clearwater Marine Aquarium located in Florida where another female, Bottlenose dolphin, named Winter was rescued five years before Hope. This tale of the remarkable friendship between Hope and Winter is accompanied by photos of their journey. This real life story of friendship can help students appreciate different forms of friendship and that differences can be good.

2312

Written by K.S. Robinson (2012)
New York, NY: Orbit

Reviewed by Lisselotte Villatoro, READ 3373/3374, Grades 4-8, Sam Houston State University, Huntsville, TX.

This science fiction book is a one of a kind adventure. 2312 takes place in outer space following two major characters living on different planets. We see how they adjust and what they have to go through in space. This book also makes the reader think critically. This futuristic novel takes us to a world that could become our own with the help of advanced technology. There is a lot of astronomy, which is great for young readers who love science fiction. It is a beautifully written novel using real physics and biology to represent our possible future. Definitely something for young readers to look into; not only does it give the reader a captivating story but it also teaches about how the human race can live in outer space and how far we have come along.

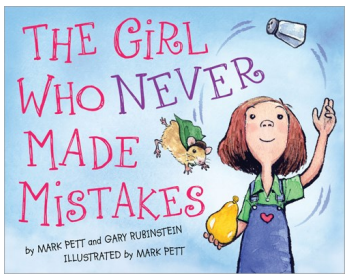


Math Girl's Talk about Trigonometry

Written by H. Yuki (2014) Austin, TX: Bento Books, Incorporated, 276 pages.

Reviewed by Chelsea Actkinson, Cailynn "Cici" Senneff, and Mikaela Odom, READ 3373/3374, Grades 4-8, Sam Houston State University, Huntsville, TX.

Just imagine yourself being a girl and talking to your best friend. You can talk to her about anything! You are not afraid to ask your best friend questions, and she is always there to respond back! Together you and your best friend will find a solution. Through a fun math girl series, the book talks back by using sine and cosine functions, and deriving the value of pi. The reader will be consumed by the helpful review problems the book provides and open-ended problems to push the reader's mathematical curiosity. This is a fun teen book that opens your mind from the dream world you thought you lived into the mathematical fact of reality, while being your best friend.



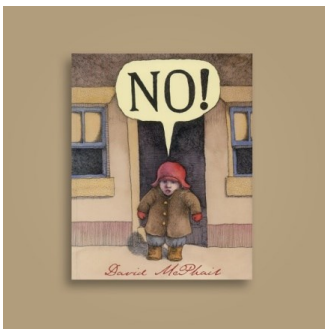
The Girl Who Never Made Mistakes

Written by M. Pett and G. Rubinstein (2011). Naperville, IL: Sourcebooks Jabberwocky. ISBN 978-1-402-25546-5

Reviewed by Sarah Hodges and Rachel Shelton, READ 3373/3374, Grades 4-8, Sam Houston State University, Huntsville, TX.

Mark Pett and Gary Rubinstein talk about the life of Beatrice, a girl who never makes mistakes. This fictional story illustrates the unrealistic expectations she feels that life has set for her. It is not until she finds herself lying on the floor that she realizes her fear of messing up.

Beatrice's life was constantly on display while the world watched for her to make her first error. While cooking with her friends, she slips on rhubarb that her friend previously dropped on the floor. Eggs fly into the air, but flawless Beatrice catches them all and forgives her friend's slip-up. Realizing that she *almost* made her first mistake, anxiety began to swell within her. As her concern becomes too much, her act in the talent show comes tumbling down across the stage leaving her frozen in fear. Her worst nightmare was now her reality. Instead of letting the fear overcome her thoughts, she was able to laugh off her mistake. This book connects the student's own anxieties with Beatrice's fear of messing up. The student can share those emotions through her story and come to the conclusion that it is okay to not be perfect. I definitely recommend this book for middle school classrooms to help alleviate some anxieties that students have regarding mathematics.



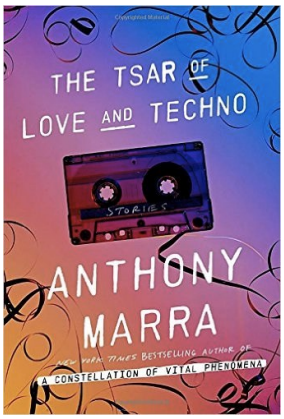
No!

Written by D. McPhail (2009) New York: Roaring Brook Press

Reviewed by Christine Benedict and Kristin Pesz, READ 3373/3374 Grades 4-8, Sam Houston State University, Huntsville, TX.

How can the word "No!" prove to be so meaningful, especially when only used three times in an entire book? David McPhail uses the book No! to show how powerful a simple word can be.

Although our young, male, central character in the book is unnamed; he provides the focus for the story as he encounters and witnesses several different acts of oppression and violence. When the character decides to use his voice, the chain of events in the story takes a turn. The author uses the word "No!" and the images in the book to show that we should not stand down to even the scariest of thoughts. In the classroom, this book can be used as an example of man vs. society, man vs. man, and man vs. self. It can provide a lesson on bullying through literary conflict. Through the book's imagery, we get glimpses of important conflicts in history, so it can be used as a great introduction to a historical lesson. The vivid scenes portrayed in the book bring a message of great meaning to young minds that may be struggling with conflict in their own lives. How would you use your most powerful word to bring about change?



The Tsar of Love and Techno

Written by Anthony Marra (2015)
New York, NY: Hogarth

Reviewed by Kristie Bledsoe and Katy Davis, READ 3373/3374 Grades 4-8, Sam Houston State University, Huntsville, TX.

Press play and immerse yourself in the stories of a prima ballerina, a correction artist, a curator and a Russian soldier whose lives seem to be interconnected by thinly drawn lines only to be revealed as an expansive web in the conclusion of Anthony Marra's *The Tsar of Love and Techno*. Mimicking the recordings on a cassette tape the series of short stories compile together to create one lasting impression of the impactful nature human lives have on one another. The book takes a new light to the writing of short stories with language and references that come together into a cohesive story about the corruption within Soviet Russia and the surrounding regions. The short stories activate the students' critical literacy as they find the links between stories and search for new perspectives on a history often ignored in the United States. Never before will the readers have experienced writing so meticulous and detail oriented. This innovative and upcoming classic will stir a provoking discussion in the classroom and give students a broader perspective on the world .

Cashville Kidz: SMART Budgeting episode 23. 24 episodes

Created by Reyes M. and Liew B. One-Step digital animation studio. Money Tree productions. Feb.26, 2016.

Reviewed by Jasmine Morales and Lauren Trapp, READ 3373/3374 Grades 4-8, Sam Houston State University, Huntsville, TX.

It's money and financial literacy time in your classroom and the school has an unplanned fire drill. You're running late, or even if you are not late, you just feel like your students deserve a easy school day; whatever it is, you must show your students Cashville Kidz is a show that is strictly about money! It starts with the history of money, smart buying habits, and proceeds to introducing banking; how to balance time and money; goal and goal setting; good debt vs. bad debt; savings and investing; and even smart budgeting! This cute cartoon series is fun, has student friendly language, and the characters' personalities are easy to love. One key episode is episode 23, "SMART Budgeting". It's about the students having to learn an important tool, a budget plan, to lead them on way to financial success. The students talk about all the easy ways to spend money, how to realize how much they spend and how fast, and why it is important we have a budget. A budget will help prevent you from overspending and allows you to prioritize. The real-world scenarios make this show very relatable. Cashville Kidz is an awesome show that must be shown in a classroom!

FUTURE THEMES

JUNE 2017—RE-ENVISIONING LITERACY FOR STRUGGLING READERS

SUBMISSIONS DUE APRIL 15, 2017

DECEMBER 2017—UNTHEMED ISSUE

SUBMISSIONS DUE OCTOBER 2, 2017

SEND SUBMISSIONS TO READ@SHSU.EDU