Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Journal of Literacy and Technology: Volume 18, Number 2: Summer/Fall 2017

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Using a Collective Intelligence Scenario-Based Design approach to develop a collaboration ecosystem supporting the authorship of pedagogically valuable e-books for children

Bonnie Thompson Long
National University of Ireland, Galway
Bonnie.long@nuigalway.ie

Tony Hall
National University of Ireland, Galway
Tony.hall@nuigalway.ie

Michael Hogan
National University of Ireland, Galway
Michael.hogan@nuigalway.ie

Owen Harney
National University of Ireland, Galway
harneyowen@gmail.com

Theodoros Doukoulos
Q-Tales Project Programmer
douoht@gmail.com

Chita Murray
National University of Ireland, Galway
chitamurray@gmail.com

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Abstract

Literacy is a universal public good, essential to the overall, effective functioning of civil society through its foundational contribution to personal well-being and active citizenship. The extant research shows that literacy is ideally and optimally developed in childhood.

This paper reports research into the conceptualisation and design of an e-book ecosystem: Q-Tales, to support the collaborative and mobile, authoring and sharing of interactive, pedagogical narratives in the form of children's educational e-books. The research reported here enumerates and examines the use of Collective Intelligence (CI) methodology, combined with user story methods, in providing a structured, systematic process for collaborative elicitation and prioritisation of user requirements for the creation of the Q-Tales ecosystem. The paper concludes with reflections on the potential of CI as a methodology for the collaborative and inclusive design of innovative computing to augment literacy through interactive storytelling technologies.

Keywords: Literacy, technology, education technology, e-books for children, Collective Intelligence

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Introduction

The development and promotion of literacy skills in children is of paramount importance. This paper describes how we engaged stakeholders in the design of an innovative on-line platform for the creation of e-books for children in the context of a European Innovation Project, Q-Tales. A primary goal in developing the platform was to design an ecosystem that would allow for the creation of e-books that are pedagogically valuable and enhance children's literacy skills. The production of a complex, quality e-book for children requires a team that includes authors, graphic designers, narrators, music and sound effects artists, editors and curators. All these creative services (and others, directly or indirectly, related to electronic and legacy publishing) are provided mainly by freelance artists and small companies. Q-Tales has created a unique web and mobile children's book platform, through which e-book and app creators will be able to exhibit their work, and find partners and collaborate in creating e-books for children. Everyone involved in creating, publishing or buying content will be able to take part in the Q-Tales platform, which can be accessed and used via registration by authors, illustrators, voice artists, musicians, publishers, parents, children and educators.

The Q-Tales project has as its major objective the enhancement of literacy skills in children. All our design efforts within the project are focused on this goal. There is a need for e-book designers and e-book creators to make increasingly well-informed decisions by engaging with expert stakeholders and studying the needs of users (Colombo, Landoni, & Rubegni, 2012). In addition to the development of a pedagogical framework to guide the design of children's e-books (see Thompson Long, Hall, Hogan, & Papastamatiou, In Press), the authors of this paper were tasked with engaging expert stakeholders in order to investigate system user needs for the Q-Tales platform. We used collective intelligence and user story

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

methodologies to identify key user needs. Through the use of these methodologies, during a one day workshop, participants identified 72 barriers to literacy skill development that were organised into 8 categories, and a total of 265 solutions in response to these barriers. User stories highlighted 79 categories of user needs in the areas of story creation, interaction design, and learning/assessment tool needs. Design solutions were evaluated according to their feasibility and impact by the Q-Tales consortium to generate a final set for software implementation in the Q-Tales platform.

Broad Literacy Context

Literacy remains a highly significant priority on national and international educational policy and research agendas. Publication of the most recent data of the Programme for International Student Assessment PISA 2012 (Organisation for Economic Co-operation and Development, 2014) highlights the imperative to continue to focus intensively, strategically and systemically on improving and supporting literacy, in particular the encouragement of reading among young people. The development and promotion of key literacy skills among children and young people – from the earliest stages in their education - is of paramount importance. International data highlight how difficult it is to redress literacy difficulties in adulthood. In particular, UNESCO noted the difficulty in reversing current, problematic statistics in adult illiteracy and underscored the importance of childhood literacy development: "The number of illiterate adults remains stubbornly high at 774 million, a fall of 12% since 1990 but just 1% since 2000. It is projected only to fall to 743 million by 2015...Universal literacy is fundamental to social and economic progress. Literacy skills are best developed in childhood" (United Nations Educational Scientific and Cultural Organization, 2014, p. 4).

Defining Literacy

The definition of literacy employed by PISA focuses predominantly on the concept of *reading literacy*, which is construed as: "understanding, using, reflecting on and engaging with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society" (Organisation for Economic Co-operation and Development, 2013). Since PISA 2009, and for the two successive, most recent PISA assessments (2012, 2015), *engagement in reading* has become a key focus of the definition of reading literacy. The definition in use in the current, ongoing PISA assessment (2015) encompasses text in both traditional print and innovative digital formats. In Ireland, one of a number of EU-27 countries with a nationwide school-based literacy policy, literacy is broadly and inclusively defined as going beyond a print-centric focus to encompass speech, communications media and new technology. Here the focus is on "the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text, broadcast media, and digital media" (Department of Education and Skills, 2011, p. 8).

There are several key aspects to literacy and the development of literacy that are outlined in key policy and research on this issue. UNESCO has found that "Engagement in everyday reading activities helps sustain literacy skills" (United Nations Educational Scientific and Cultural Organization, 2014, p. 73). Furthermore, it has been shown (UNESCO, 2014) that children who engage in reading for pleasure generally perform better at school, thereby highlighting the importance of this activity for young people's general education and lifelong learning as they progress towards and enter adulthood.

Key factors influencing literacy development

Learning to read is a complex and multifaceted skill that changes as it is acquired (Snow, 2008). Literacy develops in stages, and is linked fundamentally to children's language

development (Sulzby, 1985; Chall, 1996; Whitehurst & Lonigan, 1998). One of the most important ways parents and carers can support children's emergent literacy development and chances of school success is through the practice of reading directly to children (Amulya, 2015). Pre-school aged children who engage in regular interactive book reading with a parent or caregiver are more successful in language growth, emergent literacy and reading achievement, regardless of the socioeconomic level of the family or the parents' level of education (Bus, van Ijzendoorn, & Pellegrini, 1995).

Spending time with children in one-on-one conversation; providing them writing materials; supporting their dramatic play; and demonstrating the uses of literacy and maintaining a playful atmosphere around literacy activities are some of the ways parents can promote a literacy-rich environment in the home (Snow et al, 1999). Other areas of family functioning that can influence reading development include the valorisation of literacy by parents and the value placed on it at home; parental expectations for academic achievement; availability and use of reading materials in the home; and opportunities for verbal interaction (Hess & Holloway, 1983).

Changing literacy requirements

Conventional reading usually begins as children enter formal schooling, between the ages of 5-7 (Snow et al., 1999). Over the course of the early years of schooling, children who learn to read successfully are able to identify printed words, read for meaning and read with fluency (Burns et al., 1999). As children reach the age of 8 or 9, they are increasingly expected to be able to read to learn new ideas and to gain new knowledge (Chall, 1983). At this stage of reading development, the texts read in school go beyond what the reader already knows and contain information that is beyond the reader's language and knowledge. Reading tasks

usually incorporate unfamiliar material and the reader's knowledge, language and vocabulary need to expand. Children who have not yet mastered the skills of the earlier stages of reading may fall behind in acquiring the knowledge that others are able to decode, infer and gain through their more advanced reading abilities (Indrisano & Chall, 1995).

At the later stages of reading development, reading instruction and curricula focus more strongly on reading comprehension and skills (Harlaar, Dale, & Plomin, 2007). An integral part of being able to comprehend reading at this level is vocabulary knowledge and being able to understand the meaning of words read in academic texts. Students need to be able to integrate new knowledge from texts with their prior background knowledge (Lawrence, White, & Snow, 2011). Langer (1999) defines the level of literacy needed by adolescents as "high literacy" (p. 1). Adolescents need literacy skills that go beyond the basic reading skills learned in earlier years of school. They also need "the ability to use language, content, and reasoning in ways that are appropriate for particular situations and disciplines/This notion of high literacy refers to understanding how reading, writing, language, content, and social appropriateness work together and using this knowledge in effective ways" (Langer, 1999, p. 1).

Literacy Technology Design

In the last twenty years, technology has emerged that creates new possibilities for storytelling, creativity and creative education. E-books are one such technology. Citing Cuban's classic critique of the historic hyperbole around non-bespoke technology in education, *Computers in the Classroom: Oversold and Underused* (2001), Plowman and Stephen (2003) pointed to the educational potential of novel computing, particularly where

novel digital—physical hybrid learning innovations can be designed, specifically to meet the user requirements of learners and educational stakeholders:

New technologies may lead to new concepts of play and learning in which ICT is much more than the "benign addition" referred to by Cuban (2001), especially as new ways are found of conceptualising ICT so that the term does not simply denote standard computers. These shifts in thinking may lead to technologies that can encompass participation by practitioners, parents and children in different learning spaces and promote discovery, delight, curiosity, creativity, self-expression and pleasure in learning (Plowman & Stephen, 2003, p. 160).

Innovative technologies are emerging that potentially enable and promote innovative, engaging and creative possibilities for children's literacy development, particularly through the augmentation of conventional storytelling, including the traditional book, with the affordances of interactive, mobile and ubiquitous computing. However, long before the advent of mobile devices such as the e-reader and the tablet, children had been reading e-books. The Living Books CD-ROM books have been available since the early 1990s (Liebeskind, 2015a).

The National Literacy Trust's 2012 report on childrens' literacy attitudes and behaviours found for the first time that children reported reading more on computers and other electronic devices than in print form (Picton & Clark, 2015, p. 7). In the more recent 2014 survey, 88.6% of children and young people reported reading using technology (computer/laptop, tablet, e-reader or games console), with only 11.4% reporting that they read only on paper. E-reading devices have become increasingly accessible and affordable (Liebeskind , 2015). In a series of surveys dating back to January 2013, exploring how children and parents e-read, both independently and together, Liebeskind found that the

overall take-up of digital books is growing, with 93% of children aged 2–13 years engaging in e-reading at least once a week (2015b).

Technology, and good e-book design, can be used to provide scaffolds directly within digital text to support reading (MacArthur, Ferretti, Okolo, & Cavalier, 2001; Strangman & Dalton, 2005). Technology is increasingly being used to create customized scaffolded learning experiences for students with diverse needs (Dalton & Proctor, 2007; Coyne, 2001; Wehmeyer, Smith, Palmer, Davies, & Stock, 2004). Importantly, we view literacy abilities along a continuum and we appreciate the need for greater scaffolding and sensitivity to specific needs for some individuals compared with others. Scaffolding implies a socially and technically supported context whereby a tutor or interactive learning device enables a child to solve a problem, carry out a task, or achieve a goal that would be beyond his or her ability if unassisted.

There is a need for e-book designers and e-book creators to make increasingly well-informed decisions by engaging with expert stakeholders and studying the needs of users and evaluating the impact of e-book learning experiences on learning outcomes (Colombo & Landoni, 2014; Colombo et al., 2012; Colombo, Landoni, & Rubegni, 2014). Research in the learning sciences suggests that when designing e-books to enhance children's literacy, it is important to include multimedia that supports the child's understanding of the storyline. Multimedia storybooks that contain multimedia effects that are congruent with and support the storyline have been termed 'considerate' storybooks; those that include multimedia effects that are incongruent with or incidental to the story have been termed 'inconsiderate' (Labbo & Kuhn, 2000). Including multimedia assets that do not support the storyline can confuse children and actually impair their comprehension of the story (Labbo & Kuhn, 2000). de Jong

and Bus (2003) made a distinction between the different kinds of multimedia storybooks, which they label as 'talking books' (those with a minimum of multimedia and interactivity), 'living books', which include multimedia combined with minimal interactivity, and 'interactive books', stories that combine multimedia with interactivity (p. 158). Of the three types of multimedia storybooks, 'interactive books' have been shown to provide the most support for story understanding (de Jong & Bus, 2003). Multimedia storybooks can serve as an electronic scaffold which provides children access to stories that may be beyond their reading level (de Jong & Bus, 2003; Labbo & Kuhn, 2000). Research shows that written text together with synchronised narration, multimedia elements such as animated pictures and sound effects that relate to the storyline, and the inclusion of an interactive dictionary that provides meaning of rare words, can support children's literacy development (Korat, 2010).

Developing technology and the need to involve stakeholders

With the advent of user centred design (UCD) (Norman & Draper, 1986), the top-down style of technology development gave way to users becoming a central part of the development process (Abras, Maloney-Krichmar, & Preece, 2004). UCD champions an "early focus on users and tasks, in order to understand the users, the tasks they perform, and the environment in which the tasks are performed" (Fox et al., 2008, p. 63).

New software is usually developed to meet a need or solve a problem (Pressman, 2005). Baetjer (1998, p. 85) described software development as a learning process. He stated:

> The process is a dialogue in which the knowledge that must become the software is brought together and embodied in the software. The process provides interaction between users and designers, between users and evolving tools, and between designers and evolving tools [technology]. It is an iterative process in which the evolving tool

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

itself serves as the medium for communication, with each new round of the dialogue eliciting more useful knowledge from the people involved.

The development of software typically follows predictable steps that help to create timely, high quality results. This usually includes a generic process framework including the following steps: communication, planning, modelling, construction, and deployment (Pressman, 2005). During the communication step, future users of the proposed software are consulted to gather requirements for user needs. As noted by Cohn (2004), gathering software requirements can be challenging: getting the balance right between what users want and what developers can do, can be very difficult.

Cohn (2004) suggested user stories as a way to enhance communication between the stakeholders and the developers of a software system. Knowing who the user is and what problems they are trying to solve can help developers to design better software (Carroll, 2000). Central to our design work on the Q-tales project, we built upon existing approaches to developing user stories by combining collective intelligence methodologies (J. N. Warfield, 2006) with scenario-based design (Carroll, 2000) and agile user story (Cohn, 2004) methods. The remaining sections of this paper focus on our approach to developing user requirements; some of the key results from our stakeholder consultation and design work; and the way in which we have used these ideas to inform the design of our software and e-book design ecosystem.

The Q-Tales Collective Intelligence Design Process

We appreciate that only very well-designed technological solutions will have any beneficial impact on the enhancement of literacy skills in children. We appreciate that there are many barriers to the design and implementation of beneficial solutions. As part of the Q-

Tales platform design process, we used Collective Intelligence and user story methodologies to facilitate our thinking in relation to key user needs.

Methodology

The methodology used to gather user-level requirements is inspired by a scenario-based design (SBD) approach (Rosson & Carroll, 2002), but builds upon this approach by adding a Collective Intelligence (J. N. Warfield, 2006) and agile user story development (Cohn, 2004) approach. As such, the approach represents a new synthesis of methods developed specifically by Hogan (cf. Hogan & et al, In Press). The SBD framework (Rosson & Carroll, 2002) describes an iterative approach to interactive systems design and analysis, and encourages a reasoning process about people using technology and about finding trade-offs throughout development, including trade-offs between the potential impact of design decisions and the feasibility of the design options.

Scenario-based design

Scenario-based design uses stories, or 'scenarios', at an early point in the development process to describe how a user might interact with a system. "A user interaction is a *sketch of use*. It is intended to vividly capture the essence of an interaction design, much as a two-dimensional, paper-and-pencil sketch captures the essence of a physical design" (Rosson & Carroll, 2002, p. 1032, italics in original). Instead of focussing on defining system operations, SBD, similar to other user-centred approaches, focusses on "how people will use a system to accomplish work tasks and other activities" (Rosson & Carroll, 2002, p. 1032).

According to Rosson and Carroll (2002) scenarios are stories that consist of:

- A setting or situation state;
- One or more actors with personal motivations, knowledge, and capabilities;

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

- Various tools and objects that the actors encounter and manipulate; and
- A sequence of actions and events that lead to an outcome that includes the goals, plans and reactions of the people taking part.

User Stories

User stories can be derived from more complex scenarios and are also often used in the development of software. They are simple stories that describe a discrete and specific functionality that a user wants from the software (Cohn, 2004). User stories are similar to interaction design scenarios, but they are much less detailed. Typically they describe one user goal for the software design, and are written on cards (Jeffries, 2001). Scenarios and user stories are popular in interactive system design because they facilitate communication amongst members of the design team in relation to usage possibilities and the problems and issues that arise for different stakeholders. Simple scenarios are relatively easy to write and it takes only a little more effort to enrich the scenario with a rough sketch or storyboard. When designers are working through ideas, they often wish to make progress quickly, so that they can obtain feedback from stakeholders and the design team and continue to refine their ideas. Scenario and user story development provides a valuable source of data to work with in this context.

In the language we are using and the approach we adopt in the Q-tales project, we distinguish scenarios from user stories. Scenarios are more complex narratives including multiple interlinked events and outcomes, whereas user stories focus on a single event and outcome. In essence, more complex scenarios are analysed and broken down into a set of user stories that inform the design of technology for enhancing children's literacy skills. Importantly, scenario-based design can help to prevent rigid thinking patterns in relation to

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

system design, and highlights that the design of an interactive system is an ill-defined problem. Ill-defined problems may evoke a solution-first problem-solving strategy, where designers generate and analyse solutions as a means of clarifying problems, goals, and allowable moves within a problem. Although solution-first problem-solving strategies are popular, commentators have noted that they are often problematic, as designers tend to generate solutions too quickly, before they have analysed what is already known about the problem and possible moves. Our collective intelligence analysis of barriers to literacy skill development in advance of user-story development helps to prevent this solution-first thinking. Notably, we recognise that ill-defined problems are ecologically situated in a complex field of influences, and solution-first thinking strategies may fail to respond to this problematic situation. Combining collective intelligence with scenario and user story development provides a rich context in which to ground the development of emergent solutions and iteratively refine and develop solutions in light of critical analysis and reflection.

Collective Intelligence

The Q-Tales partners conducted multiple collective intelligence scenario-based user design workshops across Europe; one each in Ireland, Italy and Poland. Each workshop began in the morning with a collective intelligence (CI) analysis of barriers to literacy skill development, followed by an analysis of options that may overcome these barriers. Based on Warfield's (1994) science of generic design, the CI process is a facilitated problem solving methodology that helps groups to develop outcomes that integrate contributions from individuals with diverse views, backgrounds, and perspectives. Established as a formal system of facilitation in 1980 after a developmental phase that started in 1974, CI was designed to assist groups in dealing with complex issues. The CI approach carefully delineates content and

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

process roles, assigning to participants responsibility for contributing ideas and to the facilitator responsibility for choosing and implementing selected methodologies for generating, clarifying, structuring, interpreting, and amending ideas. Emphasis is given to balancing behavioural and technical demands of group work (Broome & Chen, 1992) while honouring design laws concerning variety, parsimony, and saliency (Ashby, 1958). CI has been applied in a variety of situations to accomplish many different goals, including assisting city councils in making budget cuts (Coke & Moore, 1981), developing instructional units (Sato, 1979), designing a national agenda for paediatric nursing (Feeg, 1988), creating computer-based information systems for organizations (Keever, 1989), improving the U.S. Department of Defense's acquisition process (Alberts, 1992), promoting world peace (Christakis, 1987), improving Tribal governance process in Native American communities (Broome & Cromer, 1991), and training facilitators (Broome & Fulbright, 1995). CI has also been recently used in a variety of basic science applications, for example, to design a national well-being measurement system (Hogan et al., 2015), to understand the adaptive functions of music listening (Groarke & Hogan, 2015), and to design a student-centred conceptualisation of critical thinking (Dwyer, Hogan, Harney & O'Reilly, 2014).

CI utilizes a carefully selected set of methodologies, matched to the phase of group interaction and the requirements of the situation. The most common methodologies are the nominal group technique, ideawriting, interpretive structural modelling, and field and profile representations. For the purposes of idea generation in our workshops, the ideawriting technique was used, along with categorisation or field representation of ideas.

Ideawriting (Warfield, 1994) is a method that utilizes relatively small groups of 4-6 persons each, formed by dividing a larger group into several working teams, for the purpose of

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

developing ideas and exploring the meaning of those ideas through open discussion. Ideawriting involves five steps: (a) presentation of a stimulus question to participants; (b) silent generation of ideas in writing by each participant working alone; (c) exchange of written sheets of ideas among all group members, with opportunity for individuals to add ideas as they read others' papers; (e) discussion and clarification of unique ideas; and (f) an oral report of the ideas generated by each working group in a plenary session. In this plenary session, duplicate ideas across the working groups are eliminated from the set and new ideas (if any) are added; the resulting set of ideas is then ready for use in the next stage of the group's work.

In the current application of CI, workshop participants worked to develop scenario-based user needs, which involved profiling user needs in light of the barriers to literacy skill development and options to overcome these barriers, and high level scenarios of the use of the Q-Tales Platform. This included a separate focus on (1) story creation needs, (2) interaction design needs, and (3) learning/assessment tool needs. Idea writing was used for each cluster of needs. High level scenarios including multiple users were used to prompt thinking in relation to user needs. All the short user stories generated by participants were generated in the form:

As User Type _____, I want _____, so that I can _____.

After addressing each set of needs for the first set of scenarios, we introduced a second set of user scenarios for discussion and idea generation. The wants (or needs) generated by participants were then analysed and key categories of user needs identified. We also analysed the reasons for specified needs and used this analysis to advance our understanding of the scenarios and prospective use case models. The sections that follow provide details of the collective intelligence report from one pilot site.

Galway Workshop

The collective intelligence design workshop held in Galway, Ireland included 18 experts from the fields of education, psychology, and educational technology design. An overview of the Collective Intelligence workshop process can be seen in Figure 1. We began in the morning with a collective intelligence analysis of barriers to literacy skill development which had been generated by the participants prior to the workshop. This was followed by a collective intelligence analysis of options that may overcome these barriers. We then worked in the afternoon to develop user stories and interaction design ideas, which involved profiling user needs in light of the barriers and options and high level scenarios of Q-Tales platform usage.

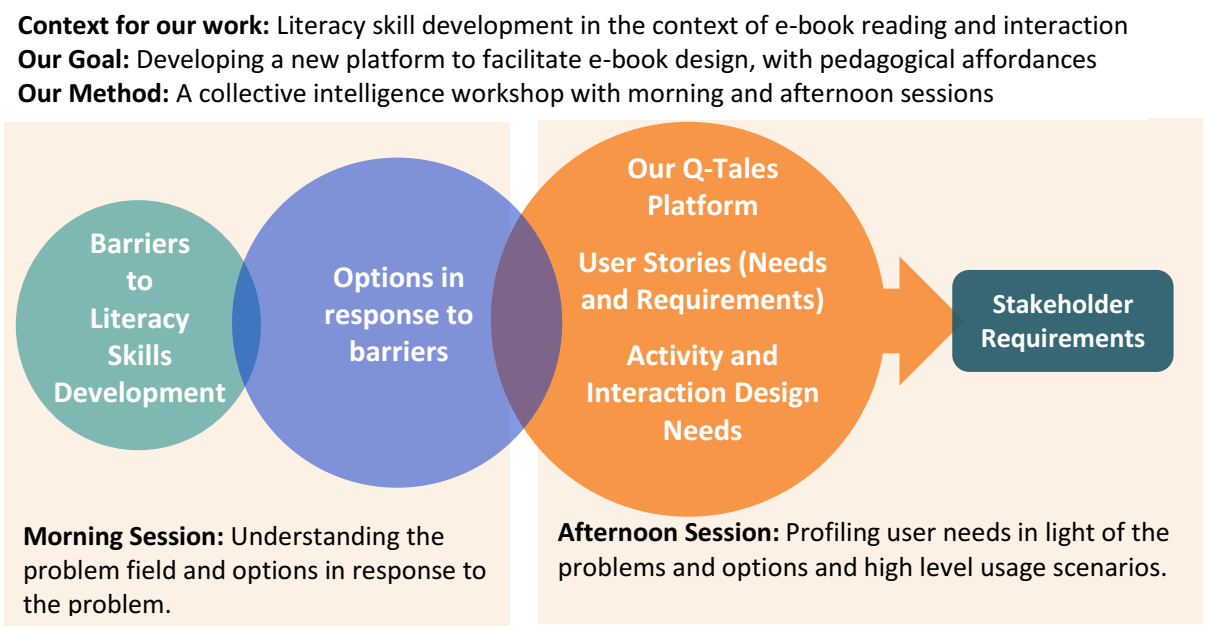


Figure 1: Overview of Collective Intelligence Workshop Process

Workshop Procedure

Prior to the workshop, participants were emailed and asked to generate five barrier statements in response to the question, "What are barriers to literacy skill development in

children?" Guidelines were provided for the writing of barrier statements. Barrier statements were collated and categorised so that they could be presented to participants when they arrived to the workshop. The categorised barrier statements were presented on display walls at the workshop venue and participants were divided into four sub-groups and asked to examine 2 categories. Groups were invited to add to their assigned categories of barriers if they felt key barriers remained which were not yet included. In the second part of the morning session, participants generated options in response to these barriers using the idea writing method.

In the afternoon session of the workshop, the initial options proposed by workshop participants opened the possibility space for creative thinking, whereby participants worked with specific usage scenarios and generated needs and requirements of users of the Q-Tales Platform, based on three scenarios. The scenarios involved hypothetical users including teachers, students, parents, book designers, and other stakeholders. Working this way in the afternoon, workshop participants generated an extensive range of 1) Story Creation needs, 2) Interaction Design needs, and 3) Learning/Assessment Tool needs.

Results:

Barriers to Literacy Skill Development

There were a total of 47 barriers returned by the participants prior to the workshop. Some of the statements included more than one barrier, so these were further broken down to create a total of 50 barriers. The individual barriers were then coded into 7 categories. During the first part of the workshop, participants added to and built upon these original barrier statements. At this stage, an 8th category, Technology, emerged from the participants' idea generation work. In total, at the end of the first stage of the workshop, there were 72 barrier

statements, falling under 8 categories. These categories, and the number of barriers in each category, can be seen in Figure 2.

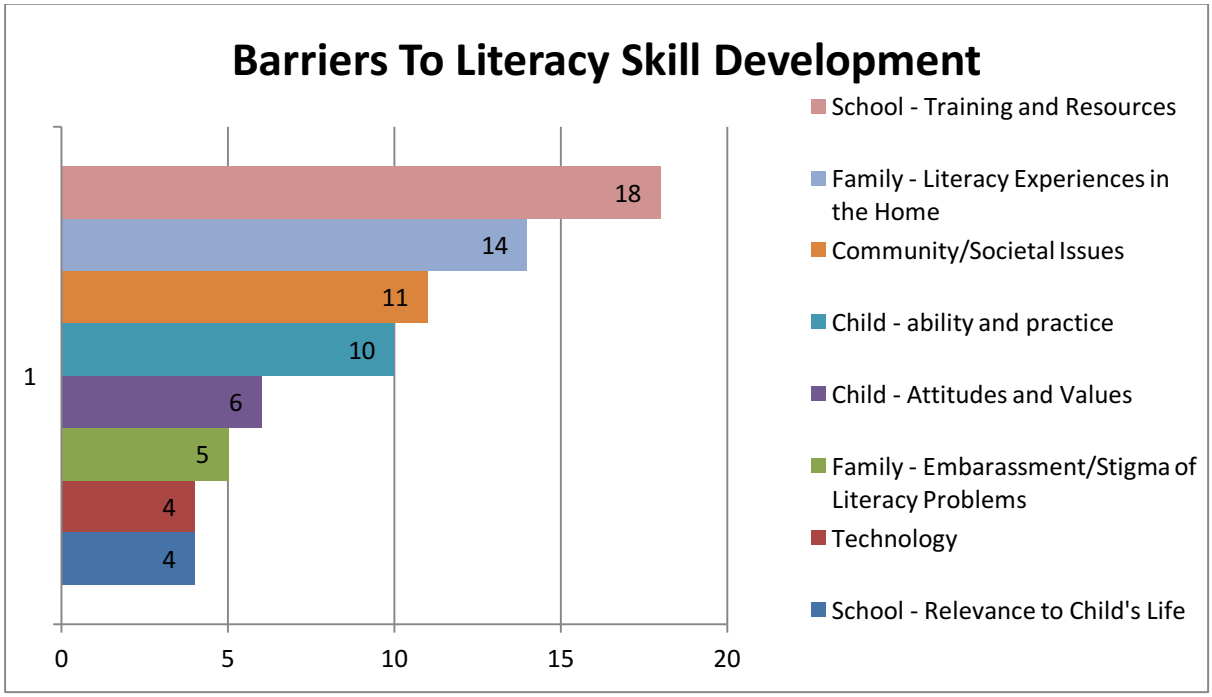


Figure 2: Barriers to Literacy Skill Development

Three barrier statements from each category are displayed in Table 1.

Table 1: Examples of Barrier Statements generated by workshop participants

Barrier Categories	Sample Barrier Statements
Child - Attitudes and Values	• Lack of motivation • Lack of a sense of self-efficacy in relation to reading and writing • Negative attitude in relation to reading
Child - ability and	• Failure to practice reading/literacy skills

practice	• Lack of learning experiences with more academic and specialist language in secondary school subjects • Poor language - oral language, vocabulary knowledge, comprehension
Family - Literacy Experiences in the Home	• Absence of culture of reading and writing for meaning and for pleasure • Limited exposure to the modelling of literacy-rich behaviours (parents, siblings, peers who read) • Limited access to a range of reading material
Family - Embarrassment/Stigma of Literacy Problems	• Embarrassment and resistance to admitting to literacy problems (parents and/or child). • Inability to cope with fear of failure on the part of the child • Hostility to 'special treatment' in a classroom setting
School - Relevance to Child's Life	• Lack of relevance of materials to child's real world literacy experiences • Failure to engage the identities and cultural practices of all learners into school literacy practices • Failure to integrate out of school literacy practices within schools
School - Training and Resources	• Inadequate education - instruction and feedback • Failure of teachers to recognise literacy problems early • Failure to see beyond traditional teaching methods
Community/Societal	• Lack of role models in the community, actually seeing

Issues	people reading • Shortage of volunteer literacy programmes, adult mentoring and community programmes to foster reading • Lack of investment in junior classes: Class numbers too high to give individual attention
Technology	• Currently one-way: Kids can't tell stories based on their interests to anyone (and family) • Unappealing to the child • Hardware too hard/not available: Too expensive? Training for teachers & family/kids? (not accessible)

A number of significant barriers to literacy skill development emerged. Workshop participants noted that children can experience a lack of a sense of self-efficacy in relation to reading and writing (see Schunk & Zimmerman, 2007; Zimmerman & Bandura, 1994), and difficulties with attention, memory, comprehension, and the ongoing practice of reading skills. They felt that there may also be a lack of relevance of school materials to a child's real world literacy experiences. Other barriers included inadequate resources, training for teachers, and instruction to foster reading skills both in the school and home environments; limited experience with print and reading material during early development (see Burns et al., 1999; Snow et al., 1999); and an inadequate array of literacy-promoting material in the home (see Snow et al., 1999).

Also highlighted was the potential embarrassment and resistance to admitting to literacy problems both on the part of parents and children; an inability to cope with fear of

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

failure on the part of the child; and hostility to 'special treatment' in a classroom setting. On a cultural level, it was noted that barriers to literacy included the potential devaluing of literature within civil society; an increasingly image-focused media; a shortage of volunteer literacy programmes, adult mentoring and community programmes to foster reading; and too few role models in the community, where children would actually see people reading (see Purcell-Gates, 1996).

In relation to technology, one barrier identified is that the delivery of literacy initiatives is often one-way, for example, children cannot always tell stories based on their interests and experience. This act of creating and constructing a story may be a powerful route to literacy skill development (Cassell, 2004). Also, workshop participants noted that technology may reinforce the reduction of physical interaction and engagement in the reading experience. Technology may also be unappealing to the child, inaccessible or too expensive for them to access.

Options to overcome barriers

While these and other barriers highlighted many challenges to literacy skill development, during the next stage of the workshop, our expert working group collectively identified 265 options that could help to overcome these barriers. The number of options generated for each barrier category can be seen in Figure 3.

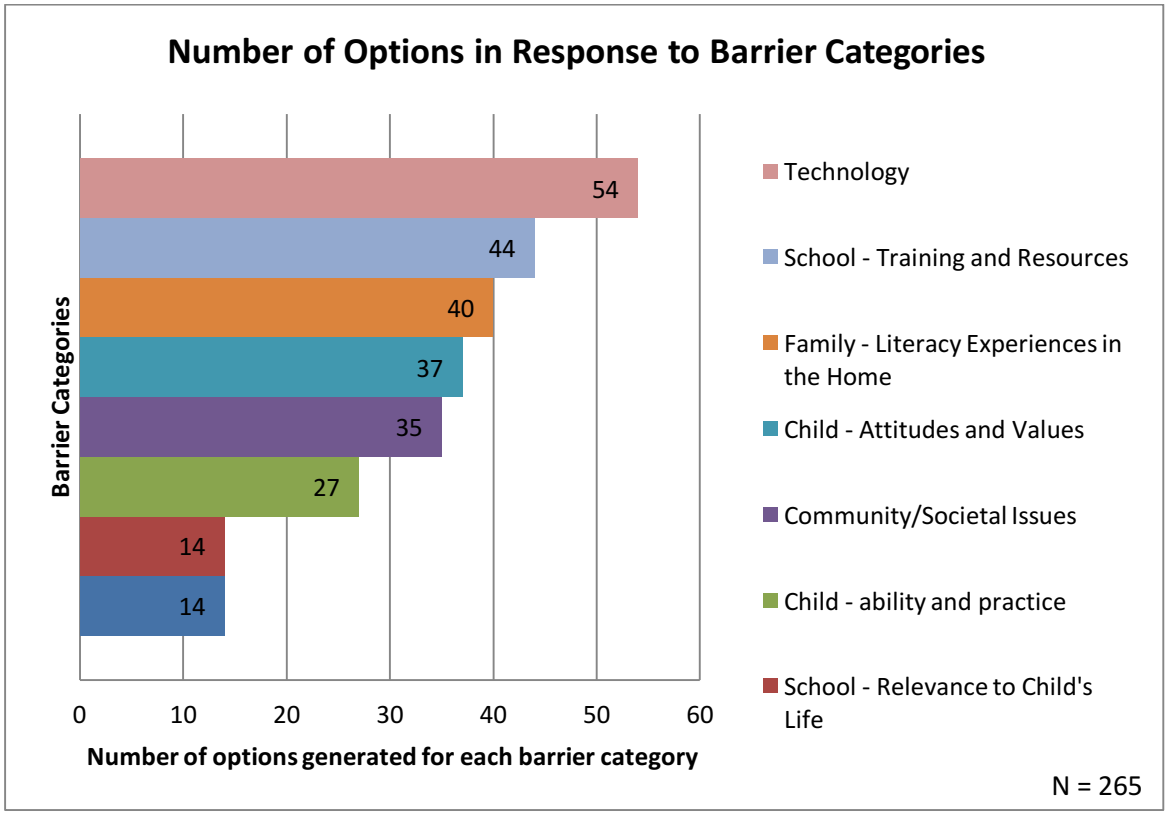


Figure 3: Number of options in response to each barrier category

A sample of these options, along with sample barriers from the corresponding category, can be seen in Figure 4.

Figure 4: Sample of proposed options to overcome barriers to literacy development

User Stories and Specific Q-Tales Platform User Needs

The initial options proposed by workshop participants opened the possibility space for creative thinking about specific usage scenarios and key needs and requirements of users of the Q-Tales Platform. A sample scenario read by workshop participants can be seen in Figure 5.

Scenario 1: Hannah and **Peter** are **mother** and **son**. They have recently purchased an **iPad**. Hannah wants an educational app for the device, to help encourage Peter's **literacy development, reading and creativity**. She wants a technology that will enable her and Peter, who is eight years old, to **create stories together**. Peter loves sitting with her to read together, talk about and make up different stories and characters, and when he learns new words. She wants a technology that will help them both to **create fun and interactive stories**, where **text: vocabulary and sentences** can be combined with **images, sounds and music**. Peter wants something **fun**. He wants a technology that will support him to create stories with **moving images, pictures, animations** - where he can see his **stories come to life**. He also wants a technology where he can **record** his own **voice** and **narrate stories** and **perform characters' dialogue and voices**. Hannah and Peter also want to see other multimedia stories and they want to be able to choose from a **menu of characters and media resources** so they do not have to start from a blank page. They want a technology that is **visually appealing** and **easy-to-use**, and they want to **share** their **stories and books** with other parents and children online. Hannah and Peter download the Q-Tales app to their iPad. They see that there are different genres, landscapes, scenes and characters available that they can use to create story templates. They can then add interactive features to these templates including ready-made media from the Q-Tales website, or they can add their own self-generated content within the templates. Uploading their finished book to the Q-Tales website, they can share the final version of their story online with other users, children and parents.

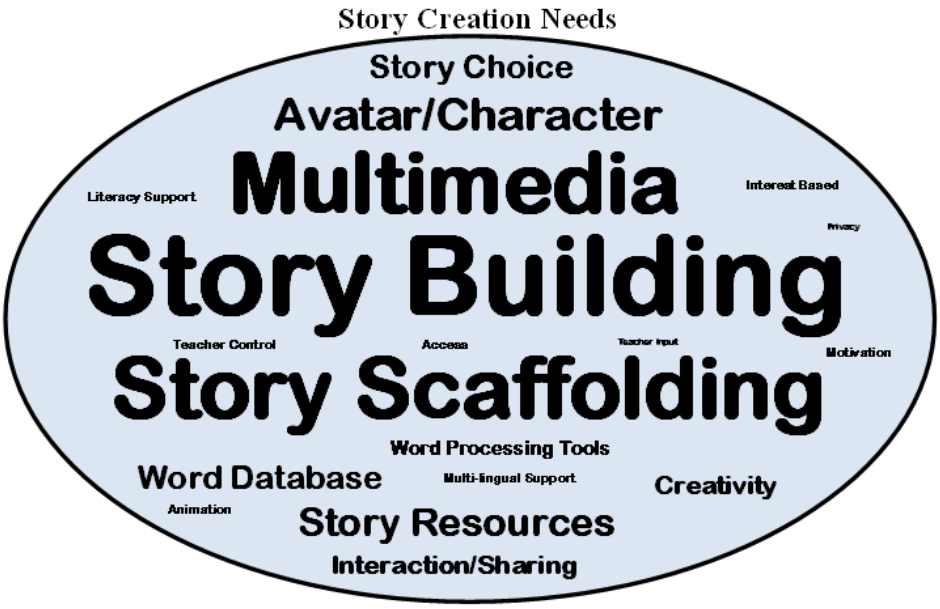
Figure 5: Sample scenario

Building on the barriers to literacy skill development, and the options to overcome these barriers, workshop participants generated an extensive range of 1) Story Creation needs, 2) Interaction Design needs, and 3) Learning/Assessment Tool needs in response to specific scenarios.

Story Creation Needs

A total of 93 story creation needs were generated by the participants. These needs were coded and organised into 20 categories. These categories are presented in Figure 6 as a word cloud, to demonstrate graphically the frequency of needs suggested by the workshop

participants in each category: the larger the word, the greater the number of items in that category. The legend beneath the word cloud gives an actual frequency count for items coded to each category.



Frequency of story creation needs categories represented in diagram:									
Story building	17	Story resources	6	Creativity	4	Animation	2	Motivation	2
Story scaffolding	13	Word database	5	Word processing tools	3	Multi-lingual support	2	Teacher input	1
Multimedia	13	Story choice	5	Access	2	Interest based	2	Privacy	1
Avatar/character	7	Interaction/Sharing	4	Teacher control	2	Literacy support	2		

Figure 6: Story Creation Needs Categories by frequency

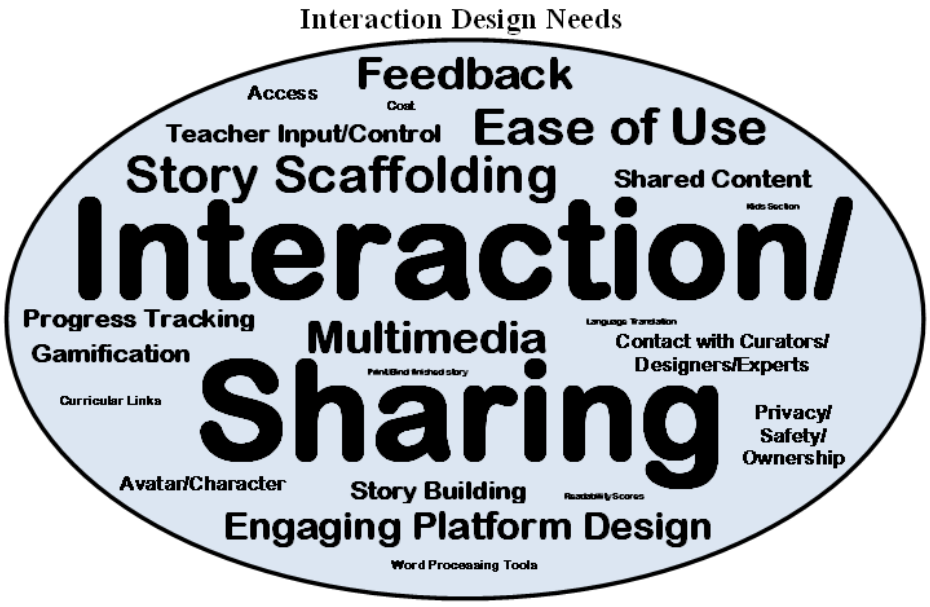
The top five categories in Story Creation Needs were *story building*, *multimedia*, *story scaffolding*, *avatar/character* and *story resources*. *Story building* needs included tools and options that give children story ideas and help them to create their own stories. One participant suggested "A bank of story ideas to help students get their stories started." Others suggested "Online idea prompts/beginning of story" and "Give the ending – students have to develop the story." Many participants also suggested that scaffolding should be structured into the Q-Tales platform, such as "To be [able] to access a template that is relevant to a topic", "A place to get help with my story when I get stuck," and "Ready-made story-boarding

templates." *Multimedia* also featured highly in the story creations needs section. Participants suggested the need for "Students to create multimedia texts." Multimedia mentioned by participants under this category included "Selection of sound effects," "Audio clips," "The facility to embed photo/video/audio/text" and "To record voiceover and sound effects."

The *avatar/character* category had to do with suggestions regarding the use of avatars or characters in the user interface, as well as the ability to create or design one's own characters, or to choose from stock characters provided on the platform. Suggestions included "Selection of options re avatars, characters", "A programme that creates an avatar based on my descriptions", and "To use some copyright-free yet interesting characters." Finally, the *story resources* category included suggestions such as "To be able to add to the resources already available", access to "Copyright free images, music, sound effects," and access to a "Bank of photos."

Interaction Design Needs

Participants were also asked to generate interaction design needs they considered important for the Q-Tales platform. A total of 104 interaction design needs were identified. These were coded and categorised into 22 categories, illustrated in Figure 7.



Frequency of interaction design needs categories represented in diagram:							
Interaction/Sharing	25	Gamification	4	Avatar/character	3	Kids section	1
Ease of use	8	Progress tracking	4	Contact with curators/designers/experts	3	Language translation	1
Story scaffolding	8	Shared content	4	Privacy/safety/ownership	3	Print/bind finished story	1
Multimedia	7	Story building	4	Cost	2	Readability scores	1
Feedback	7	Teacher input/control	4	Curricular links	2		
Engaging platform design	6	Access	3	Word processing tools	2		

Figure 7: Interaction design needs categories and frequencies

The interaction design needs most frequently mentioned by participants fell under the categories of interaction/sharing, story scaffolding, ease-of-use/usability of the platform, multimedia and feedback.

Participants mentioned interaction or sharing with others most frequently in this category of needs. This interaction included sharing with others through story sharing and idea sharing. They thought it would be important for students using the platform in an educational setting to share with their parents, their teachers and with each other. They also thought children using the platform ought "To be able to share my stories/read others stories." They felt that users of the platform should be able to "Collaborate in a group or a shared story" and that users should be able "to comment on finished stories [of] others."

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Story scaffolding also ranked high with the workshop participants in the interaction design needs category. They suggested the use of templates, wireframes and narrative structures to assist users of the platform to create their stories. They stated that the platform should include a "Clear workflow path/checklist," and that guidelines should be included for forms of writing, such as "…Sonnets, Novellas, Limericks, etc." The third most frequently mentioned interaction design need was *ease of use*. They felt that the platform should be "A friendly, easy-to-use technology that is intuitive," and "A tool which is suited to my ability."

The use of multimedia elements such as images, music and sound was also mentioned frequently in the interaction design needs category. Participants suggested the need to "Be able to use my own music", "…download/include my own photos/music" and the need to have "Access to a wide variety of multimodal resources." The category of feedback included the ability to get feedback "…from users – teachers, students, others" using the platform. Participants also suggested that there should be "A range of ways to give feedback (written, oral, visual)" and that there should be some way for teachers using the platform with their students to "…see how other teachers assess/give feedback."

Learning/Assessment Tool Needs

Finally, participants were asked to generate needs to do with learning/assessment tools. Participants generated 165 Learning/Assessment tool needs, which were categorised into 36 categories, shown in Figure 8.

Frequency of learning/assessment tool needs categories represented in diagram:							
Curricular links	21	Gamification	6	Story topic choice	2	Literacy support through games	1
Interaction/Sharing	15	Personal relevance	5	Teacher training	2	Multicultural	1
Literacy development	14	Access	5	Story scaffolding	2	Student choice of finished e-books	1
Engaging platform design	12	Interactive assessment	5	Ranking of finished stories	2	Searchable stories	1
Progress tracking	11	Story building	3	Story collaboration	2	Personal storage	1
Story resources	9	Teacher input/control	3	Metacognition	2	Student independence	1
Feedback	9	Multimedia	3	Technical support	2	Self-assessment facility	1
Privacy/safety/ownership	8	Shared creative space	2	Content creation	2	Age appropriate tools	1
Ease of use	6	Avatar/character	2	Creativity	1	Print final story	1

Figure 8: Learning/Assessment tool needs categories

The largest category in the learning assessment tool needs was curricular links. Some of the needs mentioned by participants in this area included “To use media to help bring relevance to English/historical context”, “To be able to use the website to fit with my lesson objectives” and “To practice using the new vocabulary in our history text book.” Interaction and sharing also figured high in this category of needs. Participants stated that users should be

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

able “To share the story with my friends”, to “Facilitate interactive story circles,” and “To know how I can create a page within this platform to upload and share my students writing.”

Engaging platform design suggestions dealt with the need to create a platform that would provide “A colourful, game-like experience”, a “Stable online platform with technical support” and “A technology interface that is user-friendly.” Participants also suggested an interface design that included “Software with multiple pathways, differentiated”, and “A platform that is not device specific.”

Participants also suggested needs dealing with progress tracking. Some wanted “To be able to use this website to assess progress”, while others suggested that the platform should be able “…to provide for portfolios to be created.” Finally, the need for “Assessment embedded (like Khan Academy)” was also mentioned.

It is important to note that some needs were mentioned across more than one needs category. These included Interaction/Sharing, Story Scaffolding and the use of Multimedia. In summary, the most frequently cited needs across the three needs categories are presented in Figure 9.

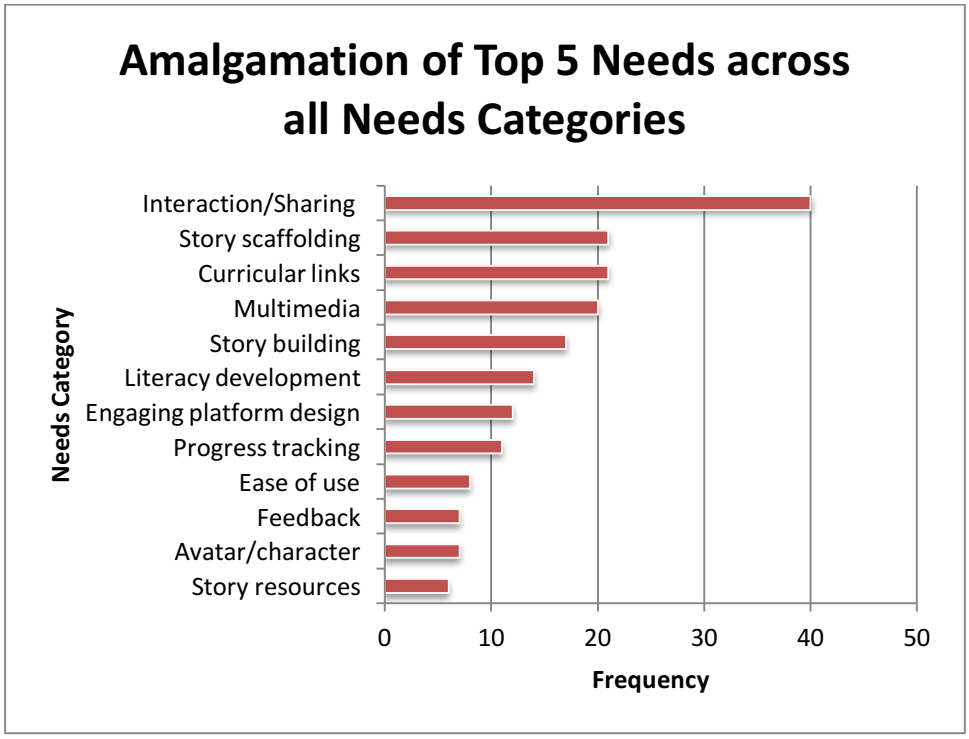


Figure 9: Amalgamation of top 5 categories across the three needs categories

Overall, the results of our collective intelligence workshop highlight a wide range of programmable user needs and requirements that align with pedagogical priorities and affordances identified in the mainstream educational, psychology, learning sciences and design-based research literature.

Presentation of Needs to the Q-Tales Consortium

In May, 2015, the Q-Tales consortium met in London to present the user needs generated in the workshops held across Europe. During this step in the process, a dialogue between the software development team and collective intelligence team ensued, in an attempt to get the balance right between what users want and what developers can do, which as Cohn (2004) noted, can be very difficult. The needs generated in each of the workshops were amalgamated into a spreadsheet by the consortium director and over two days of discussion,

developers, coders and other team members went through the list to rank the needs in order to decide what was feasible to code in the first iteration of the Q-Tales platform. The needs were ranked as: High Impact and Feasible, High Impact but Less Feasible, Less Impact and not Feasible, and Less Impact and Feasible. The needs that were deemed high impact and feasible were targeted for incorporation into the initial platform design. Those deemed as high impact but less feasible were tagged for possible incorporation into the platform at future phases of development.

Conclusion

As noted previously, the Q-Tales project has as its major goal the enhancement of literacy skills in children. The collective intelligence of our stakeholders was used to inform priority design issues, constraints and requirements. As a result of the design process thus far, we appreciate the many design challenges and risks involved in the creation of an e-book platform for children, including:

1. The challenge of translating pedagogical principles and specific needs and activities into a usable set of templates, activities, and design structures for e-book designers.
2. Aligning a potentially complex set of pedagogical framework ideas with a curation strategy that is relatively easy to manage and sustain.
3. Creating a technology design strategy that allows for different pedagogical innovations to be introduced at different phases of the Platform design process.
4. Prioritizing key pedagogical innovations as the primary starting point in the Platform design process.
5. Designing the usability of the Platform such that it addresses and facilities intuitively the diverse user requirements of multiple types of users.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Moving forward, we are optimistic that we can embrace these challenges and design a platform environment that responds directly to the needs of users and results in the design of a new generation of e-books that foster and accelerate the development of literacy skills in children in a fun and engaging way.

At this point in the technology design process, the appropriation of CI methodologies, along with user story methods, has enabled the Q-tales design consortium to elicit and prioritise – in a principled and systematic fashion - key system user constraints and requirements. As the Q-Tales platform serves a dual purpose, both as an educational and curatorial system, whereby e-books are not only authored but also evaluated, the design work for the initial Q-Tales system has entailed engaging with a wide range of stakeholders, representing a diverse array of end-user needs and requirements. CI, augmented with user story methods, has supported the Q-Tales design consortium to engage critically with these manifold requirements and develop a nascent e-book ecosystem that embodies the key design requirements emerging from the systematic collaboration with key stakeholders while concomitantly honouring fundamental design laws concerning variety, parsimony and saliency (Ashby, 1958).

The Q-Tales Authoring Tool offers an easy-to-use interface with powerful and sophisticated authoring features which can be used to create e-books that can be, with a single click, published for many different digital platforms (iOS, Android, Windows and Mac OS). The authoring interface makes use of pedagogical mini games, gamification techniques and a curation mechanism to create and share quality e-books. The Q-tales Authoring Tool (Figure 10) is not intended only for professionals, but also for parents, teachers and other adults, who want to create e-books for, or with their children/pupils.

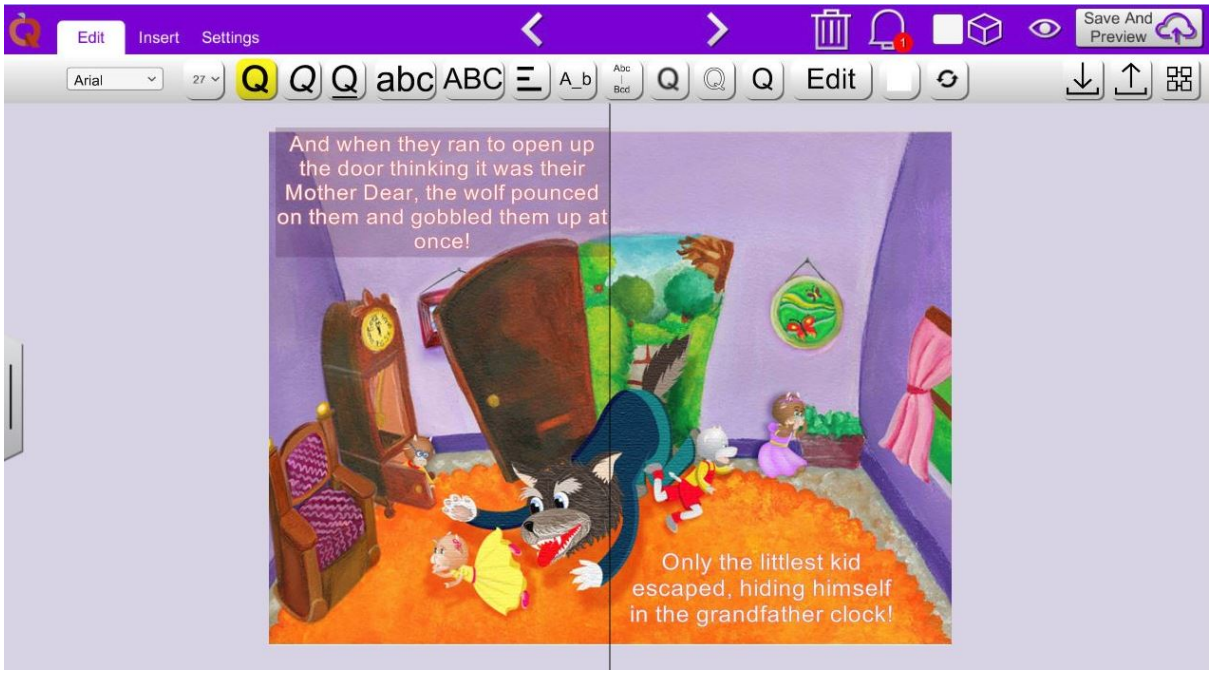


Figure 10: Q-Tales authoring tool

The limitations of the design-based research work at this juncture are, that although a detailed and rich set of user constraints and needs have been identified and prioritised, the initial conceptual design and technological implementation are still at an early, formative stage in development, and the initial design work has been undertaken with a purposive, relatively small user group and intensive but small number of workshops. The integrated use of CI and user story methods has enabled the Q-Tales project consortium to conceptualise and design a system. However, further design and evaluation are warranted – again using CI and user story methods – to develop and refine further the Q-Tales e-book ecosystem. Notwithstanding, from our initial experience exploring and employing this methodology, collective intelligence, augmented by user story methods, has much to commend it as a generative and inclusive, systematic design approach to the conceptualisation and development of innovative technologies to support children's literacy development and enhancement.

References

Abras, C., Maloney-Krichmar, D., & Preece, J. (2004). User-centered design. In W. S. Bainbridge (Ed.), *Berkshire Encyclopedia of Human-Computer Interaction* (Vol. 37, pp. 445–56). Thousand Oaks, CA: Sage Publications. http://doi.org/10.1.1.94.381

Alberts, H. (1992). Acquisition: Past, present and future. In *Institute of Management Sciences and Operations Research Society*. Orlando, Florida: Institute of Management Sciences and Operations Research Society.

Amulya, J. (2015). *Digital4Literacy: Leveraging interactive literacy for low-income families through access to e-books*. Oakland, CA. Retrieved from http://litlab.org/wp-content/uploads/2015/03/research_brief.pdf

Ashby, W. R. (1958). Requisite variety and its implications for the control of complex systems. *Cybernetica*, *1*(2), 1–17. http://doi.org/10.1007/978-1-4899-0718-9_28

Baetjer, J. H. (1998). *Software as capital: An economic perspective on software engineering*. Hoboken, NJ: Wiley-IEEE Computer Society Press.

Broome, B. J., & Chen, M. (1992). Guidelines for computer-assisted group problem-solving: Meeting the challenges of complex issues. *Small Group Research*, *23*(2), 216–236. http://doi.org/10.1177/1046496492232005

Broome, B. J., & Cromer, I. L. (1991). Strategic planning for tribal economic development: A culturally appropriate model for consensus building. *International Journal of Conflict Management*, *2*(3), 217–234. http://doi.org/http://dx.doi.org/10.1108/eb022700

Broome, B. J., & Fulbright, L. (1995). A multi-stage influence model of barriers to group problem solving. *Small Group Research*, *26*(1), 25–55. http://doi.org/10.1177/1046496495261002

Burns, M. S., Griffin, P., & Snow, C. E. (1999). *Starting out right: A guide to promoting children's reading success*. (M. S. Burns, P. Griffin, & C. E. Snow, Eds.). Washington D.C.: National Academy Press. Retrieved from http://www.nap.edu/catalog/6014/starting-out-right-a-guide-to-promoting-childrens-reading-success

Bus, A. G., van Ijzendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, *65*(1), 1–21. http://doi.org/10.3102/00346543065001001

Carroll, J. M. (2000). *Making use: Scenario-based design of human-computer interactions*. Cambridge, MA: MIT Press.

Cassell, J. (2004). Towards a model of technology and literacy development: Story listening systems. *Journal of Applied Developmental Psychology*, *25*(1), 75–105. http://doi.org/10.1016/j.appdev.2003.11.003

Chall, J. S. (1983). *Stages of reading development* (1st ed.). New York: McGraw Hill.

Chall, J. S. (1996). *Stages of reading development* (2nd ed.). San Diego, CA: Harcourt Brace College Publishers.

Christakis, A. N. (1987). Systems profile: The Club of Rome revisited. *Systems Research*, *4*(1), 53–58. http://doi.org/10.1002/sres.3850040107

Cohn, M. (2004). *User stories applied for agile software development*. Boston, MA: Addison-Wesley.

Coke, J. G., & Moore, C. M. (1981). Coping with a budgetary crisis: Helping a city council decide where expenditure cuts should be made. In S. W. Burks & J. F. Wolf (Eds.), *Building city council leadership skills: A casebook of models and methods* (pp. 72–85). Washington, DC: National League of Cities.

Colombo, L., & Landoni, M. (2014). A diary study of children's user experience with e-books using flow theory as framework. In *IDC '14 Proceedings of the 2014 conference on Interaction design and children* (pp. 135–144). Aarhus, Denmark: ACM. http://doi.org/10.1145/2593968.2593978

Colombo, L., Landoni, M., & Rubegni, E. (2012). Understanding reading experience to inform the design of ebooks for children. In *Proceedings of the 11th International Conference on Interaction Design and Children IDC 12* (pp. 272–275). Bremen, Germany: ACM. http://doi.org/10.1145/2307096.2307143

Colombo, L., Landoni, M., & Rubegni, E. (2014). Design guidelines for more engaging electronic books : Insights from a cooperative inquiry study. In *IDC '14 Proceedings of the 2014 Conference on Interaction Design and Children* (pp. 281–284). Aarhus, Denmark: ACM. http://doi.org/10.1145/2593968.2610472

Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.

Dalton, B., & Proctor, P. (2007). Reading as thinking: Integrating strategy instruction in a universally designed digital literacy environment. In D. S. McNamara (Ed.), *Reading*

comprehension strategies: Theories, inventions, and technologies (pp. 421–439). Mahwah, NJ: Lawrence Erlbaum Assoc Inc.

de Jong, M. T., & Bus, A. G. (2003). How well suited are electronic books to supporting literacy? *Journal of Early Childhood Literacy*, *3*(2), 147–164. http://doi.org/10.1177/14687984030032002

Department of Education and Skills. (2011). *Literacy and Numeracy for Learning and Life: The National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020*. Dublin, Ireland. Retrieved from http://www.education.ie/en/publications/policy-reports/lit_num_strategy_full.pdf

Dwyer, C. P., Hogan, M. J., Harney, O. M., & O'Reilly, J. (2014). Using interactive management to facilitate a student-centred conceptualisation of critical thinking: A case study. *Educational Technology Research and Development*, *62*(6), 687–709. http://doi.org/10.1007/s11423-014-9360-7

Feeg, R. (1988). Forum of the future of pediatric nursing: Looking toward the 21st century. *Pediatric Nursing*, *14*(1), 393–396.

Fox, D., Sillito, J., & Maurer, F. (2008). Agile methods and user-centered design: How these two methodologies are being successfully integrated in industry. In *Agile 2008 Conference* (pp. 63–72). Toronto, Canada: IEEE. http://doi.org/10.1109/Agile.2008.78

Groarke, J. M., & Hogan, M. J. (2015). Enhancing wellbeing: An emerging model of the adaptive functions of music listening. *Psychology of Music* . http://doi.org/10.1177/0305735615591844

Harlaar, N., Dale, P. S., & Plomin, R. (2007). From learning to read to reading to learn : Substantial and stable genetic influence. *Child Development*, *78*(1), 116–131. http://doi.org/10.1111/j.1467-8624.2007.00988.x

Hess, R. D., & Holloway, S. (1983). Family and school as educational institutions. In R. D. Parke (Ed.), *Review of child development research, 7: The family* (pp. 179–222). Chicago, Illinois: University of Chicago Press.

Hogan, M.J., et al. (In Press). Governance, Transparency and the Collaborative Design of Open Data Collaboration Platforms: Understanding Barriers, Options, and Needs. in A. Ojo & J. Millard (Eds.), *Government 3.0 - Next Generation Government Technology Infrastructure and Services: Opportunities, Enabling Technologies, Challenges and Roadmaps*. Springer

Hogan, M. J., Johnston, H., Broome, B., McMoreland, C., Walsh, J., Smale, B., … Groarke, A. M. (2015). Consulting with citizens in the design of wellbeing measures and policies: Lessons from a systems science application. *Social Indicators Research*, *123*(3), 857–877. http://doi.org/10.1007/s11205-014-0764-x

Indrisano, R., & Chall, J. S. (1995). Literacy development. *Journal of Education*, *177*(1), 63. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9605020050&lang=zh-tw&site=ehost-live

Jeffries, R. (2001). Essential XP: Card, conversation, confirmation. Retrieved November 23, 2015, from http://ronjeffries.com/xprog/articles/expcardconversationconfirmation/

Keever, D. B. (1989). Cultural complexities in the participative design of a computer-based organization information system. In *International Conference on Support, Society and Culture: Mutual Uses of Cybernetics and Science*. Amsterdam, The Netherlands.

Korat, O. (2010). Reading electronic books as a support for vocabulary, story comprehension and word reading in kindergarten and first grade. *Computers and Education*, *55*(1), 24–31. http://doi.org/10.1016/j.compedu.2009.11.014

Labbo, L., & Kuhn, M. (2000). Weaving chains of affect and cognition: A young child's understanding of CD-ROM talking books. *Journal of Literacy Research*, *32*(2), 187–210. http://doi.org/10.1080/10862960009548073

Langer, J. A. (1999). *Beating the odds: Teaching middle and high school students to read and write well*. *CELA Research Report Number 12014*. Albany, NY. Retrieved from http://www.albany.edu/cela/reports/langer/langerbeating12014.pdf

Lawrence, J. F., White, C., & Snow, C. E. (2011). Improving reading across subject areas with word generation. *CREATE Brief*, (September), 1–6. Retrieved from http://www.cal.org/create/publications/briefs/improving-reading-across-subject-areas-with-word-generation.html

Liebeskind, K. (2015a). He reads, she reads, e-reads! Understanding the e-reading habits of children aged 2- 13. In *Launch Kids* (pp. 11–13). New York: Launch Kids 2015. Retrieved from http://media.publishersmarketplace.com/wp-content/uploads/2015/01/LaunchKids2015.pdf

Liebeskind, K. (2015b). *The ABCs of kids & e-reading: Volume 4*. New York: Digital Book World. Retrieved from http://store.digitalbookworld.com/the-abcs-of-kids-e-reading-volume-4-ebook

MacArthur, C. D., Ferretti, R. P., Okolo, C. M., & Cavalier, A. R. (2001). Technology applications for students with literacy problems: A critical review. *Elementary School Journal*, *101*(3), 273–301. http://doi.org/10.1086/499669

Norman, D. A., & Draper, S. W. (1986). *User-centered system design: New perspectives on human-computer interaction*. Hillsdale, NJ: Lawrence Earlbaum Associates.

Organisation for Economic Co-operation and Development. (2013). *Pisa 2015 draft reading literacy framework*. Paris. Retrieved from http://www.oecd.org/pisa/pisaproducts/Draft PISA 2015 Reading Framework .pdf

Organisation for Economic Co-operation and Development. (2014). *PISA 2012 results in focus: What 15-year-olds know and what they can do with what they know*. Paris. Retrieved from https://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf

Picton, I., & Clark, C. (2015). *The impact of ebooks on the reading motivation and reading skills of children and young people: A study of schools using RM books*. London: National Literacy Trust. Retrieved from http://www.literacytrust.org.uk/assets/0002/9076/The_Impact_of_Ebooks_final_report.pdf

Pisha, B., & Coyne, P. (2001). Smart from the start: The promise of universal design for learning. *Remedial and Special Education*, *22*(4), 197–203. http://doi.org/10.1177/074193250102200402

Plowman, L., & Stephen, C. (2003). A "benign addition"? A review of research on ICT and pre-school children. *Journal of Computer Assisted Learning*, *19*(2), 149–164. http://doi.org/10.1046/j.0266-4909.2003.00016.x

Pressman, R. S. (2005). *Software engineering: A practitioner's approach* (6th ed.). New York, NY: McGraw-Hill Higher Education.

Purcell-Gates, V. (1996). Stories, coupons, and the TV Guide: Relationships between home literacy experiences and emergent literacy knowledge. *Reading Research Quarterly*, *31*(4), 406–428. http://doi.org/10.1598/RRQ.31.4.4

Rosson, M. B., & Carroll, J. . (2002). Scenario-based design. In J. Jacko & A. Sears (Eds.), *The human-computer interaction handbook: Fundamentals, evolving technologies and emerging applications* (pp. 1032–1050). Mahwah, NJ: Lawrence Erlbaum Associates.

Sato, T. (1979). Determination of hierarchical networks of instructional units using the ISM method. *Educational Technology Research*, *3*, 67–75.

Schunk, D. H., & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly*, *23*(1), 7–25. http://doi.org/10.1080/10573560600837578

Snow, C. E. (2008). What counts as literacy in early childhood? In K. McCartney & D. Phillips (Eds.), *Blackwell handbook of early childhood development* (pp. 274–294). Oxford, UK: Blackwell Publishing Ltd. http://doi.org/10.1002/9780470757703.ch14

Snow, C. E., Burns, M. S., & Griffin, P. (1999). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press. Retrieved from http://files.eric.ed.gov/fulltext/ED416465.pdf

Strangman, N., & Dalton, B. (2005). Technology for struggling readers: A review of the research. In K. Higgins & R. Boone (Eds.), *The handbook of special education technology research and practice* (pp. 545–569). Whitefish Bay, WI: Knowledge by Design.

Sulzby, E. (1985). Children's emergent reading of favorite storybooks : A developmental study. *Reading Research Quarterly*, *20*(4), 458–481. Retrieved from http://www.jstor.org/stable/747854

Thompson Long, B., Hall, T., Hogan, M., & Papastamatiou, N. (In Press). Enhancing Children's Literacy Skills: Designing the Q-Tales ecosystem for children's e-book design and publication. *Literacy*.

United Nations Educational Scientific and Cultural Organization. (2014). *EFA global monitoring report 2013/4: Teaching and learning: Achieving quality for all*. Paris. Retrieved from http://unesdoc.unesco.org/images/0022/002256/225660e.pdf

Warfield, J. N. (1994). *A science of generic design: Managing complexity through systems design* (2nd ed.). Salinas, CA: Intersystems.

Warfield, J. N. (2006). *An introduction to systems science*. Singapore: World Scientific.

Wehmeyer, M. L., Smith, S. J., Palmer, S. B., Davies, D. K., & Stock, S. (2004). Technology use and people with mental retardation. In L. M. Glidden (Ed.), *International Review of Research in Mental Retardation* (Vol. 29, pp. 291–337). Cambridge, MA: Elsevier Academic Press. http://doi.org/10.1016/S0074-7750(04)29009-7

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development*, *69*(3), 848–872. Retrieved from

http://web.a.ebscohost.com.libgate.library.nuigalway.ie/ehost/pdfviewer/pdfviewer?sid=51ef6270-3fd4-4083-ac44-a242ee35caf2@sessionmgr4004&vid=5&hid=4201

Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal*, *31*(4), 845–862. http://doi.org/10.3102/00028312031004845

Journal of Literacy and Technology
Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Facilitating Students' Stances toward Technology-Enhanced Reading and Writing in the Classroom

Sarah J. McCarthey, PhD
University of Illinois at Urbana-Champaign
mccarthe@illinois.edu

Katrina Kennett
University of Illinois at Urbana-Champaign
Kennett@illinois.edu

Anna Smith, PhD
Illinois State University
amsmi11@ilstu.edu

Autumn West
University of Illinois at Urbana-Champaign
ajwest85@gmail.com

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Abstract

The study focuses on adolescents' responses to their 8th grade, language arts/social studies teacher's attempts to infuse instruction with networked, digital technology. Drawn from third space theory (Bhabha, 1994), we identify three stances that students took up—accepting, leveraging, and repurposing. Students often expressed an accepting stance to classroom activity and tasks in teacher-sanctioned ways. When students presented a leveraging stance, they marshaled resources from different contexts to pursue their preferences to align with the teacher's intentions. Rarely, students took up a repurposing stance, pushing up against the teacher-sanctioned practices to pursue their own goals. In both leveraging and repurposing stances, we found the potential for third space moments to arise. Barriers to achieving a sustained third space through technology use included the teacher's restricting activities to particular platforms, narrowed curricular orientations, and lack of attention to out-of-school practices. Access to technology and sponsors facilitated students' leveraging out of school knowledge and technology practices, and repurposing of in school tasks and resources.

Classrooms entail highly structured forms of legitimate participation (Freebody, 2013; Leander, 2007); yet, students have ways of working within and resisting classroom norms (Benson, 2010; McCarthey, 2002; Vasudevan, DeJaynes, & Schmier, 2010). Third space theory (Bhabha, 1994; Gutierrez, 2008; Gutierrez, Rymes, & Larson, 1995; Moje et al., 2004) conceptualizes the merging of home, community, and peers (everyday knowledge) with institutional norms (classroom knowledge) to provide a productive cultural space for learning. Within such hybrid spaces where neither the monologic script of the teacher nor the counterscript of the student holds sway, students reframe their engagement through interactive writing (Britsch, 2005); develop their identities through the inclusion of out-of-school activities (Leander, 2002); and/or become interested in technology and science (Eisenhart & Edwards, 2004). As Moje et al. (2004) argue, teachers can create third spaces by explicitly connecting students' out-of-school knowledge and practices to school content. Dredger, Woods, Beach, and Sagstetter (2010) found that integrating out-of-school digital practices into the curriculum forms a third space and improves writing pedagogy.

Technologies, and the social practices that evolve with online, networked tools, hold promise for developing third spaces (Black, 2009; Curwood, Magnifico & Lammers, 2013; Skerrett, 2010). Madden, Lenhart, Duggan, Cortesi and Gasser (2013) found that 95% of teens are on the internet, most often with mobile devices. Doering, Beach, and O'Brien (2007) have recommended a variety of ways to infuse multimodal tools and digital literacies into the English classroom. However, tensions between institutionalized learning environments and adolescents' histories may arise when mobile technologies are used in classrooms (Ehret & Hollett, 2014). These tensions may be due to the differences in ways that teachers use technology in the classroom versus students' out-of-school use. For example, in her study of the teaching of digital tools in Australia, Honan (2008) found that

teachers focused on technical skills and did not consider students' out-of-school proficiencies such as gaming. Purcell, Heaps, Buchanan and Friedrich (2013) found through a national survey of National Writing Project (NWP) and Advanced Placement teachers that they used digital tools such as Google Docs, search engines, websites and blogs in their classrooms for students to conduct research; however, the tools were rarely used to promote creation, collaboration, or publication. Hutchison and Reinking's (2011) survey of teachers in the International Literacy Association found that most teachers considered using presentation tools such as PowerPoint and interactive whiteboards as integrating technology into their classrooms. These studies suggest that technology in classrooms is continuing a transmission model.

Barriers to teachers' integration of technology in more creative ways may include lack of consistent access to computers, lack of familiarity in using digital technology themselves, or insufficient professional development for connecting their own use of technology into their teaching repertoires (Inan & Lowther, 2010). In their study of 21 teachers participating in a NWP Summer Institute (SI), Howell, Kaminski and Hunt-Barron (2016) identified extrinsic barriers such as lack of hardware preventing daily use in classrooms. Additionally, the professional development during the SI was limited to 3% of their overall experience. Thus, teachers expressed a desire to use more technology with their students, but were not confident in their abilities to use new tools to enhance their instruction. When professional development for technology occurs, it is often separated from curriculum (Lim, So & Tan, 2010). Burnett and Merchant (2011) identify curricular demands and privileging of print over digital tools as continual problems with technology integration. These external factors may influence teachers' ability to successfully integrate technology into the classroom and go beyond the transmission model in their literacy teaching.

Additionally, Johnson (2016a) argues that the focus on technology integration is limiting because it does not account for how teachers are incorporating conceptual practices related to new literacies. In her study of teachers participating in a Summer Institute, Johnson's (2016b) analysis of secondary English teachers' talk and multimodal concept maps showed contradictions--teachers acknowledged the power and benefits of digital technologies yet continued to conceptualize writing in traditional ways; the study demonstrates that "teaching writing with new technologies requires a shift in how they conceptualize the teaching of writing in their classrooms" (p. 55).

In contrast to teacher's technology use in classrooms, youth are overwhelmingly engaged in participatory cultural models of literacy practice outside of school, using a variety of digital tools for communication, creation of artifacts, and performance (Jenkins, Ito & boyd, 2016). Abrams and Russo (2015) found that adolescents generate, evaluate, and experiment with both online and offline artifacts to participate in both social and academic practices. Youth participate in online fan fiction sites that afford both anonymity and an audience, crossing traditional audience boundaries (Lammers & Marsh, 2015). The studies on adolescents' use of digital tools in and out of school have lead many scholars (Erstad & Sefton-Green, 2013; Ito, et al., 2013) to suggest that students' technology use in classrooms needs to be understood within the broader "lifewide" learning spectrum, in relation to their interests and purposes for reading and writing. At the same time, we need to understand students' uptake and stances toward teachers' technology use within classrooms.

Expanding on McCarthey's (2002) categories of appropriating (fulfilling teachers' expectations), resisting (finding ways around curriculum), and transforming (altering norms to create spaces to be successful) classroom expectations, this study identified ways 8th grade students' in-school participation using technologies in a humanities block was influenced by

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

out-of-school practices as well as the teacher's curricular expectations. We focused on students' networked digital media use as facilitated by a range of instructional technologies offered by the teacher. We asked: (a) What stances are students taking toward sanctioned technology use? and (b) What classroom factors facilitate and inhibit these stances? Through the lens of third space, the study demonstrated that youth accept, leverage, and repurpose tasks and technology use to achieve personal transcontextual literacy goals. We further trace the in-school and out-of-school influences that contributed to students' stances.

Methods

Participants

Members of the research team had a long-standing relationship with City Middle School (names of school and teacher are pseudonyms) and sought to examine teacher and student literacy practices in a technologically rich school environment. An 8th grade teacher, Mrs. Palmer, received a class set of Chromebooks in concert with a schedule shift combining language arts and social studies within a smaller middle school team. Mrs. Palmer's classes reflected the demographics of the ethnically diverse school (12% Hispanic, 37% Black, 39% White). Sixty nine percent of the students were low-income; the school performed below the state average on reading tests. The participants reflected the school diversity with the exception of gender; 15 of the 28 girls and only 1 of the 17 boys from the two classes had parental permission to be interviewed. See Table 1 for a short description of a representative set of the 16 participants, their technology use, literacy interests, and sponsors (Brandt, 2001) for those literacy interests, as we came to know them through the interviews.

Table 1. Participants' Technology Use, Sponsors, and Preferences

Pseudonym	Ethnicity/ Race	Gender	Out-of-School Digital Technology Use	Literacy Sponsors	Personal Interests/ Preferences
Greg	AA	M	social media	Mother, Father, Aunt	reading adventure books, basketball, drawing, and social justice
Maddie	W	F	Laptop, school assignments	Mother, Father, Sister, Grandmother	reading biographies and mystery, journaling, writing poetry
Aaqilah	Middle Eastern	F	GoodReads website	Mother, Father, Brother, Instructor	reading science fiction, fantasy and historical fiction, writing poetry and stories
Ava	AA	F	social media, blog	Mother	reading nonfiction, drawing, creating blog
Jillian	W	F	smart phone - texts and note app	Mother, Father, Cousin	reading romance and comedy, writing dramas
Serena	AA	F	Netbook tablet, Garage Band, online fanfiction	Mother, Brother, Cousin, Friends, Instructor	singing, sports, writing songs and stories
AA=African American W=White F=Female M=Male					

Mrs. Palmer was an experienced middle school teacher. A former participant in the local chapter of the National Writing Project, she had published poetry and was eager to incorporate technology into her classroom. As was the norm in her school, Mrs. Palmer designed the classroom curriculum by specific texts (ex. *The Monkey's Paw*, *The Tell Tale Heart, House on Mango Street* in Language Arts, *Lyddie* in Social Studies), topics (ex. the Space Race) and genred activities (e.g., a eulogy for an animal, a debate between W. E. B DuBois and Booker T. Washington). The teacher mainly used four digital platforms in the

course of her instruction: a classroom blog, Google Drive (predominantly Google Docs and Google Slides), Scholar (an online writing environment that facilitates peer review), and the emerging platform Google Classroom. She had a cart of Chromebooks positioned near the door of the classroom, from which students would select their assigned computer when they entered the room. Throughout the study, student desks remained in columns facing the classroom whiteboard, though rarely was every student sitting straight up and front-forward in their chair.

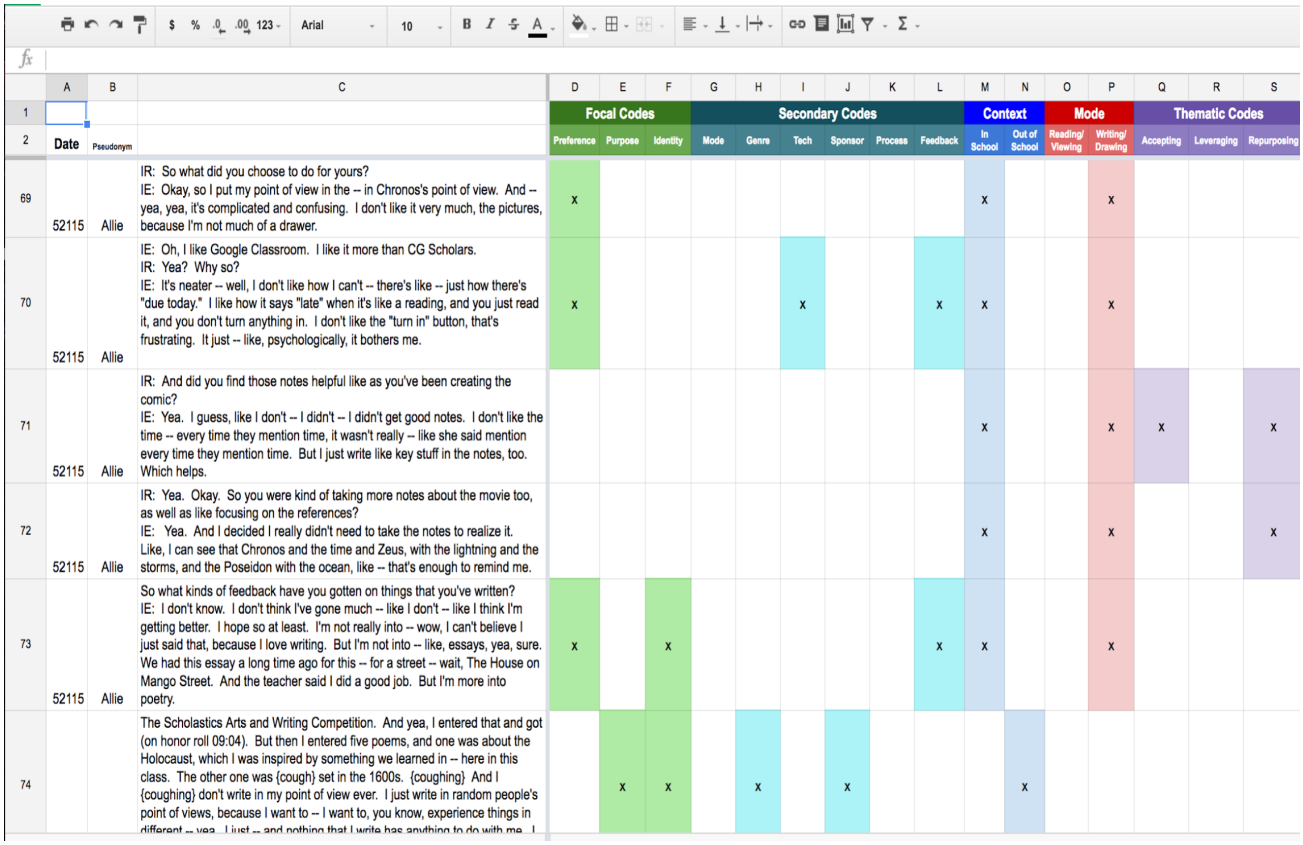
Data Collection and Analysis

Over five months, researchers observed classes twice a week for a total of 25, 60-minute observations. Researchers conducted one to four 30-minute interviews with each student (n=16) about in- and out-of-school writing practices and technology use, resulting in 45 interviews. One researcher interviewed the teacher four times (30-60 minutes each) to understand her curricular goals, practices, and technology use.

The research team conducted rounds of descriptive and interpretive coding with interview data (Saldaña, 2013), resulting in four categories with specific codes within each: *focal codes* (preference, purpose, identity); *secondary codes* relating specifically to literacy practices (genre, technology, sponsor, process, feedback); *context* (in school, out of school) and *mode* (reading, viewing, writing, drawing). Each research team member focused on a subset of assigned participants' series of interviews, composed developmental case studies, and presented them to the research team. The team worked as an interpretive community, meeting two to four times monthly to iteratively present our findings to one another.

We charted the coded chunks of transcript data to create a visual display of the analysis (Smith, Hall, & Sousanis (2015); (see Figure 1), and inductively examined the language in student interviews to identify thematic stances in their technology use (cf. Hull,

Stornaiuolo & Sterponi, 2013). This, again, was facilitated by rounds of interpretive community analysis. We drew from Du Bois (2007) to identify three stances: *accepting*, (i.e. patient acquiescence to requirements, often accompanied by antipathy or reluctance, but with an eye for enjoyable aspects); *leveraging*, (i.e. pursuing preferences and purposes by bringing knowledge and skill stemming from one context to bear in another); and *repurposing* (i.e. changing tasks to fit preference, purpose, or overarching goals).



				Focal Codes			Secondary Codes						Context		Mode		Thematic Codes		
	Date	Pseudonym		Preference	Purpose	Identity	Mode	Genre	Tech	Sponsor	Process	Feedback	In School	Out of School	Reading/ Viewing	Writing/ Drawing	Accepting	Leveraging	Repurposing
69	52115	Allie	IR: So what did you choose to do for yours? IE: Okay, so I put my point of view in the -- in Chronos's point of view. And -- yea, yea, it's complicated and confusing. I don't like it very much, the pictures, because I'm not much of a drawer.	x									x			x			
70	52115	Allie	IE: Oh, I like Google Classroom. I like it more than CG Scholars. IR: Yea? Why so? IE: It's neater -- well, I don't like how I can't -- there's like -- just how there's "due today." I like how it says "late" when it's like a reading, and you just read it, and you don't turn anything in. I don't like the "turn in" button, that's frustrating. It just -- like, psychologically, it bothers me.	x					x			x	x			x			
71	52115	Allie	IR: And did you find those notes helpful like as you've been creating the comic? IE: Yea. I guess, like I don't -- I didn't -- I didn't get good notes. I don't like the time -- every time they mention time, it wasn't really -- like she said mention every time they mention time. But I just write like key stuff in the notes, too. Which helps.										x			x	x		x
72	52115	Allie	IR: Yea. Okay. So you were kind of taking more notes about the movie too, as well as like focusing on the references? IE: Yea. And I decided I really didn't need to take the notes to realize it. Like, I can see that Chronos and the time and Zeus, with the lightning and the storms, and the Poseidon with the ocean, like -- that's enough to remind me.										x			x			x
73	52115	Allie	So what kinds of feedback have you gotten on things that you've written? IE: I don't know. I don't think I've gone much -- like I don't -- like I think I'm getting better. I hope so at least. I'm not really into -- wow, I can't believe I just said that, because I love writing. But I'm not into -- like, essays, yea, sure. We had this essay a long time ago for this -- for a street -- wait, The House on Mango Street. And the teacher said I did a good job. But I'm more into poetry.	x		x						x	x			x			
74			The Scholastics Arts and Writing Competition. And yea, I entered that and got (on honor roll 09:04). But then I entered five poems, and one was about the Holocaust, which I was inspired by something we learned in -- here in this class. The other one was {cough} set in the 1600s. {coughing} And I {coughing} don't write in my point of view ever. I just write in random people's point of views, because I want to -- I want to, you know, experience things in different -- yea. I just -- and nothing that I write has anything to do with me. I		x	x		x		x			x						

Figure 1. Visual data coding table used in interpretive meetings

Focal Codes			Secondary Codes						Context		Mode		Thematic Codes		
Preference	Purpose	Identity	Mode	Genre	Tech	Sponsor	Process	Feedback	In School	Out of School	Reading/ Viewing	Writing/ Drawing	Accepting	Leveraging	Repurposing

Figure 2. Codes in data table used in interpretive meetings

An example of a quotation from Serena involves multiple codes and demonstrates the coding process:

> I do a lot of -- especially with this particular series [Warrior Cats] -- you have to have all the characters out -- all the characters have different names, and have to have a certain name. And each name is like a personality, so the first time you have to know how many names I'm going to need. So I spend a lot of my summer writing different name ideas, and different personalities, what color and like what kind of fur they have, and all that other stuff. So it just -- I did a lot of the technical stuff during the summer. And when school started, and I realized we have Chromebooks, I decided I was going to work on it at school.

Serena's quotation was coded for: *technology* (she mentioned Chromebooks and inferred use of another technology), *process* (she described an aspect of her writing process), *in school* and *out of school* (she wrote during the summer months but decided on transferring the skill to school), and derived the thematic code *leveraging* (she specifically discussed using previously gained knowledge and skills to a new context). We coded each interview for all 16 students using these categories.

Interviews with the teacher, Mrs. Palmer, were analyzed to identify her perspective of sanctioned and unsanctioned technology use in the classroom space. In relation to the interviews, we compared the teacher's and students' technology use and participation from observational field notes. Observations were analyzed to identify patterns in the teacher's assignment parameters and student interactions during technology use. To identify factors influencing students' stances, we used both the observational data and the interview data from the teacher and students.

Findings

Teacher-Sanctioned Technology Use

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

After the class was gifted a set of Chromebooks, Mrs. Palmer set out to design daily literacy activities that took advantage of the new technology. She used four digital platforms: (a) a classroom blog, (b) Scholar, an online writing environment; (c) Google Drive, a writing and file management platform; and (d) Google Classroom, an emerging digital classroom management tool. Each of these tools was aligned with specific classroom activities for students' receiving curricular materials and submitting their work.

Mrs. Palmer developed her school-required classroom blog to provide a record of class activities and a place to post resources for both in-class and out-of-school. She used a weekly calendar template to outline class activities and post some digital resources (i.e. files, hyperlinks). During a short story unit, Mrs. Palmer described the multiple resources she had put on the classroom blog:

> I put a link to the Gutenberg listing of all of Poe's works just so that the kids, you know that's a resource so that they're interested in that. Of course they have a copy of the books there but they also – you know a copy of the story and the book – but they also have his entire work sitting there from the Gutenberg Project that they could access.

The classroom blog served as a digital alternative to the textbook and an extension opportunity for all students. Mrs. Palmer controlled everything that was posted on it, and used it solely as a dissemination tool.

From previous work with the research team, Mrs. Palmer had experience with Scholar, an online writing environment. The Scholar writing environment consists of four components: Creator, Publisher, Community, and Analytics. Creator is a word processor where students compose, review, and annotate each others' multimodal compositions; Mrs. Palmer used it to facilitate two essays. Publisher, a space where teachers design and manage

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

projects with forms of peer review, includes rubrics with specific criteria; Mrs. Palmer used it for peers to review each other's work. Community, a discussion space, provides access to classmates' profiles and a discussion feed for interaction; with it, Mrs. Palmer asked students to conduct in class 'discussions' and pre-writing. Analytics, a tool that displays machine-enabled records of activities, projects, and assessment results, was not used during the time of this study.

Google Docs, a browser-based word processor, was a third digital platform in the classroom. Mrs. Palmer was familiar with the tool, having used it in various professional development sessions. She commented, "It's a new tool that's available to me and something that I'm becoming familiar with as a professional and I think that there is a lot of advantages." When she reflected on the differences between Scholar and Google Classroom, Mrs. Palmer highlighted the functional roles that each tool played for her:

> I think that there are some advantages over Scholar for me in terms of just kind of those basic assignments that I just want typed up and turned in to me in terms of file management and just getting to me it still is easier for me then, because I grade by assignment, not necessarily by opening a portfolio of work by the student because that's a lot more clicks and stuff, especially when you're doing it electronically.

This excerpt shows Mrs. Palmer distinguishing between the tools based on her primary purpose for them. Her workflow primary, she preferred the tool that made it easier.

Mrs. Palmer also introduced students to Google Classroom, a web-based platform that facilitates organizing and managing classroom assignments, grading, and communicating between the teacher and students. During the course of the study, Google Classroom became an increasingly robust platform that Mrs. Palmer took advantage of for dissemination of resources. As she learned the features of Google Classroom, she used it to facilitate

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

giving/receiving student work as well as giving resources. For example, she would post notes packets, readings, and handouts, some of which students could edit within the Google Drive environment and other that they could not (ex. a PDF of a data table).

Looking across the platforms, Mrs. Palmer considered the logistics of students' workflow and access. For example, she wanted at least one platform to be a consistent space for students so she could "get them to go back to that spot for directions and then where to go to get the information, so like you know a distribution point basically for the information." Early in the year, as Mrs. Palmer navigated her primary digital spaces - the classroom blog, Scholar, and Google Docs - and described herself as "trying to figure out how to make that work. So in terms of my thinking it is how do I present this information so it's not confusing the kids, but they see these tools and how they can work together." Near the end of the study, Mrs. Palmer looked forward to the year after, because she knew the 7th grade teacher had used Google Classroom and the students "will be familiar with Google Docs and I can just make a [Google] Classroom." In these examples Mrs. Palmer foregrounded the efficiency and function of each tool.

Mrs. Palmer was positive about her students' use of technology, especially as it related to having access at home and increased turn-in rates of homework. Often projecting a growth mindset about her own use of digital technologies, Mrs. Palmer said, "For me it's just, it's always everyday something different. You know, and I'm just like 'what do I do now,' 'what do I do now' because every time I tried it's like, 'This is not working. Now what do I do?'" She thought that using technology was important for youth "because I think that's something they'll encounter in the future at the high school and also just out in the world." Considering Mrs. Palmer's use of digital classroom tools, she consistently paired a specific tool with a specific purpose and situated herself as disseminator and receiver of student work.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Students' Stances

Within and against the range of teacher-sanctioned activity, students demonstrated three stances toward the sanctioned activities in the classroom: accepting, leveraging and repurposing. These stances were not only indicative of students' attitudes toward reading, writing and creating across contexts, but they also represent a critical range in the degree to which students exhibited agency and contributed to the potential for third space moments in the classroom. To clarify each stance and show its relation to the ways each stance functioned to produce third space moments, we provide examples of times when students overtly displayed particular stances; however, students often expressed more than one stance toward the use of digital technologies as designed by the teacher. In the second section, we articulate examples of the influences we traced across literate practices, and provide an explanation for the stances youth took up and expressed.

Accepting

We defined the *accepting* stance as acquiescence to task or behavioral requirements; not surprisingly, students often accepted the tasks and formats they were asked to work within the classroom. However, we witnessed a range of ways students acquiesced to requirements, often accompanying their acceptance with indications of apathy, reluctance or enthusiasm. For some students acceptance simply seemed to be a path of least resistance but they managed to keep an eye open to potential enjoyable aspects of tasks. Greg, for example, described the requirements for assignments using language such as "has to do," demonstrating implicit acceptance. For one assignment, students were asked to write a eulogy for an endangered animal. Greg explained, "I'm **supposed to write** – I haven't started it yet...I **had to write** a eulogy for the animal that I'm doing. I wrote I think a paragraph from Reflections on Life in the Trenches; I **had to write a thing**, like a diary on day one through

six; **I had to do** that too." Such obligatory language often placed the teacher's intentions and objectives at the center of the conversation, rather than the student's thoughts or interests. This kind of recounting was typical of indifferent acceptance, but did not mean that a student was unaware of his or her own stance and the role that context played in dictating it. Greg was clear about his audiences and differentiated between home and school saying,

> It depends on my environment. Like say I'm in class, I really like to see, understand what the teacher expectations, what they're looking for. But if I'm at home or around younger (people) I'll look for something more funny and entertaining.

Greg demonstrated a sophisticated understanding of home and school contexts in comparison to each other. One environment required obeying the teacher's intentions while the other allowed for more freedom and fun. While he indicated he would complete assignments, Greg did not show enthusiasm, but rather apathy to the required tasks.

Callie, too, accepted classroom norms. She did not have any favorite projects, but thought, "they're all kind of equal." She described an assignment using similar language which evoked requirements over interest, "We **had to read** our eulogy; we **had to make a graph** of population growth or decrease we **had to draw** like where it lives, and a map of where it lives." Like Greg, Callie seemed to accept tasks as a matter of routine, but did not necessarily express enjoyment or excitement around them.

It was not uncommon, however, for students to express enjoyment in some aspect of a task or platform. Maddie's acceptance involved patiently waiting for such moments. She noted, "We also do Quick Write on Scholar where **she gives us** a question and then **we have to** think of our honest opinion about it, like what we would do in that situation. So, it's actually pretty nice." The combination of language around assignment expectations and personal preference (in the form of "it's actually pretty nice") suggested an intersection

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

between the parameters of the assignment and feeling of enjoyment around completing at least some aspect of it. Maddie provided other examples of assignments she enjoyed, especially using the Scholar platform. She said, "When we did use Scholar we were watching this movie called *The Freedom Riders* and then we did a thing on Edgar Allen Poe also, and that's the one I actually liked." In referencing "the one" assignment she actually liked, Maddie expressed a key feature of acceptance, patiently waiting for moments when a window to one's interests might suddenly open. Later she noted her interest in Poe, saying,

> *The Telltale Heart* and it would just make you stop and be like, 'Okay we get it. The heart is beating. What happens next?' like he keeps you there and he makes you mad. But actually, I like put that in an essay because it was actually really good. So, that's what we did in Scholar.

Acceptance was also accompanied, at times, with reluctance. Ava, a student Mrs. Palmer consistently reprimanded for talking, resisted certain rules and boundaries of the classroom space, while simultaneously accepting the content of specific assignments. From the observational data, it was clear that Ava and the instructor clashed often, usually as a result of Ava resisting rules around talk and technology use in the classroom. A few times, this resulted in Ava's dismissal or removal from the class. One of the norms she resisted was working in groups, saying,

> Well, it comes down to working with groups and things, I'm not a good person to really work with them, but I'm more of a person that's kind of individual. I want to do it on my own, so I can really challenge myself. When **they tell me**, "Oh **you have to work with a partner" or you have to work in a group**," I'm not really that type of person that does that.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

When given the option, she relished the opportunity to work on her own rather than in groups. She noted, "When I have a choice, I don't do it..." The notion of choice or even perceived choice is critical to the ways acceptance operated in the classroom. As students usually described accepting using teacher-centered language, the role of choice was often in the background or even nonexistent. For Ava, the inflexible nature of classroom norms around how to work and with whom meant that acceptance was not always the result of willingness. Sometimes sent out of class for calling out her responses or questions, Ava tried her best to get along when she returned to class, saying, "I come back in and I sit down, and I'm quiet. . . If I have another answer, then I ask it, and if I don't get my question answered, then I try my best to stay quiet." In her statement, Ava revealed an ongoing tug of war around acceptance, which often ended in her surrendering to the classroom norms, at least for a moment in time. Ava was also aware of the parameters of technology use:

> We did this one paragraph, a summary about a movie called *The Freedom Riders* and **we have to do the summary stuff and we post it;** it was kind of like a Facebook. We posted a lot of pictures and stuff on there; **you're not allowed to post something** on what scares you; **you're not to post a picture** of it.

In her description of the summary task, Ava quickly switched from talking about what she and her classmates did (post a lot of pictures) to what they were not allowed to do (post pictures of scary things). This swift change in topic and tone is important because it indicated how salient rules, restrictions and parameters were in her conceptions of classroom writing.

As illustrated, when students were asked to describe assignments, they often used language expressing requirements to complete tasks. Yet, there was a range within the accepting stance from merely fulfilling expectations, to occasionally enjoying assignments to the reluctance expressed by Ava. Grades, expectations for task completion, and most likely

past experiences with "doing school" converged into students accepting stances in the classroom. Taking up these stances aligns with Freebody's (2013) claim that after many years of schooling students closely observe the classroom interactions and can understand expectations and rules for appropriate participation. However, as demonstrated in the next section, some students went beyond mere acceptance of classroom norms and were able to leverage their out of school experiences, reading and writing habits, and attitudes toward technology to their advantage.

Leveraging

By leveraging, we mean that students were pursuing their preferences and purposes by marshaling resources, knowledge, skills, and literacy practices from across contexts to use in another setting. When students leveraged their resources in the classroom, they often did so in ways that aligned with the teacher's intentions including using networked digital technologies in class. For example, during one class, Mrs. Palmer instructed the class to close down their Chromebooks because "there's nothing for you to look at." Serena tilted her lid down about 30 degrees, and then when Mrs. Palmer asked about the meaning of 'ology,' she tilted it back up, typed into Google search engine, then tilted her screen down. At that point she raised her hand and said 'the study of' which Mrs. Palmer wrote on the board. While not sanctioned, Serena was engaged in using the technology in service of the lesson, leveraging her knowledge of search engines.

Interviews with students revealed the range of ways they leveraged their knowledge and skills (sometimes unsanctioned) to complete sanctioned tasks. Many of the students leveraged personal topics of interest to refocus the tasks they were assigned to contribute to their longer trajectories of interest. Kenya was able to leverage life experiences and interests outside of school into her writing through four topics: her baby brother who had passed away,

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

music, drawing, and "certain things about me" (like that she had bronchitis and had to get an inhaler on her birthday). When she was assigned to do an essay of an historical event, she chose to work on a project about the Titanic because she had been studying about it since third grade, leveraging her background knowledge on the topic. In another assignment to write about a topic of interest, Kenya took advantage of the open-endedness of the project describing her process: "I wrote about my brother. He was two months old when he died. . . So I did it on him, and it got me all emotional, because -- yea, he was like a big, important, in my life." Having been suspended for disciplinary issues, Kenya leveraged her writing and drawing practices to help her get caught up with work she missed and as communicative and therapeutic tools. She noted, "Like I have multiple notebooks, and then I have diaries that I write about my day and stuff. Like if I had a bad day, I'll just draw it." She believed that writing down her feelings was more effective than trying to talk to peers, saying, "I feel like I can express my feelings on paper, than to somebody else. Because I feel like they don't really understand what I'm going through, my point of view."

Maddie had many discussions and "debates" with her father about historical events connected to classroom assignments. On the occasion of writing about Booker T. Washington and W. E. DuBois she said,

> And then me and my dad (had) another debate on Booker T. and W. E. B. and we were actually talking about this yesterday: Who do you think had a better understanding, like, who do you think was better in Civil Rights and understanding? I chose W. E. B. because Booker T., he told, like, African Americans to just deal with segregation, just deal with it, like, don't fight for your rights... But—and then I told my dad about this and then he was like, "Actually Booker T. was better." I'm like, "Here we go."

Maddie's father ("he's a history freak" and "I basically think about him as my history teacher") also provided her with information and ideas about crafting her classwork. For her project on "warfare through different generations" she consulted with her father, "so it was really cool asking him about warfare. I'm like, 'hey dad, you want to tell me about warfare through different generations?'"

Sabrina leveraged her interest in dramatic stories and acting in her classroom reading and writing (e.g., using movie plots as inspiration for writing tasks; and doing dramatic readings in her mind of assigned passages to help with comprehension). She also used lessons learned from class assignments to compose stories when she was "bored." She took advantage of a poetry assignment to try writing a novel, and drew from transcontextual resources, including a school play and a movie, to do so. She explained:

> We had to write some poetry last year and I tried to write a novel actually. I kept rewriting it though...Actually we're doing *Alice in Wonderland Jr*. for the play – but last year, actually, I tried to do like an *Alice in Wonderland* theme – I kind of got it off the movie a little bit.

Further, she explained her use of story elements taught in school to organize ideas: "We have a computer at home but it's not mine so I can't really type it. I kind of just write it in my notebook like the characters, plot, whatever."

Leveraging was not only evidenced in how students utilized knowledge, skills and literacy practices from across contexts to inform in-school tasks, it was also demonstrated in the way students saw the boundaries between contexts as malleable and fluid. Aaqilah, a girl who had lived in several countries, leveraged her transnational experiences inside and outside of the classroom, brought her extensive reading and writing out of school experiences into the classroom, and also used technology resources to enhance her learning. Aaqilah leveraged

her passion for writing into entering both in-school and out-of-school writing competitions, including poetry, short story and screenwriting competitions. She connected her home and school experiences through her writing, demonstrating a sophisticated understanding of the relationships between contexts:

> I've heard things at school that have large meaning, but what I'm writing a lot, like people like to open their eyes and see that there is a whole world out there that they can't just get stuck in [names town and state], you know? There is whole world out there with wars and with like crises, I can't say that word, and that they need to know that it's bigger; it's just bigger than us I guess.

Aaqilah's tendency to talk about her reading and writing as practices that move in, out, around and across various contexts illustrated her ability to leverage literacy in multiple directions. She even leveraged media for her writing. She explained, "I'm writing freely . . . I sometimes subscribe to this channel about poetry and it's just like the best; it has people just putting their emotions out with their poetry." Other online spaces that she leveraged included an online website called Good Reads. She noted:

> It's like this website where they decide which is the best book of the year that just got voted for and you discuss with people about books and books and books and you should really see it; it's really cool. It's like Facebook, but a book instead of Facebook, and you have like a To Read section, a Currently Reading section, a Read section, all of these sections and a use for all the books you want; it's like the best set ever, ever.

Aaqilah was strongly supported by her mother who encouraged her literate practices, including entering a poetry competition. Several teachers across subjects were receptive to discussions about her out-of-school writing and even recommended opportunities to her. For

example, in one of the discussions with her teacher about her passion for poetry, Mrs. Palmer suggested taking some classes offered out-of-school called “How Writers Write.” Aaqilah expressed excitement about working through the classes in her own time, noting, “and I'm in session two, and it's really, really good.” Her passion for writing meant she was always working to make connections and meaning across contexts, to cultivate this craft as a way of life rather than a means to an end.

Across cases, we noted similar marshaling of transcontexual resources, knowledge, and skill as youth pursued preferences and purposes. Kenya used her own personal experiences, researched topics of interest to her, and used writing for an emotional outlet, while Maddie drew extensively on her discussions with her father to complete class assignments but also to deepen her own learning about content and events. Sabrina used media and previous writing to aid her in current projects, and Aaquila employed her passion for reading and writing in ways that forced boundaries to become malleable and fluid, using technology to bridge formal and informal literate practices. The examples demonstrate how students can go beyond simply accepting school norms to use what they have learned in other settings to meet classroom expectations as well as their own goals.

Repurposing

Although the least employed strategy, some students *repurposed* task parameters such as time, materials, and technology to fit their preferences, purposes, or literacy goals**.** Repurposing differed from leveraging in that students worked to change the task, pushing up against the practices sanctioned by the teacher, to fit their personal preferences for reading and writing, rather than working to comply with the teacher’s goals. Often repurposing was accompanied with implicit or explicit resistance or critique of the task or mode. For example, Jillian discussed using time allotted for group activity to write with her preferred utensil--her

smartphone. She said, "**Sometimes I try to write here without the teachers finding out**, because they don't like me on my phone, but if I'm in a group they'll let me be on my phone and I'll just write in there." The group activity provided cover for Jillian's preferred writing tool.

While completing a data table assignment for social studies using the Chromebooks, one student had her research on the screen and was writing her findings by hand. When Mrs. Palmer asked her why she wasn't typing her findings, the student replied that she would just type it up later. Mrs. Palmer chided, "but that's so much extra work. Do you know how to split the screen?" The student replied that she knew how to, but preferred having the data on the screen and her notes on paper. At that point, Mrs. Palmer shrugged and left her. This excerpt shows Mrs. Palmer's preference for using specific tools in specific ways to efficiently complete an assignment, while the student assembled digital and non-digital resources to her preferences.

Corrine stumbled upon a way around the Scholar review system, seizing the opportunity to work with her friend in giving feedback. Instead of remaining anonymous using the review feature in Scholar, as Ms. Palmer required, she talked to her friend about the feedback she received. Through dialogue, they both discovered that Corrine's friend was in fact the anonymous reviewer. Following this discovery, they continued the unsanctioned talk about Corrine's work, clarifying the feedback and creating their own understanding. Thus, the students essentially bypassed the anonymity of the review system to fulfill their own goals while still completing the task. However, they did not use the review system in the way the teacher intended.

The repurposing stance also exposed some tensions between the teacher's perception of appropriate technology use and the students. In an interview, Serena explained, "I have a

Netbook. It's like a tablet thing. So I got that. And then, even though I have to share with my brother, **I can use** my Google account at school--you know, so **I can use** it at home and at school." In one instance, she was assigned to take a definitive number of notes in a Google Doc while watching a documentary in class. Having completed the minimum number of notes, Serena repurposed the remaining time to continue work on her personal fanfiction piece that she had saved in a GDrive. While Serena saw the potential of the technology to give her access to her work inside and outside of school, Mrs. Palmer had a different take on the students' accounts. She recognized but did not approve that some students reappropriated class time for their own purposes on the tablets. Mrs. Palmer described Serena's out-of-school writing (fanfiction about warrior cats) as an effort to "avoid her real work ...She's writing a story and sending it to me for comment, and I just finally said, "Serena I'm not going to comment on this story if you're doing it while you're supposed to be taking notes on the video for social studies." This repurposing was an unsanctioned use of the platform, yet it continued non-school literacy activity.

Some students, then, repurposed time, roles, or the technology to satisfy their own preferences for technology use. The repurposing stance undermined some of the teacher's tasks and beliefs; however, different from the ways resistance is often characterized (cf. McCarthey, 2002), students accomplished the teachers' goals rather than explicitly ignoring or challenging them. They were engaged with learning the course content, but did so on their own terms.

Potential in Leveraging and Repurposing to Enable and Extend Learning

The varied stances students took up toward task and technology in the classroom (including reading, writing and creating) were multilayered. In other words, it was not just a matter of either accepting or resisting activities. There was much more nuance and

sophistication prevalent in students' stances which revealed critical opportunities and potential barriers to meaningful engagement. For example, accepting an activity was not always productive in terms of fostering agency and engagement in learning activities. There were many instances of students simultaneously accepting and remaining rather apathetic or reluctant about a particular task. Although this may seem advantageous if controlling behavior is the goal, often students who were taking up this stance displayed disengagement with the materials, sitting back and going through the motions.

While leveraging and repurposing could appear disruptive on the surface, these stances also worked to serve a more significant educative function. The acts of leveraging and repurposing cultivated more agentive learning with tasks and technology use, presenting the potential for third space openings, and building bridges to more meaningful engagement. Students who were able to leverage or repurpose often displayed a desire to carry their learning across contexts, breaking down rigid boundaries and becoming active participants in their learning.

Factors Influencing Stances

To gain a better understanding of how and why students took up these stances, we used interview and observational data to identify factors that influenced the stances students took up: barriers to and facilitators of leveraging and repurposing. The barriers included restricting activities to particular platforms, narrowed orientations towards curriculum, and lack of attention to out-of-school practices. The factors that facilitated students' abilities to leverage and repurpose their knowledge and skills included access to technology and the influence of sponsors.

Barriers to Leveraging and Repurposing

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Along with instructional tasks, Mrs. Palmer designed behavioral boundaries for Chromebook use. Some of these were bound up in classroom routines; for example, the teacher had students pick up their assigned Chromebook when they entered class and put it away when they finished their lesson. These boundaries were reflected in instructional design and classroom interactions including, (a) restricted activity to particular platforms, (b) narrow orientation to curriculum, and (c) lack of attention to out of school practices. (For extended analysis of Mrs. Palmer's instructional approaches, see Kennett, 2015).

Restricted activity: Platforms and assignments. Mrs. Palmer associated certain platforms with specific types of intellectual work. She stated, "Last year when I did Scholar, and we really hit revision very heavily, the kids learned how to revise. And with Google Docs, we're not doing that piece nearly as much as we should." She saw Scholar, with its Structure tool, as the platform to turn to for essay organization. She reflected that Scholar's Community tool was helpful "for the *Monkey's Paw* in terms of the pre-reading activity and that classroom discussion, and like the kids said I think it gave everybody a voice in there and brought out – it had people talking who wouldn't necessarily have talked and so I liked that. I really felt that really went well." Consistently, as Mrs. Palmer shared her planning for instruction, she paired specific tools with particular tasks.

Mrs. Palmer saw the matching of each assignment to a particular platform (e.g., Scholar, Google Docs, Google Classrooms, paper and pencil) in a positive light. However, the observational data showed that the teacher restricted the use of certain platforms, and did not allow students to combine platforms or use apps they might be familiar with outside of the classroom. During one period, Mrs. Palmer sat down at the front of the room to read aloud a short story. She instructed the class, "Everyone, close your Chromebooks so I know you're not surfing the web while we're reading." When a student asked if they could read it

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

themselves, Mrs. Palmer replied, “You can but I'm going to read it out loud because the language is archaic.” Rather than allowing students to look up archaic language with their computers, Mrs. Palmer relied on her expressive reading to make the meaning for them, not stopping once throughout the reading.

Students were aware of the one-platform-one activity norm. Kasey explained restrictions as they applied to the Chromebooks and technology workflow in the classroom:

> . . . whenever they have an assignment for us, it goes straight to my phone. . . you log into your Gmail, and it sends it right to your phone. You're not really allowed to -- like you're like what the teacher sends you, you can't really do anything.

Jillian experienced the limitations of one assignment-one platform when she described composing in Scholar but having to submit another assignment in Google Docs, saying, “we’ll read books in class and write on Scholar, like a page and have to transfer it over to Google Docs and send it to the teacher.” Clearly savvy about navigating multiple devices and platforms, these students were restricted to specific means to accomplish the assignment.

The platform restrictions were reflected in other curricular limitations as well. When students had choices about reading and writing genres, writing topics, and whether to work with partners, they were more engaged in the projects and were able to leverage their resources. Aaqilah emphasized the importance of having a choice in genre in her out-of-school writing, “Okay this is much different because this is – like what I’m writing is freestyle and I’m writing poetry and things that like have large meaning.” She further elaborated on the differences between writing what she wanted versus meeting prescribed assignments:

> I actually write poems extremely quickly. Like the newest poem I wrote, I wrote in one day. And I love it. Okay, but that's not the point. The point (is) it was kind of

> forced on me. . I didn't want to write about that, when I just could've had freestyle. This was like, you have to at least two of these, and you have to have this and that, and you can't use that, and those are weak words.

When asked what she thought the difference was between her favored project and *The House on Mango Street,*" Kasey said, "I actually got to pick out what I wanted to read instead. . .I did the poster. I had to present," which she enjoyed.

The restriction of specific platforms to specific tasks served the teacher's goal of managing multiple writing assignments and keeping students accountable. However, students appeared to be more tech savvy than the teacher credited them for and found that the aligning of platforms to assignments restricted them from using their knowledge of digital technology and limited their choices. These restrictions highlighted the teacher's traditional orientation to curriculum in spite of her embrace of technology.

Narrow orientation to curriculum. Mrs. Palmer's expectation of students' adherence to curriculum was undergirded by traditional practices. She established patterns for activities, genre requirements, and instructional activities in accordance with traditional, school-based norms for success. In one classroom observation, Mrs. Palmer told students that if they were done with their assignment, they could use a pre-loaded 'match the US states to their names' app on the Chromebooks. When a student inquired further as to the purpose of the activity, Mrs. Palmer responded, "You need to know where they are. It's an 8th grade thing we do in Social Studies. The test is in November." By justifying this activity with the grade-level, departmental rationale, Mrs. Palmer affirmed that school requirements were enough of a reason for students to comply.

Focusing on the technology rather than students' responses sometimes resulted in shutting down conversations that might have been facilitated by media. For example, when

framing the task to write to a YouTube video creator to say "whether or not he captured the spirit of the story, the theme, the message," one student piped up saying "I got the shivers." Mrs. Palmer's response was, "I thought it was a really well done video, what gave her the shivers? But whether or not it got Bradbury's point is up to you." The next student's question - "What happened to the people? What happened?" - was ignored as Mrs. Palmer re-started the video. Mrs. Palmer proceeded to read the entire story aloud, not stopping at any point in the story, though expressively acting it out, including pace, gesture, and tone of voice. An opportunity for a more extended conversation was lost as the teacher focused on the video itself and her own interpretation, not students' responses.

During the course of the school year, Mrs. Palmer was concerned with the students' writing abilities and mentioned multiple times her efforts to support students' writing. She reported, "I really want to help them get the structure down. I was talking to other social studies teachers and that day and other language arts teachers, we're planning the same thing because kids are coming out where they don't know how to write. I mean this is the worst I've seen it." A focus for the year, across the department, was writing Evidence Based Arguments (EBA's). To this end, she emphasized primary documents, including designing multiple assignments to reinforce the focus on evidence. She said, "The articles that we're reading in social studies – a lot of the questions are really geared towards what evidence did you see, you know and what's different between this article and this article... what evidence do you see from this article?"

Mrs. Palmer had specific goals, shared by her colleagues, to focus on argumentative writing and for students to know the states. However, in her attempt to fulfill these goals she sometimes shut down conversations and her justification repeatedly deferred to supposed limits and demands of a curriculum. The message to students was that the established

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

curriculum was the driver rather than students' ideas; purposes of instruction were limited to school-bound expectations and did not build on students' out of school practices.

Disconnect between student and classroom literacy practices. Comparing the observational data with students' interviews, it became clear that the teacher rarely acknowledged or built upon students' background knowledge, literacy habits, or technology use outside of the classroom. For example, when talking with students about a classroom topic, Mrs. Palmer often told extended stories, but did not invite the stories of her students. There were times that students offered up stories about their experiences, but Mrs. Palmer did not engage with them. Students verbally engaging with the task but not being acknowledged by the teacher happened one day while Mrs. Palmer read aloud a story. In a lesson structured around reading with pauses for predictions, during a reading segment, a student exclaimed "I knew it!" but the teacher did not stop reading. Students were expected to write their predictions in the digital space, not verbally during the read aloud.

Students shared some of their rich literacy practices with the research team. For example, Ava kept her out of school writing interest to herself, and preferred writing out of school, "but I'm not the type of person who writes in front of everybody and talks in front of everybody." She also described herself as a "creative person. I like to create things, you know I do like to draw a lot." She was inspired to start a blog from observing another girl. She said, "Well I've seen this girl and this girl she started a blog about cyberbullying and I wanted to start a blog about bullying bystanders and how they can take kids' lives and things like that." It was not the writing of the blog per se that motivated her, but her passion behind the topic:

> Because I want people when they get on there not to feel sorry or anything like that, but to think about cyberbullying or bullying and it's not okay and it's the right thing

> to do and letting people know what to expect if you get bullied, or to show or to do or get examples or if somebody...go and tell that person to stop.

While Ava willingly shared her out of school practices with us, we saw little evidence of the teacher's knowledge of Ava's interests or self-identification as a "creative person."

The barriers described above work against the creation of a third space in the classroom. We see examples of students' desire for choice, for using their digital knowledge, as well as for invitation of their life experiences, abilities and knowledge from outside the classroom; yet the teacher, perhaps hampered by curricular policies, did not build on students' backgrounds or engage them in discussion. Thus, much of the potential to motivate students to write in a variety of genres, to engage with texts, and to merge their cultural capital was lost (Skerrett, 2010). Yet, just as the teacher shut down opportunities for students to integrate out of school knowledge with school practices, there were several factors that facilitated students' ability to leverage their knowledge and repurpose the tasks.

Facilitators to Leveraging and Repurposing

There were several important facilitators that led to students leveraging or repurposing their out of school experiences and literacy habits into the classroom. These included the technology access in- and out-of-school and supportive sponsors.

Access to technology. The class set of Chromebooks was housed in Mrs. Palmer's classroom. As the year progressed, she found that students had a positive relationship with the digital writing, noting that they were "giving me better answers. And, you know, I just think they feel more comfortable with the technology. They feel more comfortable with writing because they're doing it." Mrs. Palmer was pleased with students making connections with their Chromebooks. For example, she identified student ownership, "I know that the kids are taking ownership because they're changing their wallpaper, things like that." Our

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

observations revealed that students were often engaged in sanctioned technology use. One young man declared in a discussion activity using Scholar's Community feature: "this is helping me learn!"

Students embraced the technology at school and some took advantage of the technology at home to pursue literacy practices. Corinne liked the Community function of Scholar, "It makes it social. You could just kind of connect with your friends. . .And I love the messaging part. That's really helpful." Jillian articulated her ability to use technology to write about her feelings:

> So when I can write I can tell – I can express my feelings about the whole thing and stuff. I like to talk to my parents I can text them, telling them and it will sound all good and then like when I go to (tell) them it sounds like really weird and stuff; I don't know, I feel like when I text and when I write books on my phone it's better than saying it on paper or out loud.

Texting with her cousin also provided benefits to both:

> Only to my cousin because she has an iPhone and I have a Galaxy so I screenshot it and I'll send it to her and I'll ask her if she likes it and she ends up telling me yes or no and then – like her opinion means a lot to me because she writes a lot and likes my opinion and it means a lot to her and her books.

Jillian's consistent use of her phone as a writing tool allowed her to access various familial audiences. While she was often told to put away her phone in class, her writing process was clearly facilitated by using it as a flexible tool - among them, typing, taking screenshots, asking for feedback.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Nina, who had access to computers at home, noted the benefits of laptops over pen and paper and how they facilitated her ability to work seamlessly from home to school. She said:

> So with the Chromebooks, you have everything you need. Like, if you're stuck on a question, or you need more information, you can just get right on the internet. When we have paper, we don't really have that option to use, unless we have the iPads or the laptops from school, stuff like that, or unless she said, you can take your phones out just for this assignment. Yeah, I feel like I do more work when I'm at home. Like, so say I didn't finish, and I finish at home, and there's another assignment, and I know we're going to do it tomorrow, I just would get started on it, so I would have more time to finish it tomorrow. Now, if we had paper, it wouldn't be like that, because they have the paper here.

For Nina, the Chromebooks provided flexibility for completing the curricular task. With a variety of situations she could find herself in, Nina focused on the affordances Chromebooks offer as they enabled her to fulfill the assignment.

At home Laura used a number of devices and online programs to facilitate her writing, mostly with peers. She described an earlier practice with friends,

> I used to write about this group called Mag-Con and they had a lot of guys in there that I liked, so I wrote about like me and my friends wrote about this fantasy thing in 7th grade. We were just like dreaming and stuff.

Laura shared that a program for group chat inspired her to write online, “Kick is where like you just talk to people, you can make group chats and it was really cool. . . so I made a group chat and a picture of all three of us as the superheroes. . .I got inspired by all those people writing those so just wanted to write a story.” She kept in touch with friends at her former

school through chats and writing. Technology provided access to her old schoolmates and to those online who shared her interests.

Access to classroom technology facilitated students' writing preferences both in school and out. Student-owned technology provided them access to audiences not available otherwise. The combination of devices illuminates what conditions are necessary for supporting students' literate practices. While access to technology may seem like a low bar for creating third spaces in classrooms, it is a necessary first step for teachers and students to begin to change traditional practices.

Sponsors. One of the emergent themes that came from the interviews with students was the role of sponsors in their reading and writing habits (Brandt, 2001). Students often cited parents, siblings, relatives, or friends as performing roles as models, audience, feedback providers, or critics. Serena described her mother as an author who inspired her, "she writes Christian stuff. She wrote a book of poetry of poems that she has written throughout her life basically and then she put it all together and made a book, people liked it, and then for years she has been working on this book." Aaqilah's mom shared information about the arts competition, "Well my mom, she heard about it; I forget, but then she told me about it and so I – this scholastic writing and arts competition. I just said let's go for it and I just put myself in there and I decided that I wanted to make something different, you know; I don't want to just have like a sad poem." Maddie valued her father's perspective so much that she wanted to bring him into class, possibly to disrupt students' notions of history teachers, saying:

> He has literally seen almost every show on the History Channel. . . I want to bring him in. . . . I really want to bring him in 'cause I want everybody to be like, I want everybody to be like, is he a history teacher, like are you a history teach—no I work

at a factory. How are you so smart? And the thing is, in high school history was his worst subject.

Greg's aunt served as a role model for writing poetry; he said, "My auntie, she's a very good writer; she writes poetry and stuff. . . like sometimes she puts on a read and she just like writes a lot of things, so. Yeah, but she makes her own poetry and she reads it sometimes, and sometimes I hear her making it up too." He had written a Thanksgiving prayer to share with his family including his mom who had previewed it. April talked about the role of picture taking, "Me and my sister and my cousin and we take pictures every day after school… it's fun… Because my sister – I write on it and my cousin comments on it and my little cousin, mom comments on her little baby picture." Another of April's sponsors was her brother, who wrote rap, and created videos that she participated in.

Peers who acted as an audience or provided feedback were also sponsors of students' writing. Maddie noted the peer who provided helpful comments on her introduction and read the peer review aloud, " I liked the intro you used throughout history, I also liked how you informed us about how warfare has changed. Excellent paragraph. I like how you explain the technology from different generations." Nina agreed, finding that feedback improved her text, "There's something about it just helps me give their ideas, and it helps my paper get better. And then my ideas can help their paper get better, so we're all helping each other out in the end." Ava got recommendations from her peers about what to read, "one of my friend's told me that it was good and so I was gonna try it and read it and I actually ended liking it." Laura enjoyed reading and writing with her friends saying, "Like I read and write like at my friend's house when we're just sitting on the bed not doing anything." Just having an audience for out of school writing seemed important to Serena, "Well my neighbor she is a 7th grade and she likes to read these books so . . . all she really does is say it is good, even

though I know there is probably something that she thinks is wrong with it but she does not want to tell me, because she doesn't want to hurt my feelings or whatever, and I tell her to like just say what she wants, but she still doesn't."

Mrs. Palmer also acted as a sponsor for in-class and out-of-class literacy activities. In the Scholar platform, she created a Poetry Group. Students could join the group if they wanted to write and give feedback on each other's poetry. She had three students who were active in the group.

The facilitators acted as counterpoints to the barriers described earlier. Although the teacher sometimes shut down some opportunities for students to engage with technology and the curriculum, access to technology facilitated students' ability to leverage their knowledge. Students not only used the digital environments available in the classroom, but they sought ways to go beyond what was afforded. An important facilitator that allowed students to bring in their out of school knowledge was the array of sponsors they had. In particular, familial sponsors played a major role in acting as role models, mentors, and partners for their writing. These facilitators provide a catalyst to third space moments that could be cultivated.

Conclusion and Implications

Our analysis shows a range of ways youth approach teacher-framed literacy tasks and technology use, utilizing their preferences and out-of-school practices. While the teacher created a variety of technology-infused opportunities, her monologic script along with allowing only certain, sanctioned activities using technology provided few explicit opportunities for students to reshape the social norms of the classroom to create a third space (Bhabha, 1994). Still, students developed different stances--particularly repurposing and leveraging--to merge their out-of-school practices with in-school tasks, demonstrating potential for creating third space moments. Barriers to achieving a third space through

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

technology use included the teacher's restricting activities to particular platforms, narrowed orientations towards curriculum, and lack of attention to out-of-school practices. However, access to technology and sponsors, especially familial sponsors, facilitated students' leveraging out of school knowledge and technology practices.

By investigating students' stances and the barriers and facilitators to them, we identified third space moments. These were simply moments--there was not a consistent curricular space provided by the teacher or facilitated by technology. Yet, the moments students described where they brought in ideas from sponsors or saw connections between their out of school literacy practices and school tasks showed the potential for students to merge their cultural capital with curricular content (Skerrett, 2010). Leveraging and repurposing stances reflect student agency, demonstrating that students can go beyond simple acceptance of or resistance to classroom assignments or sanctioned platforms. These stances also show how flexible students can be when navigating the teacher's sanctioned technology and classroom tasks (Moje et al., 2004).

The study suggests that there is still much work to be done to help teachers integrate technology into their classrooms as seamlessly as youth use it. Creating generative third spaces in classrooms on a continual basis will be challenging given the complexity of teachers' work, especially with the increasing demands to integrate technology. However, there are several possibilities for continuing the work to create third spaces in classrooms. First, while introducing students to specific platforms in the classroom, we can allow students to use multiple devices and platforms; not only would this facilitate making use of students' existing digital knowledge but it would assist in crossing boundaries between home and school. Second, teachers could encourage alternative pathways, e.g., allowing students choices in completing assignments using their own devices. Why not allow smart phones

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

where students may have jotted down notes, communicated with others, or drafted ideas for texts? Third, intentionally designing instruction that facilitates leveraging would have benefits for all students. For example, assignments might specifically ask students to reflect on out of school experiences. Finally, we need to consider the critical role of sponsors in cultivating students' literacy growth. It was notable that, when probed, students talked easily about the role of parents and older relatives as models for reading and writing. Youth in the study talked about sharing writing with cousins and peers; they had natural audiences for their writing. Teachers might build upon this by asking students about the roles of family members in literacy learning and specifically valuing these contributions.

Our study demonstrates that classrooms can cultivate student agency, supporting students in connecting ideas and strategies learned at home and in their communities to their classroom contexts. By continuing to bring technology into the classroom and allowing students to leverage their own knowledge of digital environments and out-of-school literacy practices, teachers can create more possibilities to enhance literacy learning within classrooms. Intentionally designing third spaces through digital spaces can facilitate students' understanding and motivation to become lifelong learners and more competent technology users. These suggestions can be applied in a variety of contexts, not only in the United States but in classrooms throughout the world, where teachers and students are grappling with ways to integrate technology and literacy.

References

Abrams, S. S., & Russo, M. P. (2015). Layering literacies and contemporary learning. *Journal of Adolescent & Adult Literacy, 59*, 131–135.

Benson, S. (2010). "I don't know if that'd be English or not": Third space theory and literacy instruction. *Journal of Adolescent & Adult Literacy, 53*, 555–563. http://doi.org/10.1598/JAAL.53.7.3

Bhabha, H.K. (1994). *The location of culture*. New York, NY: Routledge.

Black, R. W. (2009). Online fan fiction, global identities, and imagination. *Research in the Teaching of English, 43*, 397-425.

Britsch, S. J. (2005). 'But what did they learn?' Clearing third spaces in virtual dialogues with children. *Journal of Early Childhood Literacy, 5*, 99-130. doi: 10.1177/1468798405054581

Brandt, D. (2001). *Literacy in American lives*. Cambridge, UK: Cambridge UP.

Burnett, C., & Merchant, G. (2011). Is there space for critical literacy in the context of social media? *English Teaching: Practice and Critique, 10*, 41-57.

Curwood, J.S., Magnifico, A. M., & Lammers, J. C. (2013). Writing in the wild: Writers' motivation in fan-based affinity spaces. *Journal of Adolescent & Adult Literacy, 56*, 677-685.

Doering, A., Beach, R., & O'Brien, D. (2007). Infusing multimodal tools and digital literacies into an English education program. *English Education, 40*, 41–60.

Du Bois, J.W. (2007). The stance triangle. In R. Englebretson (Ed.), *Stancetaking in discourse: Subjectivity, evaluation, interaction* (pp. 139– 182). Philadelphia, PA: John Benjamins.

Dredger, K., Woods, D., Beach, C., & Sagstetter, V. (2010). Engage me: Using New Literacies to create third space classrooms that engage student writers. *Journal of Media Literacy Education, 2*, 85-101.

Ehret, C., & Hollett, T. (2014). Embodied composition in real virtualities: Adolescents' literacy practices and felt experiences moving with digital, mobile devices in school. *Research in the Teaching of English, 48*, 428–452.

Eisenhart, M., & Edwards, L. (2004). Red-eared sliders and neighborhood dogs: Creating third spaces to support ethnic girls' interests in technological and scientific expertise. *Children, Youth and Environments, 14*, 156-177. Retrieved from http://www.jstor.org/stable/10.7721/chilyoutenvi.14.2.0156

Erstad, O., & Sefton-Green, J. (Eds.). (2013). *Identity, Community, and Learning Lives in the Digital Age*. Cambridge, UK: Cambridge University Press.

Freebody, P. (2013). School knowledge in talk and writing: Taking "when learners know" seriously. *Linguistics and Education, 24,* 64–74. http://doi.org/10.1016/j.linged.2012.11.009

Gutiérrez, K. (2008). Developing a sociocritical literacy in the Third Space. *Reading Research Quarterly, 43*, 148-164.

Gutierrez, K., Rymes, B., & Larson, J. (1995). Script, counterscript and underlife in the classroom: James Brown versus Brown v. The Board of Education. *Harvard Educational Review, 65*, 445-471.

Honan, E. (2008). Barriers to teachers using digital texts in literacy classrooms. *Literacy, 42*, 36-43.

Howell, E.,Kaminski, R., & Hunt-Barron, S. (2016). Creating in a participatory culture: Perceptions of digital tools among teachers. *Teaching/Writing: The Journal of Writing Teacher Education, 5,* Article 9.

Hull, G. A., Stornaiuolo, A., & Sterponi, L. (2013). Imagined readers and hospitable texts: Global youth connect online. In D. E. Alvermann, N. J. Unrau, & R. B. Ruddell (Eds.), *Theoretical Models and Processes of Reading (Sixth Edition)*. Newark, DE: International Reading Association.

Hutchison, A. & Reinking, D. (2011). Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly, 46*, 312-333.

Inan, F. A., & Lowther, D. L. (2010). Factors affecting technology integration in K-12 classrooms: A path model. *Educational Technology Research and Development, 58*, 137–154.

Ito, M., Gutiérrez, K. D., Livingstone, S., Penuel, B., Rhodes, J., Salen, K., Watkins, S. C. (2013). *Connected learning: An agenda for research and design*. Irvine, CA: Digital Media and Learning Research Hub.

Jenkins, H., Ito, M., & boyd d. (2016). *Participatory culture in a networked era: A conversation on youth, learning, commerce & politics*. Cambridge, UK: Polity Press.

Johnson, L. L. (2016a). Evolutions, not revolutions in learning to teach with technology. *Journal of Technology and Teacher Education, 24*, 5–35.

Johnson, L. L. (2016b). Writing 2.0: How English teachers conceptualize writing with digital technologies. *English Education, 49*, 28-62.

Kennett, K. (2015, December). *"We're not taking pictures. We're making predictions": Incorporating digital technologies and shaping literate practices in 8th grade ELA*. Paper presented at the Literacy Research Association 65th Annual Conference, Carlsbad, CA.

Lammers, J. C., & Marsh, V. L. (2015). Going public: An adolescent's networked writing on FanFiction.net. *Journal of Adolescent & Adult Literacy, 59*, 277–285.

Leander, K. (2002). Locating Latanya: The situated production of identity artifacts in classroom interaction. *Research in the Teaching of English, 37*, 198-250.

Leander, K.M. (2007). "You won't be needing your laptops to-day": Wired bodies in the wireless classroom. In M. Knobel & C. Lankshear (Eds.), *New literacies and digital epistemologies: Vol. 29. A new literacies sampler* (pp. 25–48). New York, NY: Peter Lang.

Lim, W. Y., So, H. J., & Tan, S. C. (2010). eLearning 2.0 and new literacies: are social practices lagging behind?. *Interactive Learning Environments, 18*, 203-218.

Madden, M., Lenhart, A., Duggan, M., Cortesi, S., & Gasser, U. (2013). Teens and technology 2013. Pew Internet & American Life Project.

McCarthey, S. J. (2002). *Students' identities and literacy learning*. Literacy Studies Series. Newark, DE: International Reading Association and National Reading Conference.

Moje, E.B., Ciechanowski, K.M., Kramer, K., Ellis, L., Carrillo, R., & Collazo, T. (2004). Working toward third space in content area literacy: An examination of everyday funds of knowledge and discourse. *Reading Research Quarterly, 39*, 38–70.

Purcell, K. Heaps, A., Buchanan, J. & Friedrich, L. (2013). How Teachers Are Using Technology at Home and in Their Classrooms. The Pew Research Center.

Saldaña, J. (2013). *The coding manual for qualitative researchers (2nd ed.)*. Los Angeles, CA: Sage.

Skerrett, A. (2010) Lolita, Facebook, and the Third Space of Literacy Teacher Education. *Educational Studies, 46*, 67-84, DOI: 10.1080/00131940903480233

Smith, A.; Hall, M. & Sousanis, N. (2015). Envisioning possibilities: Visualizing as inquiry in literacy studies. *Literacy*, *48*(1), 3-11.

Vasudevan, L., DeJaynes, T. A., & Schmier, S. (2010). Multimodal pedagogies: Playing, teaching and learning with adolescents' digital literacies. In D. E. Alvermann (Ed.), *Adolescents' online literacies: Connecting classrooms, digital media, and popular culture* (pp. 5–25). New York, NY: Peter Lang.

Journal of Literacy and Technology
Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Increasing Motivation of Struggling Readers: Can e-Readers, Apps, and Support Features Help?

Lory E. Haas, Ed.D.
Sam Houston State University
leh015@shsu.edu

Elizabeth Lasley, Ph.D.
Sam Houston State University
eal021@shsu.edu

Thomas Sosebee, M.Ed.
Sam Houston State University
tsosebee@shsu.edu

Donna Cox, Ph.D.
Sam Houston State University
dhc002@shsu.edu

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Abstract

In this exploratory study, researchers analyzed data regarding children's use of e-readers on a weekly basis to determine engagement and motivation to read using a digital device. Findings from a pilot study conducted in the spring of 2015 revealed an increase in motivation to read among six male participants in Grades 1-4 based on interview responses from children and parents, as well as data indicating the completion of 103 books for a total of 1040 minutes read. In this follow-up study, we provided a refined Reading Rainbow app, new Kindle Fires, and included 17 children in Grades K-6 attending an after-school literacy program. Increases in engagement and motivation to read using an e-reader were indicated in the initial weeks of the study; however, a decrease in reading time was noted after the first few weeks for most of the children. Although the majority of children and parents indicated increased motivation to read using the app and digital device versus traditional texts, most children did not continue to read on the device after the tutorial program was completed.

Keywords: literacy, technology, reading motivation, reading apps, app features

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Introduction

Imagine hearing the words, "I read the coolest book last week." "I really like that I can have the book read to me and then I can read it on my own. This helps me understand it better." "Sometimes I listen to the book a few times first, then read it or sometimes I just like to hear the book." "I read three books last week!" "I like being able to return a book and get a new one without waiting a week to go to the library! I just search and download." This is music to the ears of parents and teachers! But, how can we get children truly motivated to read and develop a passion for reading beyond short-term excitement? How can such enthusiasm for reading become sustainable?

Children's motivation to read has long been a challenge and concern for both parents and educators, thus we must continue to seek approaches and tools that work best for each individual child. Technology is an integral part of our everyday lives and children engage in the use of technology most often to play games and communicate with others, but not for purposes of reading. Digital devices may be an engaging tool to motivate some reluctant readers, as increased use of mobile devices is impacting the reading practices for children inside and outside of the classroom (Lamb, 2011). Electronic readers (e-readers) can provide an avenue for children to engage in digital reading which may lead them to read more which improves reading comprehension (Larson, 2010; Union, Union, & Green, 2015). Evidence of e-reader use for struggling readers is minimal at best and these children are often lacking the motivation to read due to reading challenges (Baker & Wigfield, 1999).

E-readers offer a number of advantages over traditional books, such as online access to seemingly endless numbers of texts, the ability to download many texts on a device for easy access, cost benefits, and portability (Jamali, Nicholas & Rowlands, 2009). Additionally, multimodal features of e-readers such as, the use of sound to listen to text being read and the

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

ability to access definitions may increase reading performance through engaged reading (Lefever-Davis & Pearman 2005; Shamir & Baruch, 2011; Shamir & Shlafer, 2012). Further, Gonzalez and Johnson (2012) indicated an increase in reading comprehension for struggling readers using electronic books based on the principles of universal design for learning (UDL). The UDL format includes multiple means of presentation, engagement, action and expression. However, some children, whether struggling or not, may dislike the act of reading and are reluctant to read, no matter the format available, unless teachers require them to complete a reading task (Gambrell, Palmer, Codling, & Mazzoni, 1996; Gonzalez & Johnson, 2012; Henderson, 2011; Padak & Potenza-Radis, 2010). Minimal research, especially experimental studies reported in the literature regarding the impact of reading motivation and engagement using e-books warrants the need for further investigation.

Purpose of the Study

Seeking effective strategies and tools to motivate struggling readers inspired us to investigate the potential of digital devices with reading apps and features as a means to engage students in independent reading, as well as sustain reading motivation of children. This lead to the decision to use an exploratory research approach to guide this study. Therefore, the first purpose of this research study was to investigate the use of e-readers to enhance participation in recreational reading for struggling readers. The second purpose was to explore children's use of digital devices and specific reading features to increase independent reading. A third purpose was to investigate participants' perceptions regarding the use of an e-reader versus traditional texts. Lastly, in this study, we refined and extended a previous study to gain further information on increased motivation and engagement of struggling readers through the use of an e-reader.

After completing the pilot study conducted in spring of 2015, our goal was to further explore and gather data about the recreational reading of struggling readers with the use of e-readers. Documentation from the seven-week study included the number of books read (103), minutes of engagement (1040), and interview responses from children and parents indicated an increase in motivation to read independently. Findings of this short-term pilot study merited further exploration with a slightly larger sample size and expanded time frame.

A second purpose of this research, prompted by the results of the pilot study, was to further investigate specific types of e-readers, apps for e-readers, and software features to support sustainable reading, including access to a variety of texts and genres. Therefore, we explored programs that allowed us as researchers to gather data as to the number of books and minutes read for each of the participants; as well as, examine the types of books the children self-selected to read. In this study, we used an updated version of the initial reading app, new Kindle Fires, and expanded the study to include 17 participants, 5 girls and 12 boys in Grades K-6.

Research Questions

The following research questions were addressed: (a) To what extent will struggling readers use an e-reader to recreationally read outside of school?; (b) What features of the digital device and selected app do children find helpful when using an e-reader?; (c) What are the perceptions of struggling readers on the use of an e-reader versus traditional texts?; and (d) What are the perceptions of struggling readers regarding motivation and engagement in the use of an e-reader to self-select reading materials based on their interests and independent reading level?

Theoretical Framework

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

In the past and present, reading instruction has emphasized the reader's skill development. Such practices were based on the behaviorist learning theory of direct instruction. Children were taught to read through a series of sequenced skills, then drilled and assessed on the acquisition of these skills through a series of worksheets and reading passages (Engelmann, 1980, 2007; Skinner, 1974). Children may be placed in ability groups with instruction provided through scripted, sequential lessons employed to optimize reading skill development. The motivation for this type of reading instruction is extrinsic through frequent and consistent feedback by the teacher.

By the turn of the millennium, indications are that reading instruction has changed due to increased complexity of texts and inclusion of multimodal texts. A constructivist theoretical approach to learning best supports these changes. The theoretical premise is that children construct knowledge through self-directed engagement in the learning process within a specific context, in this case learning to read in the digital age. Children have the opportunity to choose to actively engage in their own learning. Readers construct the meaning of a text through simultaneous interaction with the text, combining prior knowledge, skills, and text features for comprehension (Tompkins, 2013). This can apply quite well to the use of e-readers for children because they can select texts of interest and move through the texts in an ebb and flow process. For instance, digital tools like e-readers allow children to choose what they want to read, go back and reread a section of the text or apply reading app features to support their comprehension of the text at various points when reading. Rvachew, Rees, Carolan, and Nadig (2017) study of 28 kindergarteners indicated text features of print-to-talk and words highlighted in e-books may contribute to the development of emergent literacy skills and increased reading success. Through these interactive processes, children scaffold their own learning (Bruner, 1960). Concepts are formulated within their individual zone of

proximal development for reading comprehension (Vygotsky, 1978). Constructively, children can gain essential experiences through active, intrinsically motivated engagement in the mastery of the reading process.

Review of the Literature

Motivation Theory of Learning

Guthrie and Wigfield (2000) identified five motivational reasons for reading: learning orientation, intrinsic motivation, extrinsic motivation, self-efficacy, and social motivation. Learning orientation refers to learning behaviors that influence learning such as dispositions, emotions, intentions, desire for success and social influences. In a small study of eight first grade students, Ciampa (2012) noted through observation, documentation, and surveys that e-books with text-to-speech storybook reading and reading activities contributed to students' reading motivation, as well as self-efficacy. Observations of students' screen engagement while being read to and their participation in other reading activities demonstrated increased reading motivation. Findings included an increase in motivation when observing students' screen engagement while being read to and their participation in reading activities. Another key component for increased motivation to read using the e-books was the game format and the feedback provided for support during reading activities. Lastly, student interview responses indicated that the opportunities for autonomy and choice promoted self-efficacy.

Motivation is evident in the two theoretical educational frameworks, behaviorism, and constructivism. The key question about motivation becomes why do children do what they do? Why are children extrinsically or intrinsically motivated? Picton's (2014) summary of the National Literacy Trust's survey questionnaire of thousands of children ages 8 to 16 noted an increase in reading motivation and literacy skills because of access to electronic devices (tablets, phones, computers, e-readers). Bandura (1997) suggested that motivation has more of

an effect on our learning than actively participating in a particular lesson or activity. Direct instruction, the behaviorist approach, focuses on concrete consequences such as grades and external rewards that decrease intrinsic motivation to engage in the learning process. This is apparent in Ciampa's (2012) study where online feedback with immediate positive reinforcement for corrective adjustments increased student engagement. Immediate positive feedback influences students' motivation and self-efficacy rather than comparing reading success with other students' success (Ciampa, 2012). According to Deci and Flaste (1995), such an approach represents motivation as a set of goal-oriented outcome-based expectations influenced by the use of extrinsic concrete consequences. Whereas, a sense of autonomy, personal control and a sense of personal aspirations supports intrinsic motivation (Deci and Flaste, 1995). Pintrich and Schunk (2002) explained that intrinsic motivation is the willingness to engage in a task for its own sake, whereas extrinsic motivation denotes a willingness to engage in a task as a means to an end.

Engagement in a task correlates with children's self-efficacy. Self-efficacy is the most significant factor that influences personal aspirations and autonomy (Bandura, 1997). Self-efficacy is an intrinsic state of mind; such as pride or sense of accomplishment for a specific act or behavior. Children's beliefs in their efficacy to control and master their own learning dominates their motivation to achieve in reading or any other endeavor. The expectation of failure contributes to the degree of engagement in a particular task. Therefore, children that demonstrate high self-efficacy for a specific learning task put forth much more effort to accomplish the task, in this case reading. Children with high positive self-efficacy are motivated to invest the time and effort to work more diligently and are persistent in learning. Whereas children with lower self-efficacy who exhibit expectations of failure or anxiety over mistakes they make are less successful. The development of positive self-efficacy heightens

intrinsic motivation, thus promoting active engagement in the learning process. Baker and Wigfield's (1999) research examining fifth- and sixth-grade students' self-efficacy for reading suggested students with low reading self-efficacy might profit from teaching practices that increase self-efficacy. The premise is that students who read well are intrinsically motivated to read. Another factor to consider is Bruner's (1966) acknowledgment that motivation is a necessary precondition and essential element for learning. The interest level of learners stimulates the motivation to learn, not external rewards.

To determine attitudes and behaviors of parents and children regarding motivation to read for fun, Scholastic in conjunction with YouGov (2015) conducted a survey. The survey included 506 parents of children birth to age five, and, 1,026 parents of children, ages six to seventeen. The report indicated a positive effect regarding children's motivation to read, with slightly over 50% reading books for fun. With regard to the use of digital devices for reading, results show an increase in the percentage of children who have read an e-book from 25% in 2010 to 61% in 2015, yet the majority of the children indicate they prefer to read traditional books in print. According to participant responses, the most important factor for motivation to read included the opportunity for children to choose books they found interesting and engaging. Choice was the most significant factor for recreational reading. Intrinsically motivated readers are engaged readers who use metacognitive strategies to monitor their reading comprehension (Long & Szabo, 2016).

Autonomy, including the opportunity to choose, promotes intrinsic motivation for mastery of specific skills through exploration, intuitive and analytical thinking. The purpose or interest level correlates with who controls the learning process. Autonomy and choice promote a sense of internal locus of control. Expectations and choice (locus of control) contribute to autonomy (self-directed actions) and mastery as well as the willingness to put forth the

necessary effort (persistence) to read. The belief in the ability to control and change a particular behavior increases self-efficacy or confidence which evolves to success-oriented motivation.

Maynard's (2010) pilot study examined reading experiences of six young readers, seven to twelve years of age, with e-reader devices: Kindle, Nintendo DS-lite and Apple iPod Touch. The premise for using e-readers was the possibility that e-books could change children's attitudes and increase motivation and enjoyment in reading. Participants were asked to read at least 20 minutes per day using an e-reader. The study specified participant preference for the Kindle because it was easier to use. Interviews with parents and children indicated an increase in reading habits (enjoyment and amount of time) when reading books electronically. Three children preferred e-books reading rather than printed books. The only reluctant reader in the study expressed interest in e-books reading due to the opportunity to choose and download books on a Kindle. Voluntary reading and enjoyment in the interaction with text was also reported. In a more recent study, Abdus (2014) investigated the impact of e-books on the attitudes toward reading of 16 fourth grade students. Eight students read a text using the 'read-to-me' feature on an e-book and eight students read the text independently. Findings revealed students preferred electronic texts and features; however, there were no differences indicated with regard to comprehension among participants in the two groups (Abdus, 2014). One difference of note between the two groups, the group reading the paperback format of the text completed reading the book significantly faster than students reading the e-book.

Pink (2006) surmised that motivation equates to the degree of an individual's sense of autonomy, mastery (competence – desire to improve), and purpose (expectancy – a reason for doing). E-readers may increase the opportunities for reading and learning, yet digital text

may or may not be a motivating factor for reading (Long & Szabo, 2016). The concept of motivation includes the degree or level of ownership. "Control leads to compliance: autonomy leads to engagement" (Pink, 2009, p. 108). Intrinsic motivation connects with a particular level of effort (expectancy) that occurs when a person feels competent and self-determined (Deci & Ryan, 2000). McClanahan, Williams, and Tate's (2012) investigated the use of an iPad with a student with an attention deficit hyperactivity disorder (ADHD) to support the development of reading strategies. The iPad features allow for Wi-Fi data collection, connection to affordable and downloadable applications, touch screen, and ease of use in weight and size. The student's use of the iPad during the six-week tutoring sessions indicated an increase in engagement with the text, attention span, motivation to read, word recognition, and reading comprehension.

Motivational Factors to Read

What about the motivational reasons for reading? Various researchers have identified different motivational factors for reading: attitudes, values, self-concepts, and dispositions (Coiro, 2012; Conradi, Jang, & McKenna, 2014; Schiefele, Schaffner, Möller, & Wigfield, 2012). Duncan and McKeachie (2005) stated "motivation is dynamic and contextually bound and that learning strategies can be learned and brought under the control of the student" (p. 117). The desire to read is based on children's beliefs, purpose and reasons for reading, and the emotional reactions to reading (Pintrich & DeGroot, 1990). It is also noted there are reasons for a lack of motivation to read: reading ability in contrast to their peers; textbook content above grade or reading level; and, lack of interest in the curriculum (Gutherie & Wigfield, 2000). The desire, lack of desire, or motivation to read correlates directly with previously stated research regarding motivation as a whole.

The fact remains that children who read more become better readers, perform higher on standardized tests and become lifelong readers (Wang & Gutherie, 2004). Schiefele, Schaffner, Möller, and Wigfield, (2012) indicated a positive correlation between intrinsic motivation and reading satisfaction because of curiosity, involvement, competition, recognition, grades, compliance, and reading competence (reading skills and comprehension). Additionally, the amount of reading fosters an increase in reading competence (Schiefele, Schaffner, Möller, & Wigfield, 2012). This brings us back to two overarching considerations. How can we get children truly motivated to read and develop a passion for literature? How can we keep children's short-term enthusiasm for reading going?

Motivation and e-Readers

Larson (2010) noted the importance of integrating information and communication technologies (ICT) in classrooms to increase literacy skills. Well-developed digital libraries are sources of a wide array of genres and literature to support a range of reading levels and interests. In a study conducted by Hendrickson (2014), the software program, Raz-Kids, was implemented as part of the literacy curriculum in primary classrooms to provide children an opportunity to read leveled texts online to support a variety of literacy strategies at each student's instructional level.

Readers of all skill levels may experience an increase in motivation to read after interacting with multimodal texts, through the use of technology (Larson, 2010). "Electronic books provide children with editing tools . . . that allow the reader to edit text by inserting, deleting or replacing text; mark passages by highlighting, underlining or crossing out words and using audio comments." (Larson, 2008, p. 123). Another element previously noted by researchers is the opportunity to make a choice. Choice can become a major factor because digital devices extend access to literature beyond the typical mode of delivery. The

motivational aspects for accessing digital sources extend the opportunities for choice (Coiro, 2012; Putman, 2014). The opportunity to choose may improve student attitudes, which elevates the possibilities for developing positive experiences and eventually motivated readers. Choice is based upon what Bandura (1997) referred to as self-efficacy, an individual's belief about his or her ability to engage in a specific task, such as the ability to read.

Educators and parents continually search for ways to encourage and motivate struggling readers; this coupled with having a technological world at our fingertips provided the foundation for this study. Much of the research that has been conducted with regard to e-readers has been connected to determining effects of using digital devices to improve reading achievement in the classroom on standardized test scores. The potential of e-readers to engage developing readers in recreational reading through self-selected texts is a key factor in reading development. As explained previously, motivated learners invest their time and effort to the task of reading. Motivated readers may invest more time to diligently and persistently participate in reading, thus increase their ability to read.

Reading apps and Features to Support Reading

What apps or technical features will increase student motivation, enthusiasm, and passion for reading? The quest to answer this question underpinned our study. Although there are numerous digital reading programs and a variety of apps to support literacy skills and strategies, keeping up with the rapidly changing software, updates to apps, and updates in technological devices can be daunting. Additionally, some of the reading programs available are quite costly and many do not offer a wide array of features to support independent reading; such as, a dictionary and pointing to or highlighting words as they are read aloud to help the reader follow the text. Another challenge is in the compatibility and functionality of programs

with different digital devices or the differing compatibility of hardware packages on various computers.

Considerations for not using e-readers are that not all children like using a digital device to read; some just prefer to read traditional printed materials (Marinak & Gambrell, 2009). Further, some individuals have difficulty navigating through programs and devices, as well as accessing specific features which can support reading (Gregory, 2008). Lastly, the font on some of the e-texts are quite small and there is too much print on a screen which inhibits reading for some children, especially those who are already struggling with reading.

Method

Participants

Participants in the pilot study included six males, three Hispanic and three White, in first-fourth grades. We expanded the current study to 17 children in Grades K-6, who were reading below their grade level and attended an after-school literacy program weekly at a local public library for ten weeks. Initially, there were 6 girls and 14 boys in the study. Two children, one girl in fourth grade, and one boy in sixth grade dropped from the study and returned their e-readers within the first two weeks; however, both continued to attend the tutorial program. Both children indicated that they preferred chapter books which were not provided as an option with the app. A third student in the fifth grade who dropped from the study stated that he did not want to use the e-reader and did not want to read any texts outside of school. He returned his device after four weeks and stated that he did not want to read at home. He did not have negative feelings toward using the e-reader but did not want to read texts of any type for recreational purposes. Further, his mother shared that she preferred the device be given to another child who would use it for reading. Of note, one student, a fourth grade boy, who participated in the pilot study was included in the second study due to

continual technical problems with his Kindle and the inability to download books for the majority of the seven-week period. Presented in Table 1 is the demographic information for participants.

Table 1: *Ethnicity and Grade Level of Participants*

Participants	Girls	Boys
Ethnicity		
Black	2	1
Hispanic	1	3
White	2	8
Grade Level		
Kindergarten	1	
First	1	1
Second	1	3
Third	1	3
Fourth	1	1
Fifth		3
Sixth		1

Tutorial Program Information

The tutorial program the participants attended was located at the local public library and was held weekly for one hour over a ten-week period in the fall and spring. The tutorial program was free and had an average enrollment of 18-25 students per session. Enrollment was open to children in Grades K-6 and they had the option of continuing enrollment from session to session. Tutors for the program were preservice teachers from a local university who were in their junior or senior year of coursework and were hired and trained by the researchers who served as the program directors. The program was small due to location and the fact that it was operated solely through grant funding. Additionally, the program had been

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

offered for five years and enrollment was often based on referrals from teachers for students who were below grade level in reading.

The tutors were trained in assessment instruments and effective reading strategies to support the needs of the children; however, these approaches had been more traditional and similar to classroom approaches of their teachers. Our efforts to find ways to engage children in reading and to motivate them to read outside of school led us to consider e-readers as a tool to engage students in reading. We applied for and received a grant for $3000. 00 to purchase e-readers, cases, and individual reading app accounts for the participants. The funds allowed us to purchase materials for 22 children.

Instrumentation

We explored various reading apps for digital devices, as well as considerations regarding Kindles versus iPads before making final determinations for the study. Based on cost, effectiveness, and durability, Kindle Fires with protective cases were selected for purchase for the participants in the study. Additionally, the Reading Rainbow app was chosen due to specific features offered and the wide array of genres and texts available for young children. One of the most important features guiding our selection of apps was the option that children could have a selected text read to them.

Of note, the Reading Rainbow app used in the pilot study was newly developed and we encountered some issues in the functionality of the app which were addressed by technical support through the Reading Rainbow website. However, at times these issues decreased the opportunity for students to download and access books in the first study. Our instructional technology expert and co-researcher was in constant contact with support staff at Reading Rainbow. The purpose was to continually convey information regarding the functionality of the app in the spring of 2015 and to acquire the cumulative data file for all participants.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Several issues were resolved to enhance the usability of the app and device for participants in the spring 2016 study.

The opening page of the Reading Rainbow Skybrary app displays a cloud-filled sky that supports colorful characters and a banner indicating various genres of texts. Children could download up to five books at a time in their 'virtual backpack' and then drag and drop the book in the return slot when they were finished with the book. Then, children could download another text as needed. Each child's backpack contained their profile, which they were able to set up and change as they desired.

Procedures

From the pilot study we learned that creating individual accounts versus one overall account would allow us to collect data specific to each child's reading experiences. Therefore, individual Reading Rainbow accounts were purchased for a six-month period and set up for each Kindle assigned to a child. This allowed us to collect data to determine the amount of weekly reading time, the number of books attempted and completed, and document the genres selected by each child.

Each student was provided a Kindle Fire with the updated Reading Rainbow Skybrary app to select, download, and read books. Each device was programmed to prevent children from downloading any other apps on the device. This was an important step in the e-reader study as initially students wanted to play games and use the device for purposes other than reading. When they became aware that they could only read on the device they were at first disappointed and then engaged in learning how to use the e-reader and app. All pop-up advertisements were blocked to protect children from inappropriate content or advertisements. Children, parents, and tutors were provided training on how to connect to the Internet through the device, explore texts, select and download books, as well as return them in the drop box.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Additionally, training included how to use the features to support reading, such as highlighting text and the 'read-to-me' feature.

Pre-service teachers from a local university worked with the children in small tutorial groups. The pre-service teachers provided literacy support on a weekly basis but did not use the Kindles. The literacy support was provided as a stand-alone group instructional session. At the end of the tutorial session tutors and researchers made sure children had books downloaded on their Kindle to read throughout the week.

Children were asked to bring their e-reader to each tutorial session. The devices were given to the researchers to allow them an opportunity to make sure there were five books downloaded on each Kindle and the children were not having any technical issues with the device. At the end of each tutorial session, the Kindles were returned and children were given the opportunity to return and download new books using the free Internet access before leaving the public library.

Additionally, researchers engaged the children in brief, informal conversations as they arrived for tutorials each week to determine their level of engagement in using the e-reader. Researchers inquired as to any difficulties with the device through the week and if they were able to access books to read. Further, the tutors allowed the children to share information about books they read the previous week within their tutorial groups. Of note, often the children would discuss what they had read the previous week with their group members and before leaving the sessions some children would make sure they had downloaded a book based on peer recommendation. Through informal discussions, participants were asked their thoughts about using the e-reader versus traditional texts as they dropped off or picked up their e-reader. Notes were taken as to the comments children shared.

The researchers also checked in periodically with parents to see if they were having any technical issues with the digital devices and often parents would share information regarding their child's use of the e-reader. Several parents stated that their child was more engaged with the device and liked to carry it in the car or read at night before going to bed. Some did note that the lack of Internet access at home was an issue and they had to remember to download books when they had access to the Internet between tutorial sessions.

Initial data were not collected the first week of the ten-week tutorial sessions due to technical problems concerning access to the Reading Rainbow app. Although the Reading Rainbow accounts were set up and payment for each was submitted, the app defaulted to a trial period initially and then each Kindle had to be set up a second time before data were able to be collected. Children were allowed to keep the Kindles for the six-month Reading Rainbow account period after the tutorial program was completed in April. Therefore, we were able to continue to collect data through the individual Reading Rainbow accounts through July.

Findings

Data were collected regarding the number of texts and minutes read for each child. Findings were consistent with findings from the pilot study conducted in spring of 2015. The findings provided information as to interaction with reading using the e-reader, yet few conclusive answers as to increased motivation for recreational reading. Presented in Table 2 are the minutes read and books completed by participants.

Table 2: *Number of Minutes Read by Participants*

Participants	Minutes Read	Number of Texts Downloaded	Number of Texts Completed
Girls *n* = 5	650	118	100
Boys *n* = 12	2386	470	395
Total *N*=17	3036	588	495

To answer research question one, struggling readers used an e-reader to read on a recreational basis outside of school for a substantial number of minutes and completed books from a variety of genres. Additionally, children selected and perused books, but returned them in the drop box if they were not interested in reading the text. This is consistent with what individuals do in a library setting; take books from the shelves, scan the text and then determine whether or not to keep it for further reading. Informal conversations with parents each week at the beginning of tutorial session revealed that the children who were using the e-readers were reading more books and for longer periods of time at home than with traditional texts.

With regard to research question two, the 'read-to-me' feature was a favorite among the children as the feature they found most helpful and engaging. Researchers recorded the weekly data and noted that in some instances time spent on a text was quite lengthy. Most children shared that they chose to listen to the text with the 'read-to-me' feature first, then read the text on their own. Children also shared that they liked hearing a book read to them at night and could also use the e-reader without having to use a nightlight. This supported autonomy for struggling readers.

One child, a fourth grade student, who also participated in the pilot study was allowed to participate in the second study based on a request by his parents. The student had been

identified as dyslexic and was reading far below grade level. Additionally, due to many technical problems with his device and the app, he was unable to download books for several weeks in the first pilot study. The student expressed his disappointment in the e-reader experience because he wanted to select his own books and was excited about the features that the e-reader and app would provide for reading support, especially the 'read-to-me' feature. Therefore, based on his limited opportunity to use the e-reader in the first study, along with the updated Kindles and the enhanced app included in the second study, the decision was made to allow him to participate.

This student completed more books than all other children for a total of 167 books and he downloaded 200 overall, some of which were read for short periods of time before returning it to the Skybrary. He selected a wide array of books and liked to read but struggled; therefore, he used the 'read-to-me' feature regularly. This student also chose to take the e-reader to school as he indicated that he preferred using the e-reader because no one knew how 'big' the book was that he was reading (reading level) or the type of book he selected. The e-reader leveled the playing field for him as a reader and he liked the fact that no one knew what he was reading. He shared that this was the first time he liked to read and especially in school during independent reading time. Additionally, his mother often carried the e-reader in her purse so he had it available in the car and at other times when reading could be completed. She explained that she liked the fact that it was small and easy to carry and he had access at all times.

Participants' perceptions of e-readers were ascertained through informal discussions each tutorial session. Children shared how much they liked reading on the device and the fact that they could access more than one book at a time. Children also indicated they liked the option of exploring books from the various clouds and the Reading Rainbow app was easy to

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

use. In addition, children explained that they were required to read at school, but if they checked out a book from the library that they did not like they were not always allowed time to go back to the library and select another book. Further, if they forgot their library book on class library day they were not given the opportunity to check out another book, thus preventing them from having any new reading material for home for up to a week. They liked the ability to download and return books instantaneously, as well as the option to create their own profile and backpack to fit their interests.

The extent of availability along with some degree of interest level correlates with various theories of motivation because of the children's opportunities for choice and their ability to control the reading-learning process (Deci and Flaste, 1995; Deci & Ryan, 2000; Flaste 1995; Guthrie and Wigfield, 2000). Deci's (1971) research indicates that motivation may be measured by the amount of time an individual spends during "free choice". Choice encourages internal locus of control. Locus and controllability refer to feelings of pride, value, achievable outcomes, and accomplishments (Weiner, 2000). The opportunity for control may lead to self-directed learning and mastery as well as willingness to apply the necessary effort to read. Motivation increases with the expectancy of future success based on anticipated personal goals (Weiner, 2000).

To address the final research question, children indicated that they liked having the opportunity to self-select reading materials based on their interests and that if the text was a little too difficult for them to read independently then they would apply the read aloud option so they did not struggle with the book. They would follow along and then at times reread it independently. Of course, this option does not apply to traditional texts and if the book is recorded then the reader must have both the text and a digital device to enhance the reading experience. E-readers make this a more convenient process. Such preferences by the children

may imply that the degree of choice, sense of control over the reading process, and autonomy supports some level of intrinsic motivation for mastery of reading through exploration, intuitive and analytical thinking. However, children were provided with the Kindles and access to the Reading Rainbow app through the end of July. But, only four children accessed their Reading Rainbow accounts after the tutorial sessions ended in April and the few that did continue to read on occasion did not access the accounts to read any texts after May 30th when school was out for the summer. In essence, children appear to be less motivated to continue to read without the connection to the tutoring program or to being in school. The children's response to using the e-reader negates the motivational aspect for increasing the desire to read which was the focus of our exploration.

The potential for positive self-efficacy attributes is still unknown. Intrinsic motivational factors for reading such as attitudes, values, self-concepts, and dispositions were present when children were in the tutorial program. The lack of sustainability, desire, lack of desire, or motivation to read may be attributed to children's beliefs in their expectation of failure or the degree of engagement in self-directed reading. Reading requires effort. A sense of positive self-efficacy motivates someone to invest the time and effort in a task. Lower self-efficacy leads to less self-directed control and effort. In this study, the use the e-readers supported positive self-efficacy. An important consideration, the student identified as dyslexic demonstrated positive self-efficacy when using the e-reader, especially in the classroom. He could reread familiar texts or select a text based on his independent reading level without the stress of his fellow students noting what he was reading. This provided an opportunity for the student who has struggled for years with reading to experience success.

Integrating the need for struggling readers to improve their reading abilities with information and communication technologies (ICT) increased literacy skills to some extent.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

The e-reader as a digital tool provided a digital library for various forms of literature. In addition, the children did use the e-reader to read and explore texts outside of their school setting throughout the ten-week period of the tutorial sessions. They also indicated a preference for using the digital devices versus traditional texts. However, the fact remains that the children in this study only read within structured arrangements with tutoring and parental support. In essence, children appear to be less motivated to continue to read without the connection to the tutoring program or to being in school. Yet, when children read on a regular basis, research indicates that they will perform better on standardized tests and develop a desire to read over a lifetime.

Discussion

Children today are very skilled in the use of technology and often engage in video games and visual media, so much so that it can be even more of a challenge for teachers to motivate children through traditional approaches to instruction. Teachers are challenged to engage and motivate children as active participants in their own learning. This challenge is certainly not new for educators. There is much more to learn about the use of digital devices for encouraging readers to read than ever before.

From a constructivist approach in the use of e-readers, the learner is actively involved in the learning process through authentic reading experiences consistent with their interests in digital devices. Additionally, each individual constructs their own meaning of a text through interaction with the text and self-selection of text support features, as well as control over when to apply them (Harvey & Goudvis, 2007). Lastly, the visual aspect of digital texts is consistent with other digital formats of video games and apps that children are familiar with and engage in using on a regular basis. Supposedly, children who struggle with and are not motivated to read independently are more engaged when they have voice and choice in

selecting texts from many genres and are able to access texts more efficiently. This is supported by Bandura (1997), Bruner (1966) and other theorists who emphasize the importance of intrinsic motivation and self-efficacy as necessary for learning.

Although technology is an integral part of our lives, it may not be a motivating factor for some children to read independently. Based on this study, a positive correlation between intrinsic motivation, reading satisfaction because of curiosity, involvement, and, reading competence is debatable. The amount of intrinsically motivated reading to increase reading competence is unknown. Children in the study needed routines and expectations of school or parental encouragement to read outside of more structured settings.

Considerations

Some of the considerations we encountered were the cost of the Reading Rainbow accounts for a six-month period. With the lack of additional funding, we were not able to continue with the individual accounts. Further, in order to download books to the Kindle, access to the Internet was required. For some participants, this was an issue as they did not have Internet access at home. Therefore, during each tutoring session, the researchers or tutors made sure each child had five books downloaded before the tutoring session ended. However, at times children would forget to bring their Kindle, thus preventing the opportunity for us to check their reading activity or guarantee they had texts to read for the week.

Another consideration with regard to the Reading Rainbow app was that the books available were picture books and children in older grades preferred to read chapter books. The app is relatively new and is being updated so texts for children with higher reading levels will likely be added. The children did like the opportunity to select from various genres based on exploration of the clouds in the Skybrary, although there was some overlap in texts among the genre clouds for text selection. Lastly, some texts displayed a very small font which became a

bit more challenging to read and more visually demanding if there were ~~are~~ complex illustrations on the page.

Future Direction to Explore

Based on the information we gathered in this exploratory study, we have decided to explore the availability of free books to download to the Kindles. Amazon provides access to free downloadable children's books with a wide array of reading levels and genres. This will prevent the issues with Internet access and by setting up one account, researchers can download books and push them to the e-readers. Further, the children will have access to many books versus the five-book limit at a time. Lastly, the free books available for download include a wide array of genres and text levels which may appeal to the children's individual reading needs and interests.

References

Abdus, S. (2014). Student response to e-books: Study of attitude toward reading among elementary school children in Kuwait. *The Electronic Librar*y, 32(4), 458-472. Doi: 10.1108/EL-04-2012-0041

Baker, L., & Wigfield, A. (1999). Dimensions of children's motivation for reading and their relations to reading activity and reading achievement. *Reading Research Quarterly, 34*(4), 452-477. Doi:10. 1598/RRQ. 34.4.4

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Barger, B. P., & Notwell, M. (2013, December). Using nonfiction e-books to engage children in science researcher: The e-books hook. *Science and Children.*

Bruner, J. (1966). *Toward a theory of instruction.* Cambridge, MA: Belknap Press of Harvard University Press.

Ciampa, K. (2012). Electronic storybooks: A constructivist approach to improving reading motivation in grade 1 students. *Canadian Journal of Education, 35*(4) 92-136.

Coiro, J. (2012). Understanding dispositions toward reading on the Internet. *Journal of Adolescent & Adult Literacy*, *55*(7), 645–648.

Conradi, K., Jang, B. G., & McKenna, M. C. (2014). Motivation terminology in reading research: A conceptual review. *Educational Psychology Review, 26*(1), 127–164.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology,* 18, 105–115.

Deci, E. L., & Flaste, R. (1995) *Why we do what we do.* New York, NY: Penguin Books.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry,* 11(4), 227-268.

Duncan, T. G., & McKeachie, W. J. (2005). The Making of the Motivated Strategies for

Learning Questionnaire. *Educational Psychologist, 40*, 117-128.

Eccles, J. S., Wigfield, A. (2002) Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.

Englemann, S. (2007). *Teaching needy kids in our backward system: 42 years of trying,* Eugene, OR: ADI Press.

Engelmann, S. (1980). Direct instruction. *The Instructional Design Library*, Vol. 22. Englewood Cliffs, NJ: Educational Technology Pub.

Gambrell, L. B., Palmer, B. M., Codling, R. M., & Mazzoni, S. A. (1996). Assessing motivation to read. *The Reading Teacher, 49*(7), 518-533. Doi:10. 1598/RT.49.7.2

Gregory, C. L. (2008). But I want a real book: An investigation of undergraduates' usage and attitudes toward electronic books. *Reference and User Services Quarterly, 47*(3), 266-273.

Gonzalez, M. R., & Johnson, E. (2012). Universally designed e-books: Comprehension implications for struggling readers. *Journal of Technology Integration in the Classroom, 4*(2), 5-16.

Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research: Volume III* (pp. 403-422). New York, NY: Erlbaum.

Harvey, S., & Goudvis, A. (2007). *Strategies that work: Teaching comprehension for understanding and engagement*. Portland, ME: Stenhouse Publishers.

Henderson, R. (2011). Classroom pedagogies, digital literacies and the home-school digital divide. *International Journal of Pedagogies and Learning, 6*(2), 152-161.

Hendrickson, B. (2014). The effectiveness of electronic books in the primary classroom. The *Eagle Feather,* 21 September 2016. doi:10. 12794/tef. 2014. 309.

Jacobs, G. E. (2012). Rethinking common assumptions about Adolescents' motivation to use technology in and out of school. *Journal of Adolescent & Adult Literacy, 56*(4), 271-274. doi: 10. 1002/JAAL. 00139

Jamali, H. R., Nicholas, D., & Rowlands, I. (2009) Scholarly e-books: the views of 16,000 academics: Results from the JISC National E-Book Observatory. *Aslib Proceedings, 61*(1), 33 – 47. doi:10. 1108/00012530910932276

Lamb, A. (2011). Reading redefined for a transmedia universe. *Learning & Leading Technology, 37*(4), 13-17.

Larson, L. C. (2008). Electronic reading workshop: beyond books with new literacies and instructional technologies. *Journal of Adolescent and Adult Literacy, 52*(2), 121-131.

Larson, L. D. (2010). Digital readers: The next chapter in E-reader reading and response. *The Reading Teacher*, *64*(1), pp. 15-22

Lefever-Davis, S., & Pearman, C. (2005). Early readers and electronic texts: CD-ROM storybook features that influence reading behaviors. *The Reading Teacher, 58*(5), 446–454.

Long, D. & Szabo, S. (2016). E-readers and the effects on students' reading motivation, attitude and comprehension during guided reading. *Cogent Education,* 3:1197818.

Marinak, B. & Gambrell, L. (2009). Rewarding reading? Perhaps authenticity is the answer. *Teachers College Record,* 1-6.

Maynard, S. (2010). The impact of e-books on young children's reading habits. *Publishing Research Quarterly 26*(4), 236-248.

McClanahan, B., Williams, K., Kennedy, E. & Tate, S. (2012, May/June). A breakthrough for Josh: How use of an iPad facilitated reading improvement, *TechTrends 56*(3),20-28.

Padak, N., & Potenza-Radis, C. (2010). Motivating struggling readers: Three keys to success. *New England Reading Association Journal, 45*(2), 1–7.

Picton, I. (2014). *The impact of e-books on the reading motivation and reading skills of children and young people,* London, UK: National Literacy Trust.

Pink, D. (2006). *A whole new mind, why right brainers will rule the future*. New York, NY: Penguin Group.

Pink, D. (2009). *Drive: The surprising truth about what motivates us.* New York, NY: Riverhead Books.

Pintrich, P. R., & DeGroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33-40.

Putman, S. M. (2014). Exploring dispositions toward online reading: Analyzing the survey of online reading attitudes and behaviors. *Reading Psychology*, *35*(1), 1–31.

Rvachew, S., Rees, K., Carolan, E. & Nadig, A. (2017). Improving emergent literacy with school-based shared reading: Paper versus e-books. *International Journal of Child-Computer Interaction* 1-6.

Schaffner, E., Schiefele, U., & Ulferts, H. (2013). Reading amount as a mediator of the effects of intrinsic and extrinsic reading motivation on reading comprehension. *Reading Research Quarterly, 48*(4), 369 –385.

Schiefele, U., Schaffner, E., Möller, J., & Wigfield, A. (2012). Dimensions of reading motivation

and their relation to reading behavior and competence, *Reading Research Quarterly, 47*(4), 427– 463.

Scholastic (2015). *Kids and family reading* report (5th ed.). USA: Scholastic, Inc. Retrieved from http://www. scholastic. com/readingreport/Scholastic-KidsAndFamilyReadingReport-5thEdition. pdf?v=100

Shamir, A., & Shlafer, I. (2011). E-readers effectiveness in promoting phonological awareness and concept about print: A comparison between children at risk for learning disabilities and typically developing kindergarteners. *Computers & Education, 57*(3), 1989–1997.

Shamir, A., & Baruch, D. (2012). Educational e-readers: A support for vocabulary and early math for children at risk for learning disabilities. *Educational Media International, 49*(1), 33–47.

Skinner, B. F. (1974). *About behaviorism*. New York: Random House.

Tompkins, G. E. (2013). *Literacy for the 21st century: A balanced approach* (6th ed.). Boston, MA: Allyn & Bacon.

Union, C. D., Union, L. W., & Green, T. D. (2015). The use of e-readers in the classroom and at home to help third-grade children improve their reading and English/language arts standardized scores. *TechTrends: Linking Research & Practice to Improve Learning, 59*(5), 71-81.

Vygotsky, L. S. (1978). Mind in society: *The development of higher psychological processes. (*M. Cole. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Cambridge, MA: Harvard University Press. (Original work published 1934).

Wang, J. & Guthrie, J. (2004). Modeling the effects of intrinsic motivation, extrinsic motivation, amount of reading, and past reading achievement on text comprehension between U. S. and Chinese children. *Reading Research Quarterly*, *39*(2), 162-186.

Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective, *Educational Psychology Review*, 12, 1-14.

Journal of Literacy and Technology
Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Early Evidence of the Psychometric Characteristics and Usability of the E-book Quality-Rating Tool in the Primary Grades

Jeremy S. Brueck, Ph.D.
Seton Hill University
jbrueck@setonhill.edu

Joseph A. Salem, Jr., Ph.D.
The Pennsylvania State University
jas1218@psu.edu

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Abstract

With the electronic book a rapidly growing alternative to the traditional book in reading programs, there is an increasing need for classroom-based tools that support e-book selection for use in literacy instruction. This study continues the technical development of an e-book quality-rating tool (EQRT) for teachers, testing its technical adequacy and usability with primary grade teachers. This investigation focused on (1) the reliability of the EQRT on a sample of e-books rated by primary grade teachers, (2) the types of e-books primary grade level teachers select for use in the classroom, and (3) the quality ratings of e-books by primary grade level teachers. Results indicated strong reliability of the tool when teachers were provided access and instruction and a preference towards informational text e-book titles.

Keywords: e-books, elementary, primary grades, literacy

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Introduction

E-books for young children are proliferating, and are increasingly viewed as an appropriate source for literacy exposure to books and reading, especially by parents. Among children and youth, e-book reading has almost doubled since 2010 (Scholastic, 2015) and students report reading from a digital format more frequently than a paper-based format (Picton, 2014). Yet relatively little is known about what makes an e-book a 'good' e-book for beginning reading, particularly in relation to new common core state standards (e.g., text complexity, close reading) (Shanahan, Fisher, & Frey, 2012; Boyles, 2013). With the electronic book a rapidly growing alternative to the traditional book in reading programs, there is an increasing need for classroom-based tools that support e-book selection and use in reading education and instruction. This study describes the application of an e-book quality-rating tool (EQRT) in primary grade classrooms toward the goal of providing an effective and usable tool for instructional decision-making.

Review of the Literature

Few studies have directly examined the instructional design and quality of the e-book as a curriculum resource in reading instruction (Roskos & Brueck, 2009), although studies focused on literacy development have peripherally observed design quality problems. Labbo and Kuhn (2000), for example, commented on the need for better designed digital conventions (e.g., pop-ups) to produce more considerate texts that support comprehension. Shamir and Korat (2009) identified several high level design features beneficial for young learners, such as (a) oral reading with text highlights that illuminate the nature of print (e.g., word boundaries); (b) hotspot activation aligned with text; (c) a dictionary option that allows repeated action by the child; and (d) a game mode separate from text mode. Still, deJong and

Bus concluded, based on their analysis of a corpus of 55 Dutch e-books, that most e-books were of mediocre quality—an observation corroborated by McKenna and Zucker (2009) who found research results to be mixed on the benefits of signature features of e-books, such as narration, animation, music and hotspots for developing reading skill.

This study continues a technical line of research on the design of an e-book quality-rating tool (EQRT), testing its application in the primary grade classroom where reading instruction is more formalized. Three research questions framed the study: (1) What is the reliability of the EQRT on a sample of primary grade e-books rated by primary grade teachers? (2) What types of e-books do primary grade level teachers select for use in the classroom? and (3) How do primary grade level teachers judge the quality of e-books using the content in the EQRT?

Methodology

Description of the EQRT

The existing research base provides potential content items for rating e-book qualities, but does not offer design information relevant to formatting a tool for general use. Available examples, such as the CD-ROM evaluation tool developed by Shamir & Korat (2006) and the extensive *Children's Technology Review* checklist 5-star rating system (Buckleitner, 2011), indicate that a well-formatted tool is organized into salient categories; it describes items in clear terms; it provides easy-to-understand directions and rating scales; it automates calculations; it offers an overall quality rating.

Building on this early design work, Roskos, Brueck & Widman (2009) identified and tested several analytic tools on a corpus of 50 mixed genre e-books from popular online sites. The researchers looked at the technical adequacy and usability of these analytic tools along

three dimensions: multimedia design (how words and pictures are presented); interface design (conventions of use, format and controls); and learning design (basic features of instruction or *the learn about loop* of purpose, content, and feedback). Different analytic tools revealed different design features of an e-book, and Roskos, Brueck & Widman (2009) concluded that to judge e-book quality may require a multi-purpose tool that examines both the *e* (electronic features) and the *book* (text features) of an e-book.

Drawing on the design research, Roskos, Brueck & Widman (2009) developed a prototype tool and observed its effectiveness and usability on a sample of 43 preschool level e-books rated by eight early childhood educators in Head Start classrooms. Results showed that the e-book quality-rating tool performed moderately in terms of reliability, and with some further adjustments in directions and item clarity is ready for wider scale testing toward the goal of a reliable, valid measure of early childhood e-book quality.

Considering these features, the e-book quality-rating tool was further refined to consist of three categories: Ease of Use, Multimedia and Interactivity. Research-based items were derived for each category as seen in Table 1.

The Ease of Use category consists of 6 elements that probe the user interface of the e-book. The Multimedia category is also composed of 7 elements, while the Interaction category contains 4 elements. For each category, the teacher is asked to rate the overall quality of the category on a 5-point scale. An opportunity to provide specific comments regarding each category is the final element in each category.

The mechanics of the tool are powered by Google Docs. The Google Forms tool was used to create the browser-based front end of the tool, publically available at http://bit.ly/eQRTv4public. The back-end of the tool, where user data is submitted and stored,

is a private Google Spreadsheet document. To use the quality-rating tool, the teacher accesses the matrix via URL and then uses the web form to provide element ratings and text comments. (See Figure 1.) The online tool is comprises a short set of directions, an area to provide e-book and rater information including title, genre, source (provider), rater name and also indicate reasons for selecting the e-book that will be rated. Each category and all its elements make up one page of the quality-rating tool. The teacher-rater completes each data entry point using a combination of text, paragraph text and radial buttons. A total of 76 data entry points are present in the quality-rating tool. (See Appendix A).

Description of Primary Grade E-book Sample

E-books for young children are like storybooks that are known and loved in some ways. While features of e-books mirror those observed in traditional children's literature, e-books add new, digital features. These digital additions to print are different in a manner that is profoundly changing the storybook as a piece of early literacy learning (Roskos, Burstein & You, 2012). More recent research indicates that e-books may support emergent literacy development through engagement and scaffolding (Moody, 2010). However, there is still a lack of empirical evidence that explains the extent to which e-books support children's emergent literacy development. Additionally, there is some evidence that indicates children's e-books may support comprehension and vocabulary development (Korat, 2010) and comprehension. For the purposes of this study, e-books are categorized into 3 main types that vary depending on the kinds of digital interactive media they employ. (See Table 2).

The EQRT was applied and tested on a sample of teacher-selected e-books from a corpus of approximately 638 e-books drawn from a master inventory of web-based e-book collections available through TumbleBooks (http://www.tumblebooks.com/) and Scholastic

Book Flix (http://teacher.scholastic.com/). E-book genres available in the inventory consisted of 211 non-fiction and 427 fiction titles. E-book types in the sample consisted entirely of media e-books. This type of e-book can range from audio versions of a story to more of a movie-type presentation. Features may include narration, basic animations and print highlighting. These e-books may be accessible through a web-browser or as a mobile app or file, and most often they are limited to "video player" functionality.

Teacher Participants

The Center for Literacy in a College of Education at a Midwest public university used funds from a state educational technology agency to form stronger connections to local school districts through the Digital Text Initiative (DigiTXT) Teacher Planning Grant. A purposive sampling of nine early elementary school teachers was invited to participate in a state Teacher Planning Grant through referrals from each teacher's school administration, based upon proficiencies in utilizing technology for instruction. Nine Caucasian females – ranging from late 20s to late 40s – participated in the study, which took place in three school districts near a Midwestern city. These teachers had a reputation for promoting classroom environments conducive to computer-based learning and technology integration. Bloomberg and Volpe (2008) stated that the "logic of purposeful sampling lies in selecting information-rich cases, with the understanding of the phenomenon under investigation [and] the participants' ability to provide information about themselves and their setting" (p. 69).

Procedures

As part of a program titled Digital Text Initiative (DigiTXT), a group of early elementary teachers received access to and training to use an e-book library. Building upon an e-book instructional model (Roskos, Burstein, You, Brueck & O'Brien, 2011) that is

purposefully underspecified to provide a broad-view of what happens when e-book information and communication technologies are inserted into the early elementary classroom, the DigiTXT model was implemented in nine early elementary classroom sites. All the classrooms were located in the Midwest region of the United States. Classrooms from 3 different local educational agencies (LEAs) were a part of the study. Grade levels represented included four grade 2, three grade 1 and 2 kindergarten classrooms.

Each participating DigiTXT classroom was provisioned to meet the specifications for the e-book nook, an Information and Communications Technology (ICT)-rich, high quality language- and literature-rich environment for implementation of the e-book instructional model as listed in Table 3.

A large body of research shows the powerful influences of environment on young children's language and literacy use, including book reading (Neuman & Celano, 2001; Roskos & Neuman, 2001). Access to technology, media, visuals, print media and books is a strong contributor to students' development of print knowledge (Uchikoshi, 2009; Goldstein et al., 2016) while time to talk about books and to engage in play also have a bearing on the amount of oral language use and word learning (Justice, Kaderavek, Fan, Sofka, & Hunt, 2009; Roskos, Ergul, Bryan, Burstein, Christie & Han, 2008).

Teacher Training

Participating teachers were provided instruction in design strategies and skills that enrich environments with language, literacy and content through face-to-face professional development and online tutorials (Figure 2.) that provided examples and design skill practice. The online training can be found at http://youtu.be/XynmIyGa268. The focus of the teacher instruction was on the development of procedural knowledge based on a set of design

principles (Roskos & Vukelich, 2008) and included program introduction, an overview of e-books for young children, accessing and sharing e-books, identifying quality e-book resources, completing an e-book quality rating using the EQRT, developing classroom spaces for e-book reading and vocabulary instruction. A web-based portal was developed to serve as a repository for all professional development materials.

As part of teacher training, quality indicators of children's e-books were provided and examples were shared. Developing a shared understanding of each category and both high-quality and low-quality examples between teacher raters was considered crucial road towards ensuring reliability and validity in the study. The key characteristics of each category that were shared with the teacher raters can be found in Table 4.

Data collection

Building on earlier work by Roskos, Burstein, You, Brueck, & O'Brien (2011), an e-book instructional model was implemented in the e-book nook area of the nine DigiTXT early elementary classrooms, with multiple small groups (n=4) of children. The nine early elementary teachers self-selected e-books from the TumbleBooks and Scholastic Book Flix corpus of media e-books and shared them with their students over two four-week periods. Following each e-book shared reading session, the teachers completed the E-book Quality-Rating Tool.

Reliability

The three constructs were found to be used reliably by the raters in the pilot phase. Inter-rater reliability was established by calculating two-way random interclass correlation coefficients (ICC) for each of the three constructs as each are measured on a continuous scale (Kottner et al., 2011). All three constructs had ICC's near the 0.70 threshold that is a common

threshold in the social sciences for reliability analyses (Nunnaly & Bernstein, 1994). Even if no threshold is sought, the ICC's represent strong positive correlation coefficients among the raters. See Table 5 for ICC's for each construct.

Data Analysis

Frequency data were used to view EQRT data from a broad perspective. Means on each of the three constructs (Ease of Use, Multimedia, and Interactivity) were compared using the One-Way Analysis of Variance (ANOVA) to determine whether a statistically significant difference could be found based on e-book type (literary or informational text), e-book source (Tumblebooks or Book Flix) and the grade levels taught.

ANOVA analyses found a significant difference in means on the Multimedia construct by e-book type [$F(1,132) = 4.208$, $p = 0.042$], by e-book source [$F(1,132) = 5.444$, $p = 0.021$], and by grade level of the rater [$F(2,131) = 3.307$, $p = 0.040$]. Significant differences were also found on the Interactivity construct among the grade levels of the raters [$F(2,131) = 5.980$, $p = 0.03$]

Results

Ratings for 65 e-books were collected during the first four-week period, while 69 ratings were collected during the second four-week period for a total of 134 ratings. Of those, the nine elementary teachers rated 84 unique titles. Literary e-books made up 45 of the total ratings while 89 informational e-books were rated. E-books from the Tumblebook collection accounted for 59 of the total ratings while 75 Scholastic Book Flix titles were rated. Mean ratings for each of the EQRT categories can be found in Table 6.

Ease of Use Ratings

The EQRT data show virtually no difference in ratings between literary text (M = 3.84, SD = 0.92) as compared to informational texts *(*M = 4.00, SD = 0.88), $t(132) = 0.94$, $p = 0.35$, $r = 0.09$. There were virtually no differences in ratings in this category between the sources of e-books; Tumblebooks (M = 4.07, SD = 0.74) and Scholastic Book Flix (M = 3.85, SD = 1.01), $t(132) = 1.37$, $p = 0.17$, $r = 0.12$. There were virtually no differences in ratings among grade kindergarten teachers (M = 3.74, SD = 1.41), first grade teachers (M = 4.02, SD = 0.91), and second grade teachers (M = 3.98, SD = 0.78), $f(2) = 0.91$, $p = 0.41$.

Multimedia Ratings

Analysis of the multimedia ratings produced the highest mean rating (M = 4.19, SD = 0.75) of all three categories. Literary texts were rated significantly lower (M = 4.00, SD =0.88) by the teachers than informational text (M = 4.28, SD = 0.67), $t(132) = -2.05$, $p = 0.04$, r = 0.17. In this category, Tumblebooks were rated statistically significantly higher (M = 4.36, SD = 0.58) than Book Flix (M = 4.05, SD = 0.85), $t(132) = 2.33$, $p = 0.02$, $r = 0.20$. There were statistically significant differences in ratings among grade kindergarten teachers (M = 4.33, SD = 0.48), first grade teachers (M = 4.33, SD = 0.60), and second grade teachers (M = 4.00, SD = 0.92), $f(2) = 3.31$, $p = 0.04$.

Interaction Ratings

The final category, interaction, was the lowest rated of the three EQRT categories examined (M = 3.91, SD = 0.75). Teacher ratings show virtually no difference in ratings between literary texts (M = 4.04, SD = 0.77) than informational texts (M = 3.84, SD = 0.74), $t(132) = 1.48$, $p = 0.14$, $r = 0.13$. There were virtually no differences in ratings in the interaction category between the sources of e-books; Tumblebooks (M = 3.90, SD = 0.68) and Scholastic Book Flix (M = 3.92, SD = 0.80), $t(132) = -0.17$, $p = 0.87$, $r = 0.01$. There were

statistically significant differences in ratings among grade kindergarten teachers (M = 3.48, SD = 0.76), first grade teachers (M = 4.04, SD = 0.62), and second grade teachers (M = 4.00, SD = 0.67), $f(2) = 5.98$, $p = 0.00$.

Discussion

This study tested the reliability of primary grade level teachers using the E-book Quality Rating Tool for judging qualities of e-books in three categories: ease of use, multimedia and interaction. The study also provided insight into the types of e-books primary grade level teachers select for use in the classroom and the quality of teacher-selected e-books. From a macro perspective, access to quality tools assists teachers in making good decisions about the educational resources they use to deliver reading instruction. High-powered learning environments have quality materials at their core.

The EQRT was found to be reliable within a small group of primary grade level teachers who participating in the Digital Text Initiative. When provided access and instruction (i.e., PD on technology and an e-book instructional model) primary grade level teachers were able to incorporate e-books into their classroom curriculum and provide meaningful rating data through the use of the EQRT. Interestingly, primary grade level teachers selected informational text over literary text at a nearly 2:1 margin, while the corpus of e-books available for teacher selection finds a much larger number of literary titles as compared to informational text. Primary grade level teachers also rated informational e-books higher than literary e-books in both the ease of use and multimedia categories, while indicating they were lower in interaction than their literary counterparts. So, while informational e-books were less available and lower in interaction, primary grade level teachers still gravitated to these types of texts for use in their classrooms.

A second insight is that the selection of Scholastic Book Flix titles over Tumblebooks when EQRT data indicated that primary grade level teachers rated Tumblebooks higher in both ease of use and multimedia categories and nearly equal in interaction quality. While not addressed by the EQRT, this may be due to the fact that the Scholastic website provides an e-book index that pairs classic narrative-driven e-books with related nonfiction e-books.

The final insight lies within the actual e-book titles themselves. Primary grade level teachers seemed to have significant overlap in the titles that they selected. There were 26 unique titles that were selected and rated by two or more primary grade level teachers. In six cases, at least two-thirds of the teachers selected the same e-book title for use in their classroom. While this is helpful in establishing reliability of the EQRT, this study offers no insight into the additional criteria primary grade level teachers consider when selecting an e-book for use with students (e.g., holidays, curricular ties, themes, content area integration).

Limitations

While this study sheds some light on what types of e-books primary grade level teachers are selecting for use in their classroom, no research is without limitations. The findings do not indicate that all primary grade level teachers prefer informational e-books to literary e-books, rather, they expose the need to probe more deeply along many lines to more fully understand the "how" and "why" of teacher e-book selection. The EQRT proved to be usable in this project, however, it must still be considered whether the content of the EQRT, limited to mainly user interface and multimedia criteria is valid for judging the qualities of primary grade level e-books. How to consider the instructional content and curricular ties an e-book offers to a teacher and a reader and how that actively contributes to an overall e-book rating that is useful for a teacher is still missing from the tool. These limitations need to be

addressed in EQRT revisions and ways found to include content factors and teacher decision-making considerations in judging the efficacy of the tool.

As this is a preliminary study of the EQRT, evidence of its content validity was not gathered. A study of content validity must be incorporated into subsequent revisions of the instrument. Both a confirmatory factor analysis and a content expert analysis of the items are recommended for the next significant revision of the EQRT.

Conclusion

Quality materials matter in creating high-powered learning environments. As e-books for young children proliferate, teachers need practical tools for instructional decision-making that support standards and ensure effective reading experiences. Few tools for evaluating e-books in early childhood education exist, and those that do are largely research artifacts that have not been rigorously tested under real world conditions. This effort to create an effective and preferable tool for teacher use are both timely and relevant towards the design of a digital learning landscape in the early elementary classroom.

References

Bloomberg, L. D., & Volpe, M. (2008). *Completing your qualitative dissertation: A roadmap from beginning to end*. Thousand Oaks: Sage.

Boog, J. (2012), eBook Revenues Top Hardcover. Retrieved August 3, 2017, from http://www.mediabistro.com/galleycat/ebooks-top-hardcover-revenues-in-q1_b53090.

Boyles, N. (2013, Dec. - Jan.). Common Core: Now What? Closing in on Close Reading. *Educational Leadership*, *70*, 36-41. Retrieved August 3, 2017, from http://www.ascd.org/publications/educational-leadership/dec12/vol70/num04/Closing-in-on-Close-Reading.aspx.

Buckleitner, W. (2011). The children's eBook revisited. *Children's Technology Review, h19* (130), 6-12. Retrieved August 3, 2017, from http//:childrenstech.com.

Goldstein, H., Kelley, E., Greenwood, C., McCune, L., Carta, J., Atwater, J., & Spencer, T. (2016). Embedded Instruction Improves Vocabulary Learning During Automated Storybook Reading Among High-Risk Preschoolers. *Journal of Speech, Language, and Hearing Research*, 1-17.

Justice, L., Kaderavek, J., Fan, X., Sofka, A., & Hunt, A. (2009). Accelerating preschoolers' early literacy development through classroom-based teacher-child storybook reading and explicit print referencing. *Language, Speech, and Hearing Services in Schools, 40*, 67-85.

Kids and family reading report. (2015). New York, NY: Scholastic, Inc. Retrieved August 3, 2017, from http://www.scholastic.com/readingreport/.

Korat, O. (2010). Reading electronic books as a support for vocabulary, story comprehension and word reading in kindergarten and first grade. *Computers and Education, 55*(1), 24–31.

Kottner, J., Audige, L., Brorson, S., Donner, A., Gajewski, B., Hrobjartsson, A., Streiner, D. (2011). Guidelines for reporting reliability and agreement studies (GRRAS) were proposed. *Journal of Clinical Epidemiology 64,* 96-106.

Labbo, L., & Kuhn, M. (2000). Weaving chains of affect and cognition: A young child's understanding of CD-ROM talking books. *Journal of Literacy Research, 32*(2), 187-210.

McKenna, M., & Zucker, T. (2009). Use of electronic storybooks in reading instruction. In A. Bus and S. B. Neuman (Eds.), *Multimedia and literacy development*, (pp. 254-272). New York: Routledge.

Moody, A., (2010). Using electronic books in the classroom to enhance emergent literacy skills in young children. *Journal of Literacy and Technology*, 11, 22-52.

Neuman, S., & Celano, D. (2001). Access to print in middle-and low-income communities: An ecological study of four neighborhoods. *Reading Research Quarterly, 36,* 8-24.

Nunnally, J.C., & Bernstein, I.H. (1994). Psychometric theory. New York: McGraw-Hill.

Picton, I. (2014, September). *The Impact of ebooks on the Reading Motivation and Reading Skills of Children and Young People: A rapid literature review.* National Literacy Trust. Retrieved August 3, 2017, from http://www.literacytrust.org.uk/assets/0002/3898/Ebooks_lit_review_2014.pdf.

Roskos, K., & Brueck, J. (2009). The eBook as a learning object in an online world. In A. Bus & S. B. Neuman (Eds.), *Multimedia and literacy development* (pp. 77-88). New York: Routledge.

Roskos, K., Brueck, J., & Widman, S. (2009). Investigating analytic tools for e-Book design in early literacy learning. *Journal of Interactive Online Learning, 8*(3), 218-240.

Roskos, K., Burstein, K. & You, B. (2012). A typology for observing children's engagement with e-books at preschool. *Journal of Interactive Online Learning, 11*(2), 47-66.

Roskos. K., Burstein, K., You, Byeong-Keun, Brueck, J., & O'Brien, C. (2011). A Formative Study of an eBook Instructional Model in Early Literacy. *Creative Education, 2*(1), 10-17.

Roskos, K., Ergul, C., Bryan, T., Burstein, K., Christie, J., & Han, M. (2008). Who's learning what words and how fast? Preschoolers vocabulary growth in an early literacy program. *Journal of Early Childhood Education, 22*(3), 275-290.

Roskos, K. & Neuman, S.B. (2001). The environment and its influences for early literacy teaching and learning. In S.B. Neuman& D.K. Dickinson (Eds.), *Handbook of early literacy research* (281-294). New York: Guilford Press.

Roskos, K., & Vukelich, C., (2008). Quality counts: design and use of an early literacy program review tool. In Justice, L., & Vukelich, C., (Eds), Achieving excellence in preschool literacy instruction. New York: Guilford Publications.

Shamir, A., & Korat, O. (2006, June). *The educational electronic book as a tool for supporting children's early literacy.* Presentation at the KNAW Conference: Amsterdam, The Netherlands, June, 2006.

Shamir, A., & Korat, O. (2009). The educational electronic book as a tool for supporting children's emergent literacy". In A. Bus and S. B. Neuman (Eds.), *Multimedia and literacy development*, (pp. 168-181). New York: Routledge.

Shanahan, T., Fisher, D., & Frey, N. (2012, March). Reading: The Core Skill: The Challenge of Challenging Text. *Educational Leadership*, *69*, 58-62. Retrieved August 3, 2017, from http://www.ascd.org/publications/educational-leadership/mar12/vol69/num06/The-Challenge-of-Challenging-Text.aspx.

Uchikoshi, Y. (2009). Effects of television on language and literacy development. In A Bus & SB Neuman (Eds). *Multimedia and literacy development* (pp182-195). New York: Routledge.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Table 1: *E-book Quality Rating Tool Categories*

Category	**Feature**
Ease of Use	Start Page
	User Guidance
	Page Numbers
	Start/Stop Buttons
	Forward/Back Buttons
	E-book Controls
Multimedia	Fonts
	Text Layout
	Narration Mode
	Print Highlighting
	Audio
	Graphics
	Animated Content
Interaction	Text Interactions
	Illustration Interactions
	Game or Quiz Interactions
	Educational Content Interactions

Table 2: *Types of Children's E-books*

Type	**DESCRIPTION**
Static E-books	Often referred to as "eReaders." Static e-books are digital copies of traditional texts. Readers access the text using an eReader like the iPad, Nook or Kindle. eReader software sometimes provides enhancements like a search feature, highlighting & notes option.
Media E-books	Encompassing a rather wide spectrum, Media e-books can range from audio versions of a story to more of a movie-type presentation. Features may include narration, basic animations and print highlighting. These e-books may be accessible through a web-browser or as a mobile app or file, and most often they are limited to "video player" functionality. FWD/BCK, PLAY/PAUSE
Interactive E-books	These e-books require varying levels of interaction between reader and book. Features range widely but can include user-controlled animations, tap-to-hear word pronunciations, built-in dictionaries/definitions, games and puzzles

Table 3: *Specifications for the E-book Nook*

Component	**Specifications**
Location	Well defined; teacher can see the screen as well as all other centers in the class; and other children recognize the boundaries.
Signage	Sign at eye level with name and picture of local children using the center.
Space	Seating for five comfortably (including one teacher); well-lit; neat and non-distracting; computer screen is visible and touchable/accessible by all participants; contemporary-area "screams the theme" of e-book Nook; colors are not distracting.
Acoustics	Low noise level so all can hear the e-book; use of soft materials e.g., carpet, bean bags, pillows is evident.
Access	Dependable high speed Wi-Fi or wired internet; three + grounded power outlets or surge protector power strip. No cables longer than 6 ft.; no exposed wiring or cables.

Table 4: *Key Characteristics of EQRT Categories*

Category	**Key Characteristics**
Ease of Use	The digital book should be easy to navigate and use; it should employ conventions appropriate to books (e.g., a cover page), yet include adaptations best suited to the electronic environment in terms of physical interaction (e.g., touching, orienting to print,

	scrolling, locating and adjusting).
Multimedia	The multimedia characteristics of digital books should enhance the reading experience. Audio, video, and image assets should be well integrated with the content and support the construction of meaning. Visuals should incorporate quality images that inform the message.
Interactivity	The digital medium should be fully utilized to allow readers' choice and participation; it should support the flow of text from one screen page to the next. It should allow for augmentations that reach beyond the immediate display of the screen page.

Table 5: *Intraclass Correlation for Each Construct*

Category	**Intraclass Correlation**	**Raters**	**Titles**
Ease of Use	0.753	6	10
Multimedia	0.752	6	10
Interactivity	0.638	6	10

Table 6: *Mean Ratings for EQRT Categories*

Category	**Mean**	**Range of Scores**
Overall Ease of Use	3.95	1.0 – 5.0
Overall Multimedia	4.19	2.0 – 5.0

Overall Interaction	3.91	1.0 – 5.0

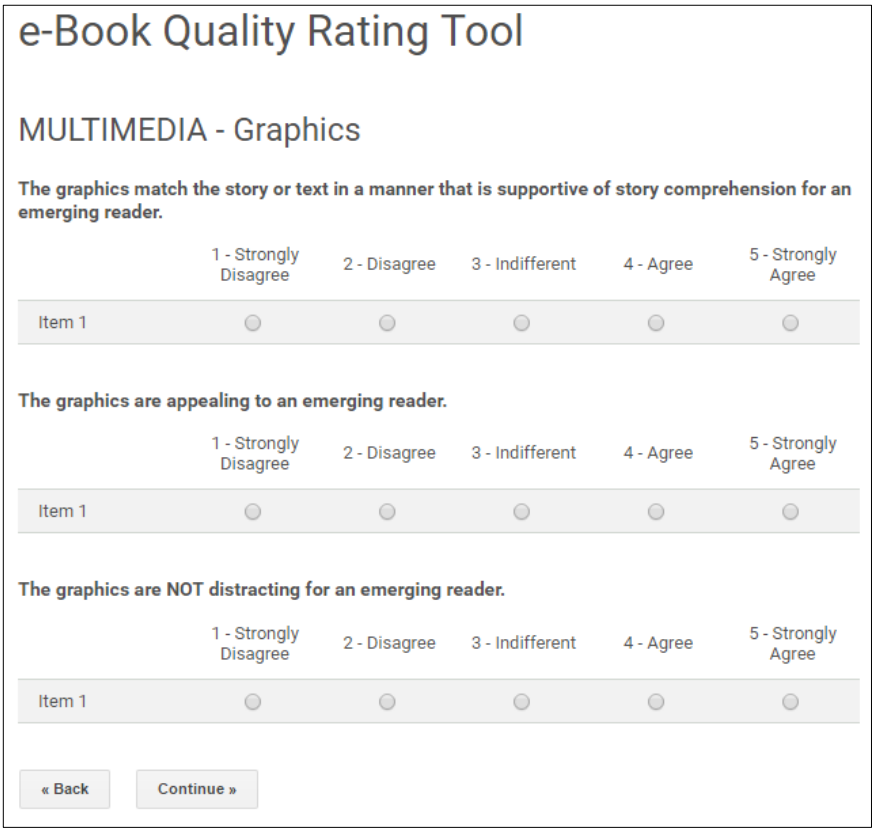


Figure 1. Sample of the E-book Quality-Rating Tool, Version 4

ISSN: 1535-0975

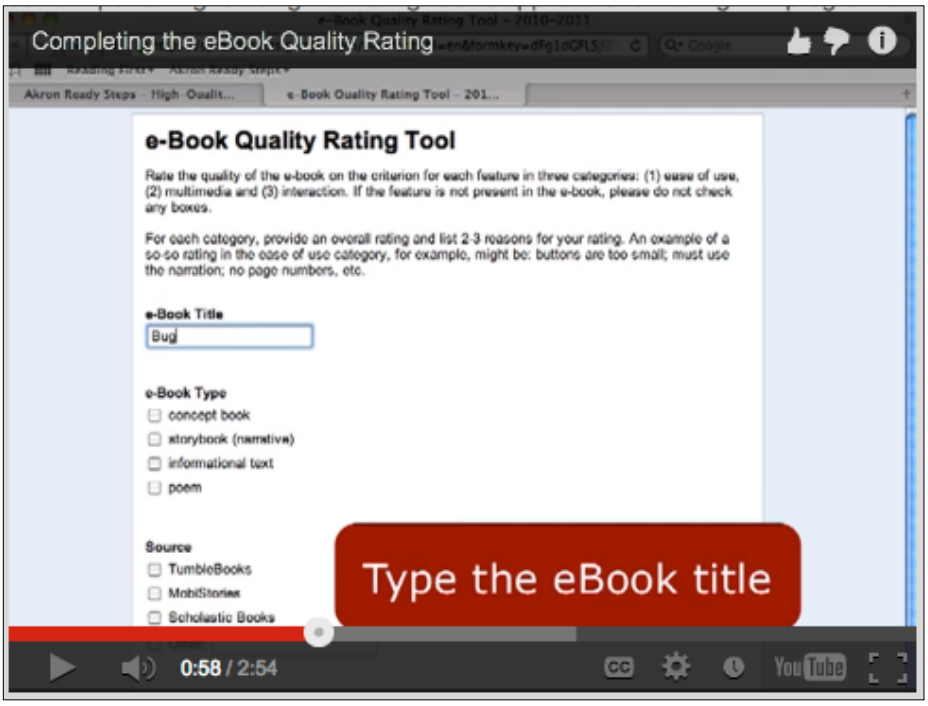


Figure 2. Screenshot of Online Tutorial

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Appendix A

E-book Quality Rating Tool Criteria

Category	Feature	Criterion
Ease of Use	Start Page	The e-book has a clear Start Page. The Start Page may also be considered the “Cover” or “Title Page” of the e-book.
		The Start Page contains the e-book TITLE
		The Start Page contains the e-book AUTHOR.
		The Start Page contains the e-book ILLUSTRATOR.
		It is clear where the child should ‘click’ in order to return to the Start Page, or "cover," from any point in the story.
	User Guidance	The e-book includes directions that explain how to “read” the e-book. The directions may be composed of text, images, or audio prompts. The directions may occur as part of an Introduction or may be viewed/accessed by clicking on a ‘Help’ button.
		The directions are presented in a manner that

		is easy for children to follow.
	Page Numbers	The e-book includes numerals on each page of the story to identify the page number.
		The page numbers are prominently displayed on each page, making them easy to locate.
	Start/Stop Buttons	The e-book has buttons that allow the child to "play" and "stop" the story.
		The buttons are identified with text labels. Text labels could include, but not be limited to, PLAY, STOP or PAUSE.
		Using the Start/Stop buttons would be easy for a child.
	Forward/Back Buttons	The e-book has buttons that allow the child to manually "turn the pages" of the e-book.
		The e-book Forward/Back buttons are identified with text labels. Text labels could include, but not be limited to, FORWARD, BACK, PREVIOUS or NEXT.
		It is clear where the child should 'click' in order to turn the e-book pages FORWARD or BACK.

	E-book Controls	The operation, or clicking of the buttons, of the e-book is within a preschool child's motor skill range
		The way the buttons are laid out on the screen supports a preschool child's independent use of the e-book.
Multimedia	Fonts	The e-book varies font sizes to identify headings and text.
		The e-book uses block letter fonts that support letter-recognition for an emerging reader.
		Use of font styles (italic, bold, underline) is consistent throughout the e-book.
		Use of font styles (italic, bold, underline) improves the readability of the e-book.
	Text Layout	Amount of text per screen is appropriate for an emerging reader
	Narration Mode	The e-book includes audio narration, i.e., it is read aloud to the child.
		The child can toggle the e-book narration ON/OFF to allow independent reading.

		The e-book Narration buttons are identified with text labels, such as ON, OFF or MUTE.
		It is clear where the child should 'click' in order to turn the e-book narration ON or OFF from any point in the story.
		Using the narration control buttons would be easy for an emerging reader.
	Print Highlighting	The e-book includes print highlighting, or tracking, of the text as it is read aloud.
		The print highlights are synced with the narration at paragraph, phrase or word level.
		The print highlights support left-to-right, and top-to-bottom text tracking for an emerging reader.
	Audio	The e-book includes auxiliary audio, like music or sound effects that are not part of the narration of the story or text.
		The auxiliary audio is NOT distracting for an emerging reader.
		The auxiliary audio matches the story or text in a manner that is supportive of story

		comprehension for an emerging reader.
	Graphics	The e-book includes graphics, which could be in the form of illustrations, photos, or pictures.
		The graphics match the story or text in a manner that is supportive of story comprehension for an emerging reader.
		The graphics are appealing to an emerging reader.
		The graphics are NOT distracting for an emerging reader.
	Animated Content	The e-book contains animated content, such as animated pictures or videos, which are not part of the narration of the story or text.
		The animated content can be toggled ON and OFF.
		The animated content matches the story or text in a manner that is supportive of story comprehension for an emerging reader.
		The animated content is NOT distracting for an emerging reader.

Interaction	Text Interactions	The e-book allows a child to access “hot spots,” or click, on text items at the sentence, word, or letter level.
		After clicking on the text, the action that follows matches the story or text in a manner that is supportive of story comprehension for an emerging reader. Examples of this type of interaction may include, but are not limited to, the pronunciation of the word or letter or a dictionary option.
		The text interactions are appealing to an emerging reader.
		The text interactions are NOT distracting for an emerging reader.
	Illustration Interactions	The e-book provides the child with an opportunity to access "hot spots" or click on story graphics, illustrations or pictures.
		The interactions with story graphics, illustrations, or pictures provide auditory or visual options to encourage child exploration.
		The interactions with story graphics, illustrations or pictures are supportive of

		story comprehension for an emerging reader.
		The interactions with story graphics, illustrations or pictures are supportive of building vocabulary for an emerging reader
		The interactions with story graphics, illustrations or pictures are supportive of building content area knowledge for an emerging reader.
		The illustration interactions are appealing to an emerging reader.
		The illustration interactions are NOT distracting for an emerging reader.
	Game or Quiz Interactions	The e-book provides the child with an opportunity to access "hot spots" or click on buttons that activate games or quizzes. Clicking the link to a game or quiz may open the game inside the e-book or link you to an external web address.
		The game or quiz interactions are connected to the e-book theme or topic.
		The game or quiz interactions are meaningful

		to building vocabulary.
		The game or quiz interactions are meaningful to building content area knowledge.
		The game or quiz interactions are appealing to an emerging reader.
		The game or quiz interactions are NOT distracting for an emerging reader.
	Educational Content Interactions	The e-book provides the child with an opportunity to access "hot spots" or click on buttons that with an opportunity to interact with disciplinary content in one or more areas, including, but not limited to, vocabulary.
		The interactions with educational content provide auditory or visual options to encourage child exploration.
		The interactions with educational content are meaningful to building vocabulary.
		The interactions with educational content are meaningful to building content area knowledge.

		The interactions with educational content are appealing to an emerging reader.
		The interactions with educational content are NOT distracting for an emerging reader.

Journal of Literacy and Technology
Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Developing Media and Gender Literacy in the High School Classroom

Elizaveta Friesem, Ph.D.
Media Education Lab
lisa.friesem@gmail.com

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Abstract

This study explores the ability of media literacy classes to help students learn about issues of gender by having them critically engage with media texts. It is based on the premise that principles of media literacy education and pedagogy of multiliteracies are essential for helping people engage, in a reflective and transformative way, in communication practices mediated through technology. I used ethnographic methods (observations, as well as individual and group interviews) and the case study approach to answer the following questions: How do media and gender classes help students reflect on their relationship with the media? What changes do media and gender programs produce in students' perceptions and actions? How do students use what they have learned in class for their lives outside of the classroom? I discovered that media and gender classes have a long-lasting agenda-setting effect, and are potentially able to encourage students to engage in social action (broadly understood).

Keywords: media literacy education, multiliteracies, gender, media representations, social action

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

This study explores the ability of media literacy classes to help students learn about issues of gender by having them critically engage with media texts. It is based on the idea that new literacy pedagogy should develop multiple modes of meaning-making (New London Group, 1996). Our identities, which exist on the intersection of gender, race, sexuality, class, physical ability, and religion, are shaped through interactions with a variety of social institutions. These institutions include family (Early Gender Socialization, n. d.; Fine, 2010), school (Pascoe, 2007), religion (Rubin, 1993[1984])—and the media, which enter the life of children from an early age (Zero to eight, 2011). Developing life-long skills in school should go beyond traditional literacy pedagogy of reading and writing, and help students understand the role that mediated communication plays in shaping their gender identities.

Scholars argue that the media reproduce gender binary (Gill, 2007), which limits our opportunities and reinforces inequalities (Butler, 1990). New literacy necessary for deconstructing problematic ideologies of gender embedded in media texts (Lemish, 2008) can be developed through media literacy education (MLE) and pedagogy of multiliteracies (New London Group, 1996). While MLE aims to help people better understand power imbalances that exist in society (Buckingham, 2003; Hobbs and Moore, 2013), pedagogy of multiliteracies focuses on developing students' ability to use technology for ethical and effective communication. MLE efforts can help young people reflect on the importance of becoming agents of social change and make a first step towards civic engagement (Hobbs, 2011). This is similar to the "Applying" component of multiliteracies pedagogy (Cope and Kalantzis, 2009), also known as Transformed Practice.

Classes that touch upon issues of media and gender can be found in a number of colleges and universities, and in some K-12 schools—although they are not necessarily

labeled as MLE, or explicitly informed by pedagogy of multiliteracies. Nevertheless, little qualitative research has been done to gather evidence on whether – and if so how – these programs work. Because of the lack of thick descriptions (Geertz, 1973) of such classes, we do not know yet how to answer such questions, as: What elements of these programs are the most effective in making young people think about the way the media shape their gendered identities? Do these programs have a long-lasting impact on students' perceptions? Do they help students engage in social action?

Although media and gender classes can be found on different stages of the educational system, in this paper I chose to explore how they function in high school. School programs—especially, in public schools—have the potential of reaching more people than college/university courses. Not all people go to college, so if they do not learn about issues of media and gender at school, they might never have a chance to learn about them later in life. In addition, because many young people live in the media-saturated environment from an early age, the earlier they start reflecting on its role in shaping their identities, the better.

Teaching about Media and Gender

Using Butler's conceptualization of gender (1990), I argue that the media shape our gendered identities through performance and though discursive practices. In her theory of performativity, Butler (1990) describes gender identities as formed through our own performances and performances of others towards us within the context of various social institutions. The media are one such institution, and it structures our gender performances in a way that constantly reinforces gender binary by creating an illusion that "female" and "male" natures are distinct and do not overlap. The media also participate in shaping our gender identities through discursive practices. Media texts portray gender binary as something natural

and inevitable, while in fact creating this binary by presenting audiences with ideals of emphasized femininity and hegemonic masculinity (Connell, 2005). These ideals are what Butler calls "phantasmatic" (Butler, 1993)—they are unachievable, yet they guide our actions as we are constructing our identities.

Scholarship on audience reception argues that audiences are agentic—they are actively using media texts for their own purposes and interpreting them in a variety of ways (see Gill, 2007 for a literature overview; Rand, 1995). The media are seen as offering us *possibility spaces* (DeVane and Squire, 2008) where we can play with meanings that we consume and produce. At the same time, dominant ideologies embedded in media texts are hard to escape (Lemish, 2008), and they play a crucial role in reinforcing the status quo. Media audiences may question the dominant readings of media texts (Hall, 1980), and produce interpretations that were not envisioned by those who created them. However, questioning does not necessarily mean that the real change can happen (Bird, 2003; Milestone and Meyer, 2012), unless it is done in a systematic way supported by educational practices. The process of learning about issues of media and gender can be informed by strategies of MLE and multiliteracies pedagogy.

MLE has a long history of exposing power relationships in media texts and media industries (Masterman, 1985). Incorporating critical pedagogy (Freire, 1970) and the philosophy of progressive education (Dewey, 2008[1916]), MLE emphasizes praxis-oriented learning that can help K-12 and college students across the curriculum to recognize problematic ideologies, and use knowledge and skills acquired in the classroom to trouble the status quo. One of the strategies offered by MLE is the AACRA model developed by Hobbs (2011). According to this model, media literacy classes should help students develop five key

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

competencies: Access, Analyze, Create, Reflect and Act. This means that students should learn not only to critically engage with media texts, but also to create their own messages using media tools, to reflect on their relationship with the media, and, most importantly, to connect their knowledge with the impetus for social change.

Pedagogy of multiliteracies aims to develop skills that will help students navigate communities and texts that have come to exist due to new technologies (New London Group, 1996). Developed by New London Group (1996), this pedagogy includes four key components: Situated Practice (connecting learning with students' out-of-school communities and discourses), Critical Framing (helping students question meaning-making that happens through mediated communication), Overt Instruction (building on students' prior experiences with meaning-making to deconstruct it), and Transformed Practice (applying knowledge and skills acquired in the classroom to new contexts).

There exist important parallels between these elements and the AACRA model. In particular, both educational paradigms emphasize critical engagement with media texts and their contexts, as well as applying knowledge gained in the classroom for transformative practices within students' communities (Cope and Kalantzis, 2009).

A number of scholars explore ways of helping audiences critically engage with media representations that reflect prevalent gender norms (e.g., Berman and White, 2013; Bullen, 2009; Durham, 1999; Graydon, 1997; Kamler, 1994; Merskin, 2004; Pozner, 2010; Reichert, LaTour, Lambiase and Adkins, 2007; Robillard, 2012). These authors discuss the importance of analyzing media messages in the classroom in order to help students understand how media representations can reinforce gender inequalities in society. Quantitative studies that aim to explore such educational practices usually focus on students' perceptions of gender ideals

(e.g., Coughlin and Kalodner, 2006; Engeln-Maddox and Miller, 2008; Silver, 1999; Wilksch, Tiggemann, and Wade, 2006; Yamamiya et al., 2006). These studies often aim to answer simple questions: Was the intervention effective? Should we use media literacy in schools to counter problematic influence of media ideals? Both questions are usually answered affirmatively. At the same time, few studies use qualitative methods to examine how media and gender programs (as opposed to short interventions) work (Keown, 2013; Maharajh, 2014; Ryden, 2001). These studies provide a more nuanced picture of teaching and learning that take place in media and gender classes. Notably, both qualitative and quantitative studies that explore media and gender classes seldom use MLE or pedagogy of multiliteracies as their theoretical framework.

Due to the dearth of qualitative studies in this area, we still know little about the learning that happens in media and gender classes. Existing quantitative studies measure learning outcomes of short interventions, and do not provide insights about more complex dynamics that takes place within media and gender literacy programs. The project described on the following pages contributes to bridging this gap. I used ethnographic methods and the case study approach to answer the following broad question: *What do high school students learn in media and gender classes?* More specifically, I used frameworks of MLE and multiliteracies pedagogy to ask the following questions: How do these classes help students reflect on their relationship with the media? What changes do media and gender programs produce in students' perceptions and actions? How do students use what they have learned in class for their lives outside of the classroom? Using the intersection between the frameworks of MLE and pedagogy of multiliteracies, I focused on students' critical engagement with media texts and their ability to apply knowledge gained in the classroom for action.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Methods

I used the case study approach and collected data over a period of two months in the fall of 2014 focusing on three units (parts of three separate classes) taught by two teachers in a suburban school located in an East Coast state of the United States. Each of the three units involved analysis of media texts and discussions about media representations of gender. To ensure validity, I used triangulation of participant observation in the classroom, interviews (group and individual) with students taking the units, and interviews with the teachers. I also interviewed 25 students from the same school who were not taking the classes that I observed, as I wanted to make sure that the opinions about media and gender that I heard from young people within the case study were not exceptional. By chance, it turned out that 11 of those 25 had already taken the classes I was observing, which allowed me to find out how much these young people remembered one or two years after taking them.

Following the rules set forth by the Institutional Review Board (IRB), which had previously approved the study, the participants were orally informed about the nature of the study and asked to sign consent forms giving me permission to interview, digitally record, and quote them. Students were given assent forms that they could sign if they agreed to participate, and consent forms that their parents needed to sign. In order to maintain participants' confidentiality, on the following pages I use pseudonyms and call the school where I conducted my study *West Cityville High School*.

Location

West Cityville High School is a suburban school. Although West Cityville may be seen as a part of Cityville (an East Coast city), it is considered to be a separate town. As of the census of 2010, the population of West Cityville is approximately 32,000 people. The

population is mostly White (close to 90%), with African-Americans and Hispanic/Latinos being the largest minorities (about 4% each). Median household income in West Cityville is about $50,000, with a little over 10% of families below poverty level.

West Cityville High School is a public school that teaches students from grades 9 to 12. It has about 1,000 students and 90 teachers. The school is more racially diverse than the town as a whole, with about 75% of White students, 7% of Black students and 15% of Hispanic/Latino students. In terms of socio-economic background, students are representative of the general population of West Cityville, with about 10% of them below poverty level.

Participants

My key informants for this study were two teachers from West Cityville High School and students from the three classes I was observing. The teachers spent a significant part of the units that I focused on helping students deconstruct media representations; they called their approach critical pedagogy, but when I discussed with them the principles of MLE they confirmed that their strategy can be described as MLE as well. On the following pages I call the teachers Michael and Rosey.

I observed and interviewed students from three English classes: English II taught by Michael (E-II-M), American Experience taught by Michael (AE-M), and English II taught by Rosey (E-II-R). AE-M and E-II-R consisted of 10th-graders, and E-II-M consisted of a combination of 10th-graders and 11th-graders. E-II-M had 25 students—19 male and 6 female. Of these students I interviewed 19—5 female and 14 male. AE-M had 23 students—12 male and 11 female. Of these students I interviewed 12—8 female and 4 male. E-II-R had 21 students—12 male and 9 female. Of these students I interviewed 10—5 female and 5 male. Out of the 25 students outside of the case study that I interviewed, 16 were female and 9 were

male. The ratio of different races in the classes I observed was representative of the ratio of races in the school: the majority was White, with several Hispanic and Black students.

Data Collection

Throughout September and October of 2014 I visited West Cityville High School 17 times, and each time stayed for 4 to 7 hours. In order to observe as much as I could and to see the progress of the classes, I visited the school three times a week.

I interviewed most of the students in groups of three, which allowed them to interact, and at the same time let everybody participate in the conversation. In the beginning of the quarter I used one set of questions, and once I felt that I had reached saturation I switched to the second set. The purpose of the first set was to find out what students thought about media representations of gender (see Appendix A). The second set of questions was intended to reveal what students learned in class (see Appendix B). Each of the interviews lasted for 20-25 minutes. I also used the first set to interview students outside of the case study who never took Michael's and Rosey's classes, and the second set for those who did take them.

I interviewed Rosey and Michael separately using a semi-structured interview guide. The interview with Michael lasted 2.5 hours and the interview with Rosey – 40 minutes, due to the differences in the teachers' availability, personalities and style of talking. I asked them to describe their teaching philosophy, instructional approaches, and motivations for teaching about media and gender (see Appendix C).

Data Analysis

To analyze the data, I used elements of the grounded theory (Glaser and Strauss, 1967). Describing coding techniques, Strauss (1987) recommended rereading data and

analyzing it into emerging conceptual categories. Having read the notes and transcripts for the first time, I formulated themes that I then used for coding in the process of subsequent readings. During the data analysis stage, I reread my notes and transcripts several times in order to make sense of the thick descriptions (Geertz, 1973) I was accumulating.

I used the AACRA model of MLE and the principles of pedagogy of multiliteracies as a framework that guided my analysis. I focused on the intersections of these two paradigms: the emphasis on critical engagement with media texts and the application of knowledge gained in the classroom for transformative practices (social action). While the overall research question was intentionally broad (*What do high school students learn in media and gender classes?*), I paid special attention to interpretations and practices that would indicate changes in students' perceptions and actions as a result of participating in media and gender literacy classes.

On the following pages I use quotes that I recorded while observing the teachers and students in the classroom, and talking to them during interviews and focus groups. The quotes allow me to illustrate the main themes that my findings revealed. Most of the quotes in this article have emerged from interview transcripts.

Teacher's Practices

Teaching students about media texts, Michael and Rosey used critical pedagogy—more specifically an approach formulated by Appleman (2000), who suggested analyzing texts through so-called critical lenses. In the beginning of the quarter, the teachers gave students a handout from Appleman's book that provided definitions for the following six lenses: archetypal, feminist, Marxist, historical, psychological, and reader-response (pp. 155-157). The purpose of the feminist lens was to "see cultural and economic disabilities in a

'patriarchal' society that have hindered or prevented women from realizing their creative possibilities and women's cultural identification as a merely negative object, or 'Other,' to man as the defining and dominant 'Subject'" (p. 155). The teachers felt that the feminist lens focused primarily on how women are oppressed, and did not allow students to discuss how men are affected by rigid gender roles. Therefore, they added one more lens—gender lens—to the list. It was based not on the Appleman's book but on Rosey and Michael's understanding of gender as constructed. The feminist and gender lenses were of special importance to the teachers, who often talked about gender stereotypes and inequalities during the class.

Michael and Rosey did not call their classroom practices MLE or pedagogy of multiliteracies. Both of them defined their approach as critical pedagogy. However, their teaching strategies had much in common with the above mentioned educational strategies. The teachers wanted to help young people become reflective consumers of media messages, and their end goal was a positive social change. Their emphasis on the need to "read" media texts revealed the aim to develop students' new literacy and train young people to use it effectively.

The units I was observing featured three main activities: analyzing animated films *Toy Story* and *Pocahontas*, and creating a collage out of magazine covers and ads (Hacked Ads exercise). The objective of all three activities was to practice "reading" media texts through the critical lenses. Michael and Rosey used *Toy Story* to model analyzing a media text, while watching *Pocahontas* was intended to let students use the critical lenses on their own. The Hacked Ads assignment involved analyzing a magazine cover or ad, and creating a collage that would expose and/or undermine the text's hidden message.

Media literacy strategies are often described according to the place they occupy on the protectionism-empowerment continuum (Buckingham, 1998; Hobbs and Tuzel, 2017).

Educators who lean towards protectionism are inspired by the media effects paradigm (Bryant and Oliver, 2009), while the empowerment approach is based on the belief that audiences are agentic (Buckingham and Bragg, 2004; DeVane and Squire, 2008; Rand, 1995). While during our conversations Rosey and Michael talked about the balance of protecting students and empowering them to explore mediated communication, in the classroom I often saw them leaning more towards the protectionist approach. For example, Michael on several occasions emphasized during classroom discussions that the media are spreading a false feeling of normalcy that kids are buying into because when they are young they do not have real defense mechanisms in order to shield themselves against problematic ideologies. On one occasion, he said: "You can say, it does not affect me, but you were exposed to that since you were born, and by the time you were four these stereotypes had shaped your thinking." Rosey made fewer strong statements in the classroom about negative media effects. On one occasion, however, she told a student whom I shall call Melissa: "You don't notice that because you have been brainwashed."

During the units that I observed, Rosey and Michael talked very little about the importance of social action. Although the teachers discussed how ideologies embedded in media texts promote gender inequalities, the main solution they offered was to pick media messages apart and expose harmful propaganda ("propaganda" was the actual word used by Rosey during her interview). While media scholars point out that the relationship between audiences and media texts they "read" or create is complex (Carter, Steiner, and McLaughlin, 2015; DeVane and Squire, 2008; Smith, 2007), Rosey and Michael portrayed the media's role as mostly negative. It is possible that, if these teachers had been familiar with principles of multiliteracies pedagogy and MLE (in particular, the AACRA model), their approach to

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

developing young people's new literacy could have been more nuanced, and they would have put more explicit emphasis on the importance of social action.

Students' Learning

How did these educational practices translate into students' learning? In this section I want to focus on three main findings. My evidence showed that the classes I observed had what I call *agenda-setting effect* on students (which is different from agenda-setting as it is understood by media effects scholars (McCombs and Reynolds, 2009)). By this I mean that actively looking for and deconstructing gender stereotypes became part of young people's agenda inside and outside of the classroom. Having interviewed students who had been taught by Rosey or Michael one or two years before my observations, I discovered that these classes had a potentially long-lasting effect. The most surprising finding, however, was that young people were able to apply knowledge and skills that they had gained to spread the message of gender equality in their communities; thus, they engaged in social action without being directly prompted by the teachers.

Media and Gender Classes as Agenda-Setting

I interviewed most students in groups of three. As the young people were talking not only with me but also with their peers, our conversations were lively. Many students described the classes as a revelation, and named things that they noticed by critically analyzing media texts. For instance, Diana from the case study said: "I'm a Disney nerd, I watch Disney, like, every day, but I still, up until [we watched *Toy Story* with Michael], did not notice any of that." Kathy described her experience: "Like, I noticed it before a little bit, but not as much as, like, we are learning now." And Pam outside of the case study shared: "Like, if I watched *Toy*

Story before I never would have picked out all the things… I didn't see it that way. I was, like: 'Wow, I didn't realize that.'"

Based on students' reactions I argue that the effect of media and gender classes can be described as agenda-setting. Discussions and activities in Michael and Rosey's classes created a new agenda for the young people: to question media representations of gender, and think deeper about issues of gender in general. The classes encouraged young people to look for hidden meanings in media texts that seemed simple and innocent before, and to make connections between media representations of gender and inequalities they knew of or had experienced.

Students told me that critical theory had a big impact on the way they consume media texts. Diana said: "And then, like, we talked about it in class, and I can't watch it anymore without thinking: 'Oh my god, that's what they... that's what they mean in this scene!'" Students could not "unsee" things that the critical lenses allowed them to notice:

> Devin: I cannot watch TV anymore, I am noticing it... Like, I was watching some show and some girl couldn't do a pull up, and this guy came, [and the girl said]: "I need help", and he basically lifted her up for her. She could not do it and the guy had to come. You just can't watch TV without thinking about it now...

Importantly, the agenda-setting effect differed according to students' personalities and their backgrounds. Some young people had already been exposed to information about media and gender—through family, friends, and other teachers—or because they liked exploring these issues on their own. Marcos told me: "The type of people I hang out with gets me thinking. I don't hang out with people who don't think. We might act crazy and ridiculous

sometimes but we think, we get each other going." Victoria, a self-proclaimed feminist, described her background this way: "I was born and raised a feminist so I've been around that stuff. So hearing this [about the critical theory] is kind of like a review to me." Dan also said that his family had encouraged him to pick apart media representations: "When we sit down and watch movies, they'd be like: 'You know, I've never understood why they always portray a certain character this way.'"

For these students issues addressed in class were not entirely new. I interviewed Anna when Rosey was still screening *Toy Story*, and the girl told me: "It's not new [to me], but it was kind of, like, new to me how much it was in childhood [sic] movies." Class discussions provided to these students an opportunity to better see things they had always suspected, or articulate ideas that had crossed their minds before. Dan said: "I've always thought like that… like, I've always noticed that kind of stuff but I've never known there was, like, an actual theory behind it. And once I found this out I was, like: 'Oh, wow, that's pretty cool!'"

The classes allowed these young people to notice new things around them and make important connections. For instance, Anna told me:

> It started popping into my eyes a lot. It's kind of crazy, 'cause... You know, the shirt she [Rosey] is wearing today? It says "I love you" on it and my shirt has a heart on it, and it says "Steal my heart." …It would be weird for a guy to wear this... because women are known for love, and that seems like what we are raised to be wanting in life. Guys, they want it too, but it is not as much as we are taught.

Other young people claimed that, even though they had noticed problematic media representations before, they had not paid too much attention to them until the class started. Ian

said: “I’ve always kind of noticed, but it’s never really, I’ve never really thought about it. It never really mattered to me.” Lane, who had also thought about gender representations, noted that in the class “you learn a lot more. [Michael] got my attention.” For some students the class provided vocabulary and theoretical base to better understand media representations. In words of Max: “I see it, like, the same but I didn’t know that there is like a term for it. ‘Stereotype’, and, like, ‘Marxist,’ and stuff...” Thus, those who had been aware of gender stereotypes in the media before were able to discuss them in a more systematic way, and benefitted from the new vocabulary provided by the teachers.

An important factor that made some students open to learning about media and gender was their experience with gender inequalities. Female students told me stories of how they discovered that being a woman can put one in a disadvantageous position. Two girls shared that they were not able to join their school’s sports team because of gender stereotypes. Sonia’s said: “I wanted to do football, and when I tried out, the coach is like: ‘Oh, you are a girl and we don’t want you to get hurt.’” Lara had a similar story to tell: “I have always wanted to play football and when I asked to play football… they told me ‘no’ because I am a girl.” Lara connected her experience to media representations of gender: “[In] every movie boys are always playing football, all the time.” Both girls had firsthand experience with the negative effects of gender stereotypes. That is probably why, when the critical theory classes started, they were all ears.

Some enjoyed media and gender classes because the teachers’ message made sense to them. Robin was among those who particularly enjoyed the critical lenses. He told me: “I never really thought about that stuff before [Rosey] handed us [the summary of the critical lenses] and told us to watch *Toy Story*. Literally the minute that the movie started I noticed

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

stuff going on." Robin's family background might explain his reaction: "My parents don't usually talk about [gender equality]. But after we started watching *Toy Story* I would tell my parents what stuff is going on, what we are doing in class, and when I would tell them that... they would realize and they would be like, 'Wow!'... [They] never really noticed that until I told them." In case of Robin, it was his open-mindedness—which seemed to run in the family—that made him so excited.

Resistant Students

Students' backgrounds explained not only their receptiveness but also resistance. I was intrigued by it and wanted to learn more about these young people's lives. Probing students' backgrounds helped me understand causes of their resistance and see the agenda-setting effect behind it.

One of Michael's students named Steve talked back to all teachers, was aggressive with other students, and often visited the principal's office. Later I found out Steve's story. The boy used to live in a poor neighborhood and go to a school with a violent culture where he had to fight a lot to get by. Finally, Steve's mother sent him to live with her ex-husband in West Cityville. The boy was struggling to adjust to the new school. He was not happy in his new home; he missed his mother but at the same time was angry with her for sending him away. It later turned out that, although Steve was resisting Michael in class, he actually enjoyed critical theory. When I asked Steve how he understood the purpose of the critical lenses, he told me:

> [To] look at certain stuff a certain way. Like, the way how girls are portrayed. In… almost every movie you see, the girl is played as… she is scared of this,

> she is fearing that, she is weak. The guy is always, like… Kids grow up looking at that. Once they see that, they think that that's the way to act.

It was particularly interesting to see that Steve shared Michael's protectionist position regarding negative media effects on children. Steve expressed his concern about young viewers, saying that "it's mentally kind of destroying them already." The boy also explicitly talked about the standards of masculinity as problematic: "They feel like, oh, they gonna be strong, or they can't feel no type of emotion, like a man... is gonna think that: 'Oh, I gotta be all mad all the time'… It's brainwashing." Knowing that Steve was hardly a people-pleaser and could easily become oppositional if he wanted to, I saw these remarks as an evidence of him assimilating Michael's message.

One student who often challenged Rosey's preoccupation with feminist causes was Kevin. His background and the reasons for this resistance also turned out to be complicated. During one of the journaling activities Kevin told the class that his stepfather sometimes stole his things, but the boy's mother took the stepfather's side. Later Kevin told me that his mother was probably a feminist: "She actually wants to talk about [the critical theory] to one of the teachers [she works with]… she was like, she kept talking about it… *I kind of never listen to her*..." (Emphasis added). His last remark might suggest that Kevin was angry with his mother for betraying him, and his way of dealing with this situation was to detach from her, and ignore her opinions.

Kevin was one of a few students who said that he did not enjoy using the critical lenses. However, even he started perceiving media texts differently. During the interview, Kevin told me: "I always notice, like, when there's the [feminist criticism]... cause she [Rosey] is always like: 'That's the gender stuff!'" Although Rosey was often frustrated by

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Kevin's remarks, I discovered that she was successful in making him question media representations of gender, something that his mother was apparently not able to do.

Finally, I would like to talk about Melissa, a girl from Rosey's class. I did not learn much about her out-of-school background. However, observing this student in class I could guess about some reasons for her resistance. Melissa occupied an advantageous position thanks to her popularity and her good-looking boyfriend. The girl fitted hegemonic constructions of female beauty, and she clearly knew that people considered her beautiful. She mentioned that people often told her that she should become a model. For this student, the benefits of fitting within hegemonic standards of femininity outweighed the drawbacks of sexism.

It appeared that Melissa liked learning about the critical lenses – to a certain extent. She enjoyed using the critical lenses, and agreed that some media messages are diminishing women. The girl gave me examples of things that she noticed using the gender and feminist lenses outside of the classroom. For example, she described a video about an amusement park: "They were, like, on a rollercoaster and then he is, like: 'Wow, you scream like a girl.' I was, like: 'What?..' Why does a girl has to scream like that, why can't a guy?" At the same time, Melissa thought that most differences between men and women are just meant to be, that they are "normal" and therefore should not be questioned. She agreed with Rosey and the actively feminist student Anna that women should have the same rights as men. However, she thought that both of them were taking their argument too far.

> Some things are just *normal*. For a girl to wear pink and a guy to wear blue when they are newborn and everything... that's how things *became*. You don't have to look at it and investigate why it's like that. There's just gender

> differences. Yeah, everybody wants to be equal but just the way they were making it sound… One's a girl, one's a guy, there *has* to be some difference. (Emphasis in the original.)

Her main argument against challenging media messages was: "That' just already how it is."

By the end of my discussion with Melissa I concluded that what bothered her about feminism was that its goal, as the girl saw it, was to erase differences between men and women. For her that might have been a problem because she was benefitting from her emphasized femininity. She saw Rosey and Anna's kind of feminism as too aggressive, and felt that it did not represent her point of view: "Like [Anna], she says: 'People come to school and... if they are in a dress, you can just tell, they are trying to get a guy's attention.' No. I want to get my own attention!" Melissa's position can be explained through Gill's (2016) analysis of postfeminism. Using Gill's terminology we can say that this student displayed "a patterned yet contradictory sensibility" (p. 621). On the one hand she saw the merits of feminism, but on the other hand she did not perceive it as fully applicable to her life.

Advantages and Limitations of Agenda-Setting

Michael and Rosey were hoping that as soon as young people noticed gender stereotypes in media texts, they would not be able to "unsee" them. In most cases, this is exactly what happened. Many students were excited about their revelations and the new vocabulary that they could now use to talk about media texts. Others were annoyed as they felt forced to notice the hidden ideologies – but even they said that they now saw "gender stuff" everywhere. Although different students experienced the classes differently and not everybody agreed with the teachers' interpretations, most young people were in one way or another transformed by this experience.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Using the intersection between the frameworks of MLE and pedagogy of multiliteracies, I discovered that the media and gender classes I was observing enhanced most students' critical engagement with media representations of gender. Thanks to Rosey and Michael's efforts, students were able to reflect on the role that mediated communication played in shaping their gender identities. New literacy that the teachers worked hard to develop in their students indeed allowed these young people in engage in deconstructing problematic ideologies of gender embedded in media texts.

Notably, the students on whom media and gender classes had the agenda-setting effect were not talking about nuances of their relationship with the media. While young people noticed more problematic representations of gender, their conversations during classes and our focus groups did not go beyond the discourse of media blame offered by the teachers. Michael and Rosey helped students to start "reading" media portrayals of gender through the critical lenses, but the full potential of such discussions as described by MLE and multiliteracies pedagogy was not realized. In particular, none of the students talked about how audiences can be agentic but at the same time influenced by gender scripts provided by media texts. I believe that is this one of the main limitations of the agenda-setting effect of media and gender classes, although their importance as the first step in developing students' media and gender literacy is undeniable.

Negative Cases

My observations in the classroom showed that at least for some students the critical lenses were confusing. When the teachers started screening *Pocahontas* during the second half of the quarter, I heard several young people asking them to explain again what different lenses

stood for. During interviews, several students from the case study said that they did not try using the critical lenses outside of the class:

> Vicki: I don't really pay attention to that kind of stuff... I really didn't notice... Like, during the class I, like, notice things but then, like, if I'm watching TV I don't really pay attention.
>
> Elizaveta: What about you?
>
> John: I don't, like, notice it unless I'm looking for it. Like, I'm watching TV, I won't think about any of that unless I am purposely looking for stuff, to, like, criticize.

Although the majority of students—seven out of 11—who had already taken Michael and Rosey's classes still remembered many details about the critical lenses (more about that below), the rest could not recall much. Aaron said about the critical theory class that they "covered a little bit of it," although then it turned out that they analyzed films (one of them was *Toy Story*) and commercials. Frankie and Helen also did not remember much.

> Frankie: I took it sophomore year. I think we talked a little bit about that. Can't remember…
>
> Elizaveta: So you don't remember whether he talked about gender?
>
> Frankie: The lenses?
>
> Elizaveta: Yeah, this thing. He talks about gender a lot. I was curious whether that...
>
> Frankie: Is that where we had to watch something, then write about it through a different lens?

> Helen: Oh yeah, I did that in his class two years ago, yeah. I don't think it was really gender specific though.

I argued earlier that students who were predisposed to be interested in issues of gender liked the critical theory classes. Frankie was an exception to this rule. She was knowledgeable about gender and sexuality: "I've researched a lot about... I have a lot of friends who are in minorities, like, sexuality… and I am not straight, so learning about all this stuff… opens your mind." Yet, for some reason, the class she took with Michael was not prominent in her memory. Although Helen took Michael's class and knew about gender stereotypes, one of her remarks indicated a gap in her knowledge. Describing a TV show, she said: "They are, like, stranded on an island, so it's not like she can be the stereotypical girl who, like, curls her hair and wears a bunch of makeup, because they don't have any of that stuff." This description indicated that Helen had a simplified understanding of gender stereotypes in the media.

The negative examples show that the agenda-setting effect is not uniform. As I noted earlier, everybody is affected differently by media and gender classes, and while many students are primed to think deeper about media representations of gender, a few others are not.

Changing and Engaging in Social Action

One might say that the agenda-setting effect is only temporary. Young people are initially excited about their discovery, but they will move on to other things. My conversations with students outside of the case studies showed that it is not always the case. I was fortunate enough to talk to several students who had taken Michael's and Rosey's classes one or two years ago. My sample was not very big – only 11 people. However, the majority—seven out of 11—remembered many details of the classes, and told me that they were still using the

critical lenses to deconstruct media texts. These young people remembered such specific concepts as "token character," "Smurfette effect" ("it is always the girl, always with a group of guys") and "Bechdel test" ("if two female characters are discussing something, other than men, or their relationship to men, then it passes the test") that they had learned back then.

Some of these students noted that the effect the classes had had on them was the strongest during the first year. For instance, Derek said: "I remember, like, looking at it completely differently, and for the whole next year any time I watched TV I just was, like: 'Wow, these lenses are popping up everywhere.'" And Cindy shared: "It was stronger last year because the subject was, like, extremely prominent... I still look at things differently to this day…" This finding has an important implication for media educators who want to teach their students about issues of gender. To be more effective, media and gender classes should take place on different stages of the educational program. These classes set an important agenda, and we should make sure that this agenda remains fresh in students' minds.

My discussions with the young people showed that many of them were so excited about what they learned in media and gender classes that, even without the teachers' prompting, they made an important step towards engaging in social action. The stories that I heard during interviews showed that some students shared what they had learned in class about media representations of gender with their parents, siblings and friends. These students wanted to talk about issues of media and gender outside of school because they found their revelations fascinating and important.

I already mentioned Robin who was so excited about the critical lenses that he told his parents about them. Other students had similar experiences. Although in the beginning of the quarter Jessica had some doubts about Rosey's class ("At first I was I kind of like: 'No,

that's… just how you view it'"), her perceptions gradually changed ("oh, wow, that's true") and then she started advocating against sexism: "I'm quick with that now… a few of my friends, they'll, like, make comments about things, and I'll be, like: 'That's so sexist!'…"

When I asked Stella and Kathy whether they shared with friends or family what they had learned in class, the girls replied:

> Kathy: Yeah. Like sometimes we watch TV, and I say to my mom... how they are portraying...
>
> Stella: I was watching a movie with my sister... I forgot what movies it was, but it was last week. Something was going on, and I started, like, ranting… And she was like: "What are you talking about?" and I was, like: "Critical lenses! [Michael]!" and she was, like: "What?" and I explained it all to her, and she was just, like, mind-blown. She came to me yesterday or the day before and she was, like: "You know, that critical lens thing?.." And now it's just like running in our heads.

Students outside of the case study had similar stories:

> Elizaveta: Did you, since you discovered all these critical lenses, try talking to your friends or your family about that?
>
> Sara: I brought it up with my family. Made them watch the movie...
>
> Pam: I brought it up with my family a couple of times, because it was just, like, kind of a shocking thing, or surprising. That something can be that out in the open and you never realize it, it just goes over your head.

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

Derek, another student outside of the case study, described how the knowledge about gender stereotypes that he had gained in the critical theory class empowered him to advocate for gender equality in his own family:

> …My stepdad would be, like: "Oh, I don't cook," and I'd be like: "Why, is that, like, a female's role?.." I am, like: "This is what you thought, this is what you wanted to think but it's not the truth..." I say, like, all the time… It's, like, kind of a joke… no, not really a joke… but, like, I'd throw it out there all the time, but it's, it's like… I use it on my friends, I say it to my family—like, everybody.

My evidence shows that students' potential for social action is remarkable. Michael and Rosey talked little about civic responsibility in class. Considering that, I was impressed that a number of students used their knowledge in a socially responsible way. At the same time, not all students shared their knowledge with others, even if they felt that change was necessary. For example, when Steve was describing how the media negatively affect children, he gave an example of his little brother: "He's playing with my stepmother's friend, he's kicking her, and.... 'She is a girl,' like, he thinks, 'She can't...' And I can see it in him, like, he thinks: 'Ok, she is a girl, she can't fight.'" However, when I asked Steve whether he had tried talking to his little brother about gender stereotypes, the boy shook his head.

It is possible that if teachers explicitly talk about the need for civic engagement and discuss different types of social action with students, the latter will better understand how they can use their knowledge and skills to fight against gender inequalities. In her study on cultivating postfeminist sensibility in the media studies classroom, Maharajh (2014) suggests that for some students to fight for gender equality means to "go out and… protest and try and

get everyone to be equal" (p. 690), which they are not ready to do. It is important to explain to students that civic engagement comes in many shapes and forms, and that it starts with simple actions that each of us is capable of doing.

While the classes taught by Michael and Rosey produced important changes in students' perceptions and actions, I argue that this impact could be strengthened if the teachers rely more explicitly on the principles of MLE and multiliteracies pedagogy. In particular, more emphasis should be put on social action using the AACRA model of MLE, or such elements of multiliteracies pedagogy as Situated Practice and Transformed Practice. This would allow students to better realize their potential as engaged citizens in their communities.

Conclusion

The main limitation of the research project described above is that it was a single case study, which means that it cannot be truly representative. However, it allows us to see what happens in at least some media and gender classes. This study suggests directions for future research, as well as implications for practice.

Overall, students that I observed were positively affected by classroom discussions and activities. For many, what they heard from the teachers was a revelation, and it helped them to engage in a deeper reflection about their relationship with the media. Even though some young people had critically engaged with media representations of gender before, Michael and Rosey helped them "read" media texts in a more systematic way. I call this effect agenda-setting, as the media and gender classes I observed set for the young people an agenda to pick apart media representations of gender and connect them to gender inequalities outside of the media. In other words, the classes encouraged students to be on the lookout for problematic media representations, and to question them. I consider this effect to be an essential first step

in developing students' new literacy and their sensitivity to gender inequalities. At the same time, a few students were not impacted by the classes in the same way: they did not understand the critical lenses well enough, and did not try using them outside of the class. This finding suggests that we need to further investigate how the agenda-setting effect of media and gender classes works, and how it can be strengthened.

The current study shows that the agenda-setting effect is potentially long-lasting, even though it gets weaker over time. Therefore, discussions about media representations and gender inequalities should take place on different stages of the educational program (starting from K-12 and including college) and across the curriculum. My evidence also suggests that media educators who want to help students critically engage with issues of media and gender might need to take into consideration students' backgrounds, and use this knowledge to make their classes relevant for as many young people as possible.

In addition to the changes in students' perceptions, I found that media and gender classes have a potential to make students engage in social action (broadly understood). It is remarkable that students were eager to use what they have learned in class for their lives outside of the classroom even without explicit prompting from the teachers. Students' eagerness to share with others what they have learned about issues of media and gender shows that they are future agents of social change who need to better understand their possibilities. If teachers directly address different kinds of activism, they can help young people engage in it more consciously.

Educators will be better equipped to teach media and gender classes to their full potential if they have more opportunities to learn about strategies of MLE and pedagogy of multiliteracies. In particular, Situated Practice and Transformed Practice elements of the latter,

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

combined with the AACRA model of MLE will allow teachers to put more emphasis on civic engagement, helping students use knowledge and skills gained in the classroom to transform their communities. In addition, if teachers use scholarship on active audiences to inform their practices, they will be able to avoid simplifying the complex relationship between audiences and media texts. This will allow students to use the agenda-setting effect of media and gender classes to further develop their new literacy, and to trouble the status quo that supports inequalities.

Future research should investigate practices in media and gender classes taught by teachers who are versed in MLE and multiliteracies pedagogy. Some questions that future studies can focus on are: How are students' perceptions and actions transformed when teachers explicitly talk about civic engagement in class and have young people participate in social action as part of class assignments? Will students be more eager to learn and will they retain new information better if it is connected with practices aimed to positively impact their communities (service learning)? How can teachers introduce discussions about the complexity of people's relationship with media texts without reinforcing the discourse of media blame? Answering these questions will help educators develop students' new literacy, and encourage young people to trouble dominant ideologies that reinforce gender inequalities through mediated communication.

References

Appleman, D. (2000). *Critical encounters in high school English*. New York, NY: Teachers College Press.

Berman, N., & White, A. (2013). Refusing the stereotype: Decoding negative gender imagery through a school-based digital media literacy program. *Youth Studies Australia, 32*(4), 38-45. Retrieved from go.galegroup.com/ps/i.do?p=AONE&sw=w&u=temple_main&v=2.1&id=GALE%7CA371967932&it=r&asid=6b3de5f8b0fac7aa717d70a1391b751d

Bird, S. E. (2003). *The audience in everyday life: Living in a media world*. New York, NY: Routledge.

Bryant, J., & Oliver, M.B. (Eds.). (2009). *Media effects, 3rd edition*. New York, NY: Routledge.

Buckingham, D. (1998). Media education in the UK: Moving beyond protectionism. *Journal of Communication, 48*(1), 33-43.

Buckingham, D. (2003). *Media education: Literacy, learning and contemporary culture.* Malden, MA: Polity.

Buckingham, D., & Bragg, S. (2004). *Young people, sex and the media.* Basingstoke, UK: Palgrave Macmillan.

Bullen, R.R. (2009). The power and impact of gender-specific media literacy. *Youth Media Reporter, 4*, 149-152.

Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. New York, NY: Routledge.

Butler, J. (1993). *Bodies that matter: On the discursive limits of "sex."* New York, NY: Routledge.

Carter, C., Steiner, L., & McLaughlin, L. (Eds.). (2015). *The Routledge companion to media and gender.* New York, NY: Routledge.

Connell, W. R. (2005). *Masculinities.* Berkley, CA: University of California Press.

Cope, B., & Kalantzis, M. (2009). "Multiliteracies": New literacies, new learning. *Pedagogies: An international journal, 4*(3), 164-195.

Coughlin, J.W., & Kalodner, C. (2006). Media literacy as a prevention intervention for college women at low- or high-risk for eating disorders. *Body Image, 3*, 35-43.

DeVane B., & Squire K.D. (2008). The meaning of race and violence in Grand Theft Auto: San Andreas. *Games and Culture, 3*(3-4): 264-285.

Dewey, J. (2008[1916]). *Democracy and education*. Radford, VA: Wilder Publications.

Durham, M.G. (1999). Girls, media and the negotiation of sexuality: A study of race, class and gender in adolescent peer groups. *Journalism and Mass Communication Quarterly, 76*(2), 193-216.

Early gender socialization. (n.d.). Retrieved from http://www.unicef.org/earlychildhood/index_40749.html

Engeln-Maddox, R., & Miller, S.A. (2008). Talking back to the media ideal: The development and validation of the critical processing of beauty images scale. *Psychology of Women Quarterly, 32*, 159-171.

Fine, C. (2010). *Delusions of gender: How our minds, society, and neurosexism create difference.* New York, NY: W.W. Norton & Company.

Freire, P. (1970). *Pedagogy of the oppressed.* (M. Bergman Ramos, Trans.). New York, NY: Herder and Herder.

Geertz, C. (1973). Thick description: Towards an interpretive theory of culture. In *The interpretation of cultures* (pp. 3-30). New York, NY: Basic Books.

Gill, R. (2007). *Gender and the media.* Malden, MA: Polity.

Gill, R. (2016) Post-postfeminism?: New feminist visibilities in postfeminist times. *Feminist Media Studies, 16*(4), 610-630.

Glaser, B. and Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.

Goodman, S. (2003). *Teaching youth media: A critical guide to literacy, video production, and social change.* New York, NY: Teachers College Press.

Graydon, S. (1997). Overcoming impossible bodies: Using media literacy to challenge popular culture. *Emergency Librarian, 24*(3), 15-18.

Hall, S. (1980). Encoding/decoding. In S. Hall et al. (Eds.) *Culture, media, language* (pp. 128-138). London, UK: Hutchinson.

Hesse-Biber, S.N., & Leavy, P. (2011). *The practice of qualitative research* (2nd ed.). Washington, DC: Sage.

Hobbs, R. (2011). *Digital and media literacy: Connecting course and classroom*. Thousand Oakes, CA: Corwin Press.

Hobbs, R., & Moore, D. C. (2013). *Discovering media literacy: Teaching digital media and popular culture in elementary school*. Thousand Oakes, CA: Corwin Press.

Hobbs, R., & Tuzel, S. (2017). Teacher motivations for digital and media literacy: An examination on Turkish educators. *British Journal of Educational Technology, 48*(1), 7-22.

Kamler, B. (1994). Lessons about language and gender. *Australian Journal of Language and Literacy, 17*, 129-138.

Keown, E.L. (2012). *The impact of an art-based media literacy curriculum on the leadership self-efficacy of adolescent girls* (Unpublished doctoral dissertation). Edgewood College, Madison, WI.

Lemish, D. (2008). Gender: Representation in the media. In W. Donsbach (Ed.) *International encyclopedia of communication*: *Volume V*, (pp. 1945-1951). Malden, MA: Blackwell.

Maharajh, D. (2014). Mediating feminism: Cultivating a (post)feminist sensibility in the media studies classroom. *Feminist Media Studies, 14*(4), 679-694.

Masterman, L. (1985). *Teaching the media*. New York, NY: Routledge.

Merskin, D. (2004). Reviving Lolita?: A media literacy examination of sexual portrayals of girls in fashion advertising. *American Behavioral Scientist, 48*(1), 119-129.

McCombs, M., & Reynolds, A. (2009). How the news shapes our civic agenda. In J. Bryant and M.B. Oliver (Eds.). *Media Effects, 3rd edition* (pp. 1-16). New York, NY: Routledge.

Milestone, K., & Meyer, A. (2012). *Gender and popular culture*. Malden, MA: Polity Press.

New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review, 66*(1), 60–92.

Pascoe, C.J. (2007). *Dude, you are a fag: Masculinity and sexuality in high school*. Berkley, CA: University of California Press.

Pozner, J. (2010). *Reality bites back: The troubling truth about guilty pleasure*. Berkeley, CA: Seal Press.

Silver, B.E. (1999). *A media skills intervention for adolescents on gender attitudes, beliefs and behaviors* (Unpublished doctoral dissertation). University of Rhode Island, Kingston, RI.

Smith, C. (2007). *One for the girls: The pleasures and practices of reading women's porn.* Bristol, UK: Intellect Books.

Strauss, A.L. (1987). *Qualitative analysis for social scientists.* Cambridge, MA: Cambridge University Press.

Rand, E. (1995). *Barbie's queer accessories*. Durham, NC: Duke University Press.

Reichert, T., LaTour, M.S., Lambiase, J.J., & Adkins, M. (2007). A test of media literacy effects and sexual objectification in advertising. *Journal of Current Issues and Research in Advertising, 29*(1), 81-92.

Robillard, A. (2012). Music videos and sexual risk in African American adolescent girls: Gender, power and the need for media literacy. *American Journal of Health Education, 43*(2), 93-103.

Rubin, G. (1993[1984]). Thinking sex: Notes for a radical theory of the politics of sexuality. In H. Abelove et al. (Eds.) *The Lesbian and Gay Studies Reader* (pp. 3-44). New York, NY: Routledge.

Ryden, P.N. (2001). *Fighting fire with fire: An analysis of critical media literacy videos* (Unpublished doctoral dissertation). Purdue University, West Lafayette, IN.

Wilksch, S. M., Tiggemann, M., Wade, T. D. (2006). Impact of interactive school-based media literacy lessons for reducing internalization of media ideals in young adolescent girls and boys. *International Journal of Eating Disorders, 39*(5), 385-393.

Yamamiya, Y., Cash, T.F., Melnyk, S.E., Posavac, H.D., Posavac, S.S. (2005). Women's exposure to thin-and-beautiful media images: Body image effects of media-ideal internalization and impact-reduction interventions. *Body Image, 2*, 74-80.

Zero to eight: Children's media use in America (Fall 2011). Retrieved from https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-america

Appendix A: Interview Guide for Case Study Students (Set I)

1) Who is your favorite media character (in a film, book, TV show, or video game)? What do you like about this character?

2) What is a stereotype? Can you give examples?

3) What is a gender stereotype?

4) Is there anything stereotypical about your favorite character?

5) Is your favorite character based on any gender stereotypes?

6) Are there a lot of gender stereotypes in media texts (films, books, TV shows, video games) that you know? Can you give examples?

7) Can you think of any ways stereotypes about men and women can make your life easier or create problems? If so, can you give some examples?

8) Do you think that the media should contain less gender stereotypes? Explain your opinion.

Appendix B: Interview Guide for Case Study Students (Set II)

1) How would you summarize what you learned in this class so far?

2) What new things you have noticed about the way the media portray men and women?

3) What have you learned about gender stereotypes in the media?

4) Did you noticed any gender stereotypes before this class?

5) Do you ever disagree with any of the teachers' ideas and interpretations? If so, could you give examples?

6) How do you like analyzing media texts through the critical lenses?

7) How did you like watching *Toy Story* in class?

8) How did you like watching *Pocahontas*?

9) What did you think about the Hacked Ads exercise? What do you think the teacher wanted you to learn?

10) Have you used the critical lenses outside of the class? If so, could you give examples?

11) Have you talked with your friends or family about the critical lenses?

12) In general, how are you liking the class?

13) Some people say that men and women should be equal, but there will inevitably be some differences between them. What is your opinion on that?

Appendix C: Interview Guide for Case Study Teachers

1) How long have you been teaching?

2) How did you get into teaching?

3) What brought you to N school?

Volume 18, Number 2: Summer/Fall 2017
ISSN: 1535-0975

4) How would you describe your teaching philosophy?

5) Are you familiar with MLE?

6) Are you familiar with critical pedagogy?

7) Do you use principles of MLE and critical pedagogy in your classes? If so, can you give examples?

8) Why is talking with students about gender stereotypes in the media important for you?

9) How do you usually structure your classes on media and gender?

10) How do students usually react when you talk to them about gender representations in the media?

11) Have you noticed any difference in reactions of boys and girls?

12) Have you noticed any difference in reactions of students of different races?

13) Have you experienced any resistance from students? If so, describe instances of resistance.

14) What are your strategies for overcoming this resistance?

15) How do you know that students get your message, or that they disagree with you?

16) What materials/resources do you use in class?