Journal of Literacy and Technology: Volume 23, Number 2: Fall/Winter 2022

Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Blogging and Online Book Clubs: What Happens When Preservice Teachers Engage in Digital Reading and Writing?

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Abstract

This study explored perceptions of the digital experiences of 18 preservice teachers before and after participation in blogging paired with online book clubs. The purpose of the research was to identify participants' reading habits and online practices, examine their perceptions of blogging as an instructional tool when coupled with online book clubs, and ascertain if or how they intend to incorporate this digital pairing into their future educational practice. A 15-question Likert-scale survey was administered to participants, six-member online book clubs were formed, and blogs were created and used by participants to engage in online dialogue over the course of four weeks. Participants again responded to the survey and also provided reflective responses. Findings revealed positive aspects and challenges related to participants' experience. Though this study was narrow in scope and results were limited, it provides a foundation and rationale for future research in an area that is still emerging.

Keywords: blogging, online book clubs, digital literacies, classroom technology, preservice teachers, pedagogy

Introduction

As traditional teaching methods shift and the learning environment pushes beyond the boundaries of the school building, today's teachers and students increasingly participate in technology practices that span the globe and connect diverse populations through the use of digital media. The concept of integrating instructional technologies that are familiar to students in their everyday lives increases the likelihood that every student will have an opportunity to learn according to their own abilities, skill set, and interests (Bond & Bedenlier, 2019; Zahra et al., 2021). This is crucial as "people do not learn anything well unless they are both motivated to learn and believe that they will be able to use and function with what they are learning in some way that is in their interest" (Cazden et al., 1996, p. 85). Therefore, the goal of 21st-century educators should be to provide relevant digital learning platforms—in this case, blogging used in combination with online book clubs–to fully engage students in the learning experience. Beyond the need to grapple with how to introduce varied forms of media into the classroom, educators must also determine how to establish meaningful pedagogic practices within a framework that provides learners the freedom to engage in ways that are personally beneficial, but also meet certain standards. In short, "the challenge…is to enable self-direction, knowledge building, and learner control by providing options and choice while still supplying the necessary structure and scaffolding" (McLoughlin & Lee, 2008). Online book clubs are a contemporary means of bridging the old and the new. Blogging as an instructional tool provides a platform through which students become fully invested and engaged in online book clubs in a manner that is reflective, collaborative, and current.

Though digital technologies have permeated and transformed every aspect of our society, there remains a disconnect between in-school and out-of-school practice that many literacy educators have been slow to bridge (Picton, 2019). According to Stanford University education professor Larry Cuban, "The introduction of computers into schools was supposed to improve academic achievement and alter how teachers taught. Neither has occurred," (Herold, 2015). Similarly, a 2016 *Education Week* survey of classroom teachers found that "despite an influx of technology in schools, many teachers still mainly rely on digital programs to supplement traditional instructional strategies rather than to support more creative, inquiry-based learning" (Rebora, 2016). Furthermore, the authors' own experience has revealed that teachers are not fully implementing technology into the curriculum in ways that enhance content acquisition and promote critical literacies. This reluctance on the part of teachers to fully embrace technology in their classrooms is often rooted in feelings of inadequacy due to a lack of time, experience, and training, as well as their attitudes regarding content and how it should be taught (Alswilem, 2019; Klein, 2022a, 2022b; Makhlouf & Bensaf, 2021; Picton, 2019; Schleicher, 2020; Strong-Wilson & Rouse, 2013). Regardless of the reason for this reluctance, persistence in employing antiquated classroom instructional techniques often produces unmotivated, disengaged student readers and writers.

The recent seismic shift in educational practice brought about by the COVID-19 global pandemic left many teachers feeling even more overwhelmed by the sudden, albeit necessary, push to incorporate digital technologies and virtual platforms into classroom instruction (Anthony & Noel, 2021; Joseph & Merrick, 2021; Klein, 2022a, 2022b; Schleicher, 2020; Winter et al., 2021). Implementation, mastery, and oversight of these virtual spaces has led to frustration and technology fatigue for teachers, principals, and district leaders (Klein, 2022a).

This emergency use of technology during crisis circumstances (Hodges et al., 2020) is, at its core, utilitarian in nature and, in and of itself, fails to stimulate critical thinking and motivate readers and writers. Reflective of Cuban's 2003 research findings, "[t]the overwhelming majority of teachers [continue to employ] technology [merely] to sustain existing patterns of teaching, rather than to innovate" (p. 134). In today's digital society, it is crucial that learners not only have the tools to support knowledge and skills acquisition, but also opportunities to experience innovative learning approaches that help them become digitally literate citizens (Bunting et al., 2020; Fraillon et al., 2014; Picton, 2019). The merging of two unique digital practices, blogging and online book clubs, embraces the current trends of multimodalities and learner-centric knowledge acquisition and, therefore, has the potential to transform instruction within the classroom and facilitate student engagement and achievement.

The goal of this study was to determine preservice teachers' perceptions regarding blogging as an instructional tool to facilitate engagement in online book clubs. Additionally, the researchers sought to discover how preservice teachers' personal experiences with blogging and online book clubs influenced their perceptions of these technological literacy experiences. The specific research questions addressed were:

1. What are preservice teachers' perceptions of blogging and online book clubs prior to participation in these digital experiences?

2.What are preservice teachers' perceptions of blogging and online book clubs after participation in these digital experiences?

3.What are preservice teachers' perceptions about incorporating blogging and online book clubs into their future teaching practice?

Theoretical Stance

Technological advances are creating new ways of perceiving the world and new landscapes of knowledge which are altering societies' structures and influencing traditional classroom pedagogies. Due to this explosive digital growth, new literacy practices are emerging, making it necessary for individuals to learn how to read and interpret symbols, images, characters, and other elements across synchronous and asynchronous spaces. Nonetheless, as educators grapple with this reality, many are not completely convinced of the merits of investing in multimodal methodologies which are continually shifting and changing, particularly if they are unsure of the justification for such changes (Edwards-Groves, 2011; Öman & Hashemi, 2015; Picton, 2019; Tan et al., 2010; Winter et al., 2021). It is crucial, therefore, to theoretically frame the practice of blogging as an instructional tool through the use of online book clubs, and to attempt to establish the value of its incorporation into classroom literacy instruction. As a literacy tool, blogging can be firmly situated within a multi-dimensional conceptual framework which includes Constructivism, Social Constructivism, Connectivism, and Third Space Theory.

Constructivism, as defined by Tracey and Morrow (2006), occurs when individuals integrate new knowledge with existing knowledge, an occurrence which requires the learner to be actively involved in the learning process. Blogging, coupled with online book clubs, fits nicely into this category as a pedagogical component of literacy instruction, particularly when examined through the lens of Engagement Theory (Guthrie & Wigfield, 2000) and Inquiry Learning. Engagement Theory focuses on the motivation, or engagement, aspect of educational

practice and supports making instruction meaningful and relevant to the learner (Tracey and Morrow, 2006). It also addresses the social aspect of learning and emphasizes interaction among learners, a fundamental principle of both blogging and book clubs. Dewey's Inquiry Learning Theory focuses not only on the growth and development of the individual, but also on the instructor and the learning environment (Tracey and Morrow, 2006). A successful classroom blogging experience requires an environment that facilitates and motivates student engagement and success as well as an instructor that is fully invested in the process. This problem-based approach encourages critical thinking, conflict-resolution, and self-efficacy—fundamental components of the blogging experience.

Vygotsky's Social Constructivist theory brings social interaction into the mix as it is based on the premise that social interaction is necessary for learning to occur (Vygotsky, 1978). Blogging and online book clubs are inherently social in nature as both are built upon the interaction between reader, writer, and audience. Scaffolding, a component of Vygotskian theory (1978) in which the teacher facilitates, or scaffolds, the learner's intellectual development and progress, supports the need for teacher guidance and encouragement during the blogging experience.

There is no denying the fact that we live in a networked society and, consequently, blogging can be framed within Connectivism (Siemens, 2004) and Third Space Theory (Rosenblatt, 1978) as well. Under the umbrella of Connectivism, learners interact, or connect, across a variety of networks with the potential to reach a global audience. This facilitates currency, encourages a diversity of opinions, and expands the capacity to acquire knowledge (Siemens, 2004). Similarly, Third Space Theory centers on the place where a learner's personal space or discourse (first space) intersects a peripheral space or discourse (second space) and

results in the construction of a completely new space known as a third space (Rosenblatt, 1978). Personalized learning opportunities often spring from these third space environments and enable learners not only to draw upon individual funds of knowledge, but also to expand their knowledge base through interaction with others. Connectivist and Third Space Theory embrace the exploration of diverse interests within the classroom, something afforded by the incorporation of blogging as an instructional tool into online book club interaction. As educators, we believe that a balanced instructional approach incorporating elements of these four theories creates an optimum learning environment that is individualized, differentiated, student-centered, and relevant in today's knowledge-based, ever-shifting, networked global society.

Literature Review

The idea of incorporating technology into classroom practice is often met by hesitation, if not outright resistance, by teachers across the educational spectrum. Research on how classroom teachers regard the use of technology in education reveals that, while most find technology to be useful for academic and collaborative skill development, it is difficult to conclusively determine to what extent they believe its use in the classroom positively impacts academic performance (Barseghian, 2013; Fraillon et al., 2014; Önalan & Kurt, 2020; Picton, 2019). It appears that while many readily acknowledge the value of hands-on learning opportunities and accept without qualm the notion that collaboration is a beneficial means of enabling students to master content, the reality of implementing multimodalities into classroom instruction requires commitment, and as such, a reliance upon research to provide a catalyst. Though the volume of peer-reviewed literature on the subject of blogging in the classroom is growing, there continues to be a gap in the data supporting its usefulness as an instructional tool to facilitate student engagement within

the reading and writing classroom, specifically regarding online book clubs. The literature reviewed in reference to this study clearly delineates the need for further research in this area.

Blogging and Its Potential as An Instructional Tool

Since its inception in the 1990s, blogging has provided a vehicle for writers to create original content or share material obtained from other sources, while connecting to readers with common interests. There is a seemingly endless array of blog types: personal blogs, travel blogs, food blogs, fashion blogs, corporate blogs, fitness blogs, lifestyle blogs, and news blogs, to name just a few. The term 'blog' is a shortened form of 'web log,' the technical name for this interactive digital platform. Blogs enable writers to "express their writing ideas and share their writing skills online" (Alsamadani, 2017, p. 44), and elicit an audience response. According to activity records for WordPress, Tumblr, Blogger, Wix, Squarespace, and Medium, blogging continues its upward trend with more than 570 million blogs online as of 2021 (Djuraskovic, 2022). Seventy-seven percent of internet users worldwide read blogs, and people living in the United States are three times more likely to read a blog than emails (Sanders, 2022). Due to the continuing relevance of blogging in today's digital society, there is value in harnessing its educational potential. As noted by Kuehl (2017/2018), today's students must not only be familiar with current technologies, but should receive instruction that facilitates digital literacy and fosters automaticity in navigating online spaces.

A substantial amount of research has been conducted on blogging as an instructional tool. Many of these studies examine blogging within the frame of writing instruction for foreign language learners (e.g., Huang, 2016; Kitchakarn, 2014; Lin, 2015; Shima & Ghoreishi, 2020; Wong & Moorhouse, 2018; Yousefifard & Fathi, 2021). According to Huang (2016), blogs "provide learner writers with an authentic language environment to reach wider audiences, and

allow teachers and student peers to offer feedback and to promote negotiation for meaning" (p. 38). Yousefifard & Fathi (2021) concluded that greater exposure to language input through posting writing tasks on blogs improved the writing quality of Iranian EFL learners. Alsamadani (2017) states that "blogging has revolutionized EFL pedagogy and methodology" (p. 44). He points to dramatic improvement in writing skills "in terms of content, word choice, style, language mechanics, and the like" (p. 44), and recommends that blogging be integrated into school writing curricula. In these and many other cases, EFL research findings are applicable to the regular classroom as well. Wong & Moorhouse (2018), for example, found during their study of young EFL learners in Hong Kong that students were more motivated to write when their purpose for doing so extended beyond merely receiving a grade. Furthermore, the development of an awareness of the audience by students resulted in greater creativity and engagement during the writing experience. Huang's (2016) research findings support those of Aljumah (2012) in that writing becomes less boring and difficult for students when they are given the opportunity not only to write about topics of personal interest, but to also benefit from audience feedback.

A number of research studies emphasize the educational value and opportunities associated with effectively incorporating blogging into regular classroom writing instruction and practice. Some of these studies focus on teachers and their instructional practice (e.g., Carver & Todd, 2016; Lee, 2018; Stover et al., 2014;) while others center on students and their writing craft (e.g., Bakan, 2017; Jordan, 2014; Pilkington, 2018; Tanti, 2012). At least one study (McGrail & Davis, 2014) employs a dual approach, simultaneously examining teachers and students. In that instance, while examining elementary students' views on blogging, the research team interviewed not only the fifth-grade students at the center of the study, but also their teacher. They concluded that blogging provides an effective means for students to develop

audience awareness and hone their writing and communication skills. Of particular interest and relevance to our study are the findings of Campillo-Ferrer et al. (2021), Lee (2018), Li et al. (2013), and Stover et al. (2014), as their research participants were preservice teachers engaged in blogging practices.

Two researchers in particular chose to expand their analysis of blogging as an instructional tool beyond a single study. Boyd, in her 2013 literature review, focuses primarily on how a pedagogical approach to blogging can challenge and expand traditional technology instruction and fundamentally alter the literacy learning environment. The characteristics of blogs are outlined, as are suggested uses of blogs, possible educational limitations, and the students' and teacher's roles in the implementation of this digital pedagogy. Emphasis is placed on the development of a participatory, learner-centered environment with increased critical thinking and collaboration through the use of blogs. Boyd (2013) encourages teachers to incorporate blogging into the curriculum in ways that align with goals and outcomes, and refrain from incorporating technology merely for the sake of incorporating technology. More recently, Kuehl (2017/2018) compiled a literature review in which she addresses various ways blogging has been integrated into elementary classroom writing instruction. She found that including blogging in the teaching of writing showed promise both as a pedagogical tool and also as a vehicle to strengthen classroom community, and suggested that teachers who want a fresh approach to writing instruction consider incorporating blogging into their practice.

The Impact of Blogging on Student Self-Efficacy in Writing Practice

Bumguardner et al. (2014) suggest that "[s]tudent engagement [lies] at the heart of educational blogging" (p. 33). Likewise, self-efficacy, or "a person's belief in their ability to succeed in a particular situation" (Lopez-Garrido, 2020) lies at the heart of engagement. Studies

have shown that higher self-efficacy positively affects students' writing performance (e.g., Cequeña, 2020; Cequeña et al., 2013; Shah et al., 2011). According to Shah et al., (2011), "strong writing self-efficacy means a strong sense of confidence for the task of writing" (p. 9). Prior research conducted by Bandura (1986), Pajares (2000), and Pajares & Johnson (1996) supports this point of view, with the added caveat that self-efficacy has been revealed as the most powerful motivator with regard to writing performance. The recommendation by Shah et al. (2011) that teachers "upgrade their pedagogical practices" and "develop innovative teaching [approaches]" (p. 11) lends itself well to the incorporation of blogging into classroom writing instruction since it has been shown to facilitate student engagement.

Tryon (2006) contends that blogging "helps students become invested in their writing [and gives] them a sense that writing…matters" (p. 128). Pilkington (2018) concurs, pointing out that blogging can help students realize "writing [can be] an important real-world activity as opposed to a task that is performed exclusively for the classroom" (p. 223). She discovered that such a positive shift in attitude motivated students involved in blog writing to be more conscious of style and essay mechanics even though these aspects were not part of grading criteria" (p. 223). This may be attributed, at least in part, to the knowledge that their writing would be read not only by their teacher, but also by their peers (Sütçü, 2020, p. 349). According to Maloy et al. (2019), blogs allow young writers to share information with readers and, thus, enable them to practice "how to use written language so that others can read and understand it" (p. 123). In that way, "blogging encourages understanding by the writer" (Maloy et al., 2019, p. 123).

In her study of a fourth-grade class, Bakan (2017) found that students were more motivated to respond to texts when writing on their blogs. Sütçü (2020), during her study of university English preparatory students, discovered that those "with positive attitudes toward

blogging are likely to become better writers" (p. 349). Kitchakarn (2014) found that "the process of creating and publishing information on blogs…promoted students' creative thinking" (p. 49). Findings from Lin's (2015) study of 18 university-level Taiwanese EFL student writers suggest that the integration of blogging into writing instruction "helps students develop writing skills as well as motivation and self-efficacy" (p. 446). Surprisingly, however, "this enthusiasm did not translate into much actual blogging activity" (p. 446). Research by Bumguardner et al. (2014) found that "agricultural leadership students' low self-efficacy resulted in lowered behavioral intention to use blogging for educational purposes" (p. 38). As a result, the researchers concluded that a concerted effort would be necessary in order for students to embrace the educational value of blogging.

In their case study of 18 second-grade students, Lapp, Shea, & Wolsey (2010/11) sought to establish a correlation between the writer's cognizance of the interests and desires of the audience and his or her ability to transfer that knowledge to various types of writing. After posting their work to the blog and receiving near-immediate feedback from their peers, teacher, and family members, students demonstrated an increased recognition of the importance of audience awareness as evidenced by their acceptance of and appreciation for feedback given and their willingness to edit and adapt their writing. This research study demonstrates that blogging can be a useful tool for teaching novice writers how to take ownership of their own writing, connect with an audience, and write for a purpose beyond themselves.

Use of Blogging to Connect In-School and Out-of-School Practice

As early as 2008, McLoughlin and Lee stated that, in this technological age, educators must rethink pedagogy and shift from the traditional brick and mortar mindset to an expanded landscape that encompasses cooperative learning and collective intelligence within more loosely

defined digital spaces in order to create a learner-centric educational environment. Never was this reality more evident than during the COVID-19 pandemic. Schools closed their doors and students found themselves almost entirely reliant upon digital platforms for their educational experiences. Jerasa & Boffone (2021) report that this dependence reignited interest and engagement in digital literacies as spaces where, unlike those within the controlled boundaries of traditional school buildings, users enjoyed "freedom to communicate, create, and even collaborate with others" (p. 219). Unlike in days past, today's students possess sophisticated expectations regarding technology, coupled with an ability to adapt to rapidly changing digital mediums. For that reason, there is a need for educators to use digital tools to facilitate interest-driven, engaging, self-styled learning experiences in which students are given autonomy framed by appropriate structure and scaffolding. Our goal as educators should be to capitalize on what our students do naturally by redefining learning spaces to encompass new technologies and instructional approaches.

An early research review by Beach (2012) examined how digital tools are used in Language Arts classrooms to promote student engagement and the acquisition of knowledge, specifically with regard to the remediation of print literacies. It outlines how such tools can be utilized to enhance literacy learning, redefine learning outcomes and classroom spaces, and develop new literacies. The author explores barriers to the use of digital tools in schools, including the disparity between student's in-school and out-of-school engagement with digital technology, and outlines a number of implications of the research for English Language Arts teachers as well as for researchers. He asserts that the research focus should be on specific types of learning, enabled and facilitated by various digital tools, and how specific tools and their pedagogical implementation result in specific learning outcomes.

Other research from the same period examined the writing preferences of high school students in terms of in-school and out-of-school writing activities, encompassing a variety of text types (Dredger et al., 2010), explored the disparity between students' literacy practices and current classroom strategies, highlighted the disconnect that existed between Millennials' social and academic experiences in today's world (Considine et al., 2009), and addressed a perceived disconnect between student and instructor perceptions regarding the role of digital technologies in instructional practice on the university level (Gabriel et al., 2012). Dredger et al. (2010) found a marked disparity between motivation to write inside and outside the classroom, with in-school writing being primarily driven by grades and out-of-school writing undertaken more for the purposes of self-expression and communication.

The majority of students who utilized multiliteracies in their writing practice did so outside of school, noting that most in-school writing assignments adhered to traditional methods (e.g. papers, essays, reports, and tests). Based on their findings, Considine et al. (2009) expressed a need for educators to seek ways of closing the divide between students' prior knowledge and content instruction through the incorporation of digital technologies, thus facilitating student success in 21st century society. The writers acknowledge the challenge that often exists for teachers as they attempt to present foundational curriculum in ways that prepare students for a future in a technology-driven world, and call for a commitment to mutual respect and understanding between educators and their students. Findings by Gabriel et al. (2021) reveal significant differences between students' and professors' perceptions regarding the role of digital technologies, leading to the conclusion that there is a need for critical dialogue and professional development related to actual teaching practice.

Today, more than a decade later, a disparity remains between students' in-school and out-of-school practices with regard to technology and digital platforms (e.g., Jerasa & Boffone, 2021; Mohd Yusoff, 2019; Rodriguez, 2018), and educators continue to search for ways to bridge the gap. According to Mohd Yusoff (2019), the availability of technology resources in schools is not the problem; rather, "these resources are continuously ignored, undervalued and consistently recast as a problem in schools" (p. vi). It is our responsibility as educators, therefore, to seek ways of incorporating digital technologies into the curriculum in ways that are meaningful and engaging. Vasudevan (2010) believes that acceptance and incorporation of current technologies, including but not limited to blogging, into classroom practice "can be the very thing that shifts a classroom spirit from inhospitable to inviting" (p. 47). Pilkington (2018) points out that although blogging may be a platform with which some students are already familiar, teachers should adapt it to the needs of a particular curriculum and provide appropriate guidance and direction. This would allow students a certain degree of autonomy and freedom while still enabling instructor oversight.

Vasudevan (2010) further contends that educators must rethink language arts instruction and create classroom spaces where "social media and technologies are not feared or dismissed, but rather included with the promise of building on youths' familiarity with them" (p. 47). Jerasa & Boffone (2021) point out that teachers do not necessarily have to reinvent the wheel, but caution that "adolescent affinity spaces…exist…and thrive because they are not affiliated with traditional school practices" (p. 225). This is not to say that teachers should not explore the potential of current digital technologies. Rather, a realization by educators that the majority of students' current technological practices occur outside the walls of the school can facilitate a better understanding of the need to "take into account [these] out-of-school experiences,

interests, and ways of participation…[in order to] draw from them to build knowledge, to push boundaries from non-academic settings to academic ones, and therefore take new directions in research and classroom practices" (Rodriguez, 2018, p. 32).

Online Book Clubs

Many of today's modern technological advances enable tech-users to interact in non-traditional ways within asynchronous learning environments, facilitating immersion into a new communicative order and a multimedia world (Lankshear & Knobel, 2013). The result is the creation of new literacy practices, or *new literacies*, in which reading and writing are mediated through the use of technological devices (Lankshear & Knobel, 2013). When the global COVID-19 pandemic occurred in 2020 and people around the world quarantined to prevent the virus from spreading, technology became a primary means of personal communication and interaction (Lemay et al., 2021). Many individuals, wishing to escape the limitations of isolation during the lockdowns, turned to online book clubs as one way to regain a sense of community and engage in the exchange of ideas (Cumming, 2021). As a result, these online book clubs emerged as a significant way to interact and stay connected.

According to a 2021 Pew Research study, 85% of U.S. adults report daily online activity, with nearly half describing their online activity as "almost constant" (Perrin & Atske, 2021). These statistics are consistent across all racial groups, with increases in online activity reported across every age group since the previous study, with the exception of adults over 65. The 2018 *Pew Report on Teens, Social Media & Technology* revealed that 45% of teens say they are online "almost constantly" (Pew Research Center, 2018). Given this continuing rise in technology use across our society, it stands to reason that students would benefit from the incorporation of

technology with new literacy practices in asynchronous environments that reach beyond the formal classroom.

The fusion of technology with traditional book clubs to form online book clubs has proven advantageous for enhancing literacy practices and promoting literacy development in adults, adolescents, and children (Carvalho, 2021; Smith, 2019). Scharber (2009) contends that "online book clubs are fun, engaging, and convenient activities for preteens and teens and are viewed by both parents and librarians as motivating and flexible" (p.433). The formation of such interactive communities provides opportunities for members to ask questions, offer new perspectives, and engage with the text in new ways" (Smith, 2019, p. 638). The ability to engage across cyberspace in a non-threatening environment and format allows participants to share in the reading experience while engaging in meaning-making, building community, and benefitting from diverse perspectives (Smith, 2019; Robertson & Smith, 2017).

In a study conducted by Colwell et al., (2018), 12 adolescent participants voluntarily enrolled in a summer online book club, receiving limited guidance from adults for the duration of the eight-week reading program. After selecting their own texts, participants engaged in asynchronous online discussions on a threaded discussion board. Findings revealed that participants' spontaneous discussions resulted in active listening, sophisticated communication skills, and relationally and socially interactive engagement with books.

Robertson & Smith (2017) examined the participation of a single preservice teacher in an online book club in which members read and discussed a professional trade book. The researchers were interested in understanding how the experience influenced their participant's pedagogic beliefs. They concluded that she engaged with the text, learned from the discussions

with other group members, began to think of herself as a teacher, and gained knowledge that influenced both her pedagogical beliefs and her future instructional goals.

Other aspects of the online book club experience have garnered research attention as well. During their study of an online book club partnership between 12th grade language arts students and college students, Schreuder & Savitz (2020) found that text self-selection directly affected motivation and engagement. This is not surprising as research has long recognized choice as a fundamental element of reading motivation (Gambrell, 2011; Guthrie et al., 2007; Reed et al., 2004; Reeve, 1996). Of greater interest was their conclusion that "teachers need to move away from seeing technology as an add-on to pre-established curriculum [and instead view it] as transformational to the foundation of curriculum design and implementation" (Schreuder & Savitz, 2020, p. 272).

Wyant and Bowen (2018) found that a book club's structure and format directly affect its success, and conclude that "book clubs are an effective pedagogical tool because of their flexibility and ability to foster student engagement and higher-level thinking" (p. 270). A study by Hales et al. (2021) revealed that students who participated in their book club not only expressed enjoyment, but also "grew professionally from reading and having the opportunity to collaborate and discuss ideas" with other members of the group (p. 142). Researchers also observed that participants exhibited increased professional interpersonal communication, even when expressing an opposing or dissenting opinion.

There is a marked lack of research and documented classroom practice directly connecting online book clubs with the use of a blogging platform, and the consequent educational possibilities. It is, therefore, important to explore the pedagogical opportunities

inherent in a relationship between the two. This study examines how the marriage of formats is perceived by preservice teachers and to what extent their own participation and experience influence their perception of the pairing.

Methodology

Participants

Participants in this research study included 18 undergraduate students enrolled in a Literacy Methods Block at a southeastern university in Texas. The course, which focused on reading, writing, and assessment instructional methods, was taken by these students in partial fulfillment of the requirements for EC-6 and/or 4-8 teacher certification; the first and second authors were instructors for the course. The third author also taught a section of the same education course. The class met two times each week, Mondays and Wednesdays, for approximately three hours per day. Of the 18 students, 13 were female and 5 were male. Participants, also referred to as preservice teachers, were previously admitted to the educator preparation program and, therefore, were selected for participation in this study as part of a purposive and convenience sample.

Instrumentation

Surveys used for this investigation were developed by the researchers for data collection purposes. Pre-participation and post-participation surveys were piloted with a similar population of preservice teachers before administration to the research population, and construction of each survey was discussed with experts in the field of quantitative research prior to use. For purposes of this research study, "survey refers to a group of quantitative data collection techniques that involve the administration of a set of questions or statements to a sample of people" (Mertler, 2016). The survey consisted of 15 quantitative questions and 5 qualitative questions. The

quantitative component of the pre-participation survey was administered using a four-point Likert scale of strongly disagree, disagree, agree and strongly agree, in order to establish a baseline regarding students' perceptions of blogging and online book clubs prior to targeted classroom blogging instruction and participation in online book clubs. The qualitative component of the pre-participation survey included five open-ended questions with related sub-questions intended to enable participants to elaborate and expound upon the information given in the quantitative piece. The format of the post-participation survey was consistent with the pre-participation survey; however, some questions were reworded to collect information from participants based on their participation in online book clubs and classroom blogging instruction.

Procedures

Research was conducted during the regular semester for the duration of an instructional unit covering blogging and online book clubs, as well as throughout students' participation in two sessions of online book clubs; this included two weeks of classroom instruction and six weeks of online book club participation with one week between instruction and participation to discuss course requirements and treatment implementation and to ensure students adequate time to obtain copies of their chosen titles. Blogging instruction and participation in online book clubs comprised a small component of the overall course requirements for the Literacy Methods Block. Students were not graded on surveys, blog posts, or any written or oral component of this research study. They did, however, receive participation points as with all other course requirements. Researchers thoroughly explained the process and the guidelines that participants would follow during the intervention. Participants were guaranteed anonymity and were made aware that no identifying factors regarding their participation or responses would be included in the final write-up. Participation in the study provided evidence of consent; such was clearly

stated on the pre-participation and post-participation surveys. Though participants were given the opportunity to opt out of the study, all students enrolled in the course chose to participate.

Administration of the pre-participation survey occurred three to four weeks after the beginning of the 14-week semester, and was followed by introduction to online book clubs, targeted classroom blogging instruction, and participation in online book clubs and blogging. In the timeline below, Week 1 refers to the first instructional unit, which was Week 4 of the semester.

Timeline.

Week 1. Administered pre-participation survey and completed instruction about online book clubs. Students made book selections and were assigned by instructors to online book clubs based on their book choices.

Week 2. Completion of blogging instruction.

Week 3. Discussion of implementation and time for students to acquire copies of their book selections.

Weeks 4-6. Students participated in the first round of online book clubs.

Weeks 7-9. Students participated in the second round of online book clubs.

Week 10. Post-participation survey was administered to students.

Participants were assigned to online book clubs based on their selection of two books to read from a list provided by the instructors. Book choices were novels written for children that are appropriate for elementary-aged students and were placed on the selection list based on their literary merit as determined by awards received, professional journal reviews, and librarian recommendations. As elementary education teacher candidates, participants are expected to

incorporate this type of literature into their future classroom practice and, as such, were required to purchase copies of the two books they would read as part of the course requirements.

The actual selection and assignment protocol for each 3-week online book club session followed this procedure: 1) students were introduced by the instructor to each potential book selection, 2) students listed their book selection choices in order of preference and submitted to the instructors, 3) instructors sorted student book choices in order of preference by title, and randomly selected five student names for each book title, beginning with first choices and moving down the list for each title until all students were assigned for each session.

Instruction about online book clubs included an introduction to the format, guidelines and best practices, and introduction to select children's literature. Blogging instruction included the basic fundamentals of blogging, an overview of various blogging platforms, instruction in blogging etiquette, and how to incorporate blogging into online book club participation. The blogging platform, Edublogs, was selected by the instructors for use during this study.

Analysis of quantitative and qualitative data from the pre-participation and post-participation surveys allowed researchers to determine whether a shift in perceptions of blogging as an instructional tool to facilitate engagement in online book clubs occurred after participation.

Data Collection

This study focused on participants' perceptions of blogging in conjunction with online book clubs, both as a pedagogical tool for their future instructional practice and during their current experience in Literacy Methods Block. Researchers employed a mixed-methods pre-and-post-survey design to collect and analyze data for the study. Questions on the pre-participation and post-participation surveys were intended to determine participants' perceptions of reading, book clubs, social media usage, and blogging as an instructional tool. "Pre-test/post-test designs

are widely used in behavioral research, primarily for the purpose of comparing groups and/or measuring change resulting from the experimental research" (Dimitrov & Rumrill, 2003).

In addition, participants responded to five open-ended questions at the bottom of the survey. Questions to which participants responded were:

1. Would you consider incorporating blogging in your future classroom instruction? Why or why not?
2. Would you consider incorporating online book clubs in your future classroom instruction? Why or why not?
3. Would you consider pairing blogging and online book clubs in your future classroom instruction? Why or why not?
4. What were the positive aspects of this experience for you?
5. What were the negative aspects of this experience for you?

Quantitative Data Analysis

For the quantitative data analyses a database was created in Statistical Package for Social Sciences (SPSS) to analyze responses to the Likert scale questions; researchers used the *t*-test for dependent samples with a statistical significance of .05. Salkind states "a *t*-test for dependent means indicates that a single group of the same subjects is being studied under two conditions" (2014, p, 218). There were no statistically significant differences in scores; however, after comparing mean scores for each item, both positive and negative differences were revealed on several survey items.

Although there were 15 Likert scale questions on the survey, we chose to only include items for discussion in which a difference was revealed in responses between pre-and-post-participation. Presented in Table 1 are the descriptive statistics used to measure and analyze

shifts in perceptions based on the quantitative data obtained from participants on the pre-and-post-survey.

Table 1

Descriptive Statistics of Pre and Post Survey Responses

Survey Item	*n*	Pre *M*	Pre *SD*	Post *M*	Post *SD*	Differences in pre and post
I enjoy discussing the books I read with people.	18	3.06	0.80	3.33	0.69	0.28
I like to write about books I read.	18	2.00	0.77	2.17	0.86	0.17
I believe I know a lot about blogging.	18	1.94	0.80	2.56	0.62	0.61
I believe I know a lot about online book clubs.	18	1.56	0.51	2.50	0.71	0.94
I am interested in blogging.	18	2.44	0.62	2.17	0.86	-0.28
I would like to be involved in online book clubs.	18	2.44	0.78	2.28	0.89	-0.17
I would use blogging as an instructional tool in my future classroom practice.	17	2.82	0.39	2.89	0.58	0.07

Discussion of Quantitative Data Analysis

Though not much was revealed in the responses to the pre-and-post survey scale, a few items did have some noteworthy change. The greatest difference in pre-and-post responses was noted for the survey item, ‘I believe I know a lot about online book clubs’, with an increase in

response of 0.71. This indicates that, after participation in online book clubs, participants feel more knowledgeable about the process. A similar difference was revealed for 'knowing a lot about blogging', which supports increased awareness through the opportunities to participate in these experiences. In addition, there was a small increase in participant responses to 'enjoying discussing books with others'. The increase in these responses reveal through their experiences and participation preservice teachers learned more than they thought initially about blogging and book clubs. However, conversely, scores decreased for the idea of continuing to participate in blogging or online book clubs.

Qualitative Data Analysis

Miles, Huberman, and Saldana (2013) "divide [qualitative] coding into two major stages: first and second cycle coding" (p. 73). From the participants' responses, the researchers generated inductive codes. "A descriptive code assigns labels to data to summarize in a word or short phrase…the basic topic of a passage of qualitative data" (Miles, et al., 2013, p. 74). During second-cycle coding, the researchers employed thematic analysis, categorizing codes into themes. "Themes in qualitative research are broad units of information that consist of several codes aggregated to form a common idea" (Cresswell, 2013, p. 186).

Guided by Miles, Huberman, and Saldana (2013), the first and second researchers divided qualitative coding into two stages. During first cycle coding, they repeatedly read, studied, and discussed the 18 participants' responses to the five open-ended survey questions until naturally occurring patterns and categories began to emerge. These inductive codes, drawn from the actual language of participants, were highlighted by hand and transferred to a table

format, where they were categorized as positive, negative, or neutral responses to the post-participation survey questions.

During second-cycle coding, the first and second researchers employed thematic analysis to combine these initial codes into six broader, more comprehensive categories (Cresswell, 2013). Those categories were then placed into two overarching themes: Positive Aspects and Challenges regarding participation in blogging and online book clubs (see Figures 1 and 2 below). The third researcher reviewed the data analysis process and verified the themes, then pulled significant quantitative findings and worked with the first and second researchers to triangulate those with qualitative themes and participant responses. Triangulation continued as the three researchers met multiple times via Zoom to further discuss and solidify research findings.

Figure 1: Positive Aspects of Blogging and Book Club Participation

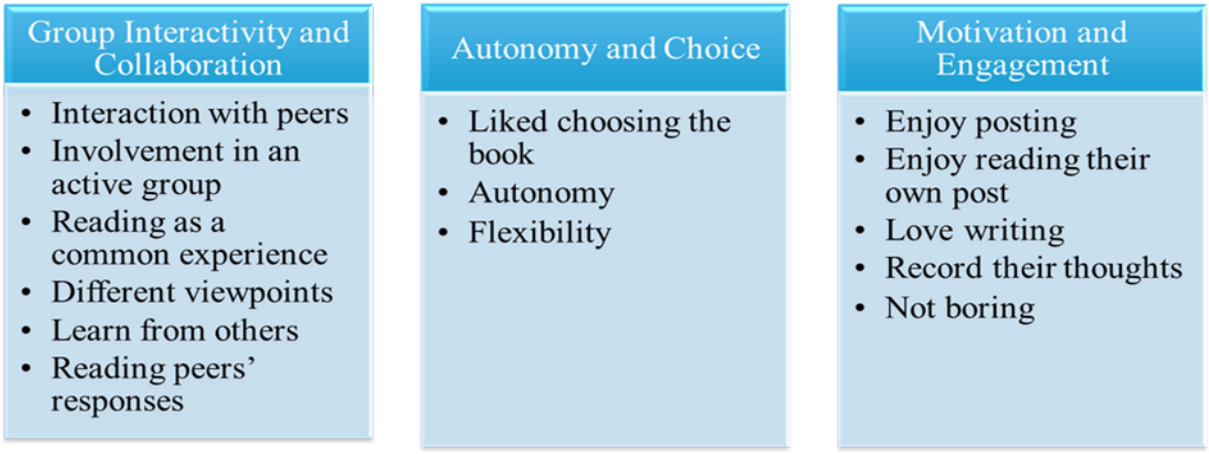
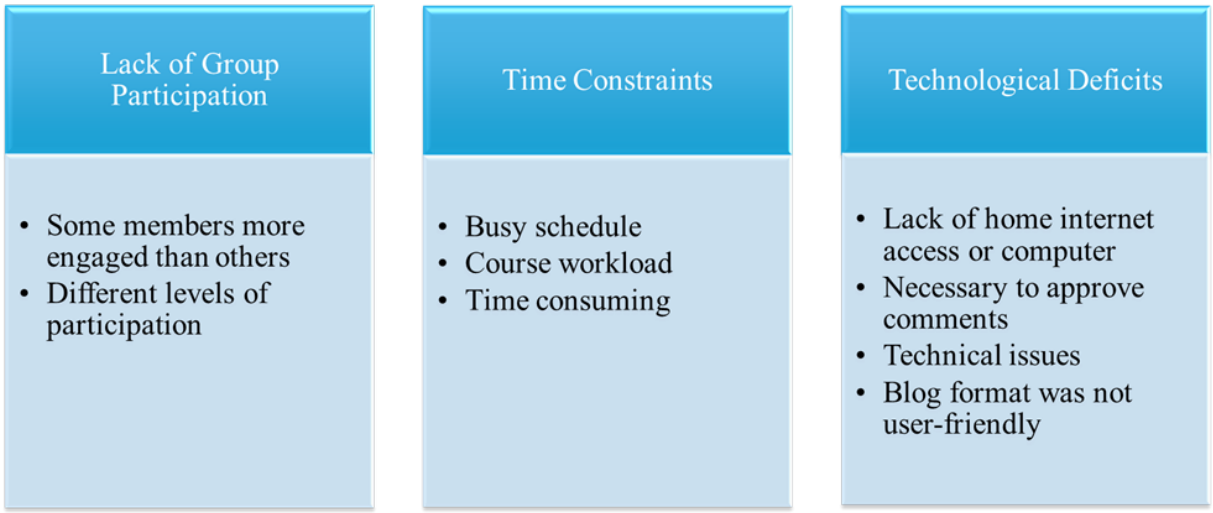


Figure 2. Challenges Participants Expressed



Results

All 18 participants responded to every question on both the pre- and post-participation surveys, and the overall response was positive as seen in Table 2 below. The first three of five post-participation open-ended survey questions were two-pronged in nature: first, students were asked a yes or no question, then were asked to elaborate on their answers. Tables 2 through 4 present participant responses to the survey questions, highlighting specific comments based on themes identified.

Table 2 *Post-participation Survey Responses to Q#1*

Q#1: Would you consider incorporating blogging into your future classroom instruction?	**Yes** 11	**No** 4	**Maybe** 3
Open-ended responses			
Positive: "I think it is a great way to do journals and being online is fun and engaging for students." "It is a great way and an interactive way to keep the class engaged with the reading. It doesn't even have to be about reading. It can be used for many different aspects of the class." "It is a way to [provide] uniform instruction while allowing for creative freedom and is an easy way for differentiated instruction." "I would consider. It is a good way for students to chat about similar interests." "I think blogging is a great tool for the classroom."	**Challenges:** "The busier I was, the less motivated I was. I believe this would be true if my students were really busy." "Blogging is something that you really want to do for it to be successful. I wouldn't have done it if it wasn't for a grade." "The amount of interaction is too superficial because of the loss of face-to-face interaction." "Students can post whatever they want, and even if you tell them to keep it appropriate, you have no way to control what they post. Also, some kids may not have access to a computer at home."		

Table 3 *Post-participation Survey Responses to Q#2*

Q#2: Would you consider incorporating online book clubs into your future classroom instruction?	**Yes** 7	**No** 3	**Maybe** 8

Open-ended responses	
Positive: "You get to know your classmates a little better and get to have some say on what book you want to read." "I think the communication back and forth is a great idea." "Online book clubs are very convenient. They can be done from anywhere without having to meet up." "Depends on what grade I teach. If I taught fifth or sixth grade I probably would. "It would help students become better writers…"	**Challenges:** "Not enough engagement." "I would rather do it in person to see who actually is doing the reading." "I do not plan on doing online book clubs because I plan on teaching kindergarten." "I would consider it, but I think I would rather the students meet in class in their groups to discuss the book."

Table 4 *Post-participation Survey Responses to Q#3*

Q#3: Would you consider pairing blogging and online book clubs in your future classroom instruction?	**Yes** 11	**No** 4	**Maybe** 3
Open-ended responses			
Positives: "It incorporates technology, convenient for busy students, and gives them the freedom to write/blog about anything they want with the book."	**Challenges:** "It's something that I am not interested in." "I would want my students to really engage and I feel that if they have to engage online they will limit the discussion, whereas if		

"It will allow students to read books of their interest, and in response they will be able to have more elaborate conversations." "I believe they are a great interactive tool to get children motivated to read. It is also an activity which is out of the norm." "I would possibly consider, but would more likely use the blog exclusively." "They work very well together, I think."	they talked in person ideas and thought may flow easier for them; less formal." "The amount of elapsed time from one post to another is too long." "It depends on the grade I teach. Most students will not participate and may not have technology at home to do this on." "Some kids might hate it."

The remaining two post-participation open-ended survey questions addressed participants' thoughts on the positive and challenging aspects of their own experiences with blogging and online book clubs during the Literacy Methods block. Table 5 presents a representative selection of participant responses to those questions.

Table 5 *Participant Responses to Personal Experiences with Blogging and Online Book Clubs*

Q#4: What were the **positive** aspects of this experience for you?	**Q#5:** What were the **negative** aspects of this experience for you?

"I never have really enjoyed reading, but I really enjoyed this book! Giving freedom to work at my own pace and no guidelines/questions that must be answered was a relief. I could read without the stress of looking for answers to questions." "I was able to get to know others more and how they experienced the reading differently from me. Each of the other group members made great points on my blog that I did not think about." "I love writing so being able to have a blog to jot down a few thoughts was a nice experience." "It was nice to have people who read the same book as me. In my own context, I got to choose when I would post on my blog." "I enjoyed reading the posts and making my own." "The positive aspects were: quick feedback to discussions, could write about my book at any point, did not have to meet in person."	"Having to post on the blog, I ran low on time and it just became a drag having to post." "The blogging was something I am not interested in so I felt it was a chore." "I had so many technical issues with this blogging experience." "Time consuming and hard to find some bloggers." "Group members not giving their all in their responses and waiting until the last minute to post." "I was not able to read a book of my choosing. I felt rushed to make posts. All the posts were out of order. Discussions were not as in-depth as in person."

While post-participation results indicate that a majority of participants were likely to pair blogging with online book clubs in their future classroom instruction, some participants indicated an unwillingness to implement this combined approach. Some noted that doing so would depend on the age of their students and the availability of technology. For others, the loss of in-person communication was a recurring concern, as was the time required for implementation and execution.

Discussion of the Findings

The results of the pre-and-post surveys indicate that participants' perceptions were mixed regarding blogging and online book clubs. There was a notable disparity between qualitative and quantitative findings, which may be attributed to participants' ability to provide more thoughtful, in-depth responses to the open-ended questions on the post-participation survey, as opposed to only the brief Likert-scale survey format of the pre-participation survey.

Post-participation survey results reveal that most pre-service teachers enjoyed reading and discussing their ideas through their blog posts and comments. Although, initially, some of the participants did not enjoy reading, book choice was shown to be a key factor in their increased reading engagement. This is consistent with previous research findings which reveal that text selection directly affects motivation and engagement (Schreuder & Savitz, 2002), and choice has long been recognized as a fundamental element of reading motivation (Gambrell, 2011; Guthrie et al., 2007; Reed et al., 2004; Reeve, 1996). Several participants enjoyed reading and discussing books, but the online experience was not desirable for all. This was most often rooted in frustration over time constraints, technological issues, and a perceived lack of full engagement on the part of fellow group members.

With regard to their future classroom teaching practice, the majority of participants noted concerns about blogging and online book clubs which included grade level taught, access to technology, and student motivation and engagement. They also expressed concerns over the amount of time required by the teacher to oversee and monitor students' online blogging activity. While quantitative findings indicate hesitation to commit to the implementation of blogging and

online book clubs, through their open-ended responses participants noted more positive aspects than challenges, with a majority responding favorably to the pairing.

Interestingly, responses both for and against incorporating blogging and online book clubs into future classroom practice addressed the interactivity aspect. While some participants felt that blogging about books allowed for greater interactivity, others viewed it as more limiting than face-to-face discussion. One positive aspect, however, is that even though online book clubs may not be considered the most popular way to interact with others for purposes of discussing literature outside the classroom, participants still perceive reading and discussing books as valuable. Of significance, Cumming (2021) noted the vast growth in online book clubs and blogging during the pandemic. Forced isolation paved the way for people to connect online when they were not able to in person.

Implications

Through personal experience with blogging and online book clubs, preservice teachers developed a new understanding of this educational pairing and its effectiveness as an instructional tool. Personal participation enabled them not only to experience this pairing firsthand, but also to assess its value and feasibility in their future educational practice. Boyd (2013) supported the use of blogging as a pedagogical approach versus minimal or less intentional technology use to engage students. Blogging in conjunction with online book clubs is a promising teaching tool if aligned with students' interests, time availability, and technological possibilities. It is crucial, however, that teachers facilitate student buy-in by enabling a degree of literary choice, providing clear guidelines for participation and interaction, and allowing students adequate time to familiarize themselves with the blogging platform of choice.

Limitations and Further Research

This study is limited by a small sample size of 18 participants and a brief timeframe of 10 weeks, which may not enable a definitive determination of preservice teachers' perceptions of blogging as an instructional tool to facilitate engagement in online book clubs, or to what extent their personal experiences impacted their perceptions. In addition, a single blog platform was used, and students were required to choose books from a limited selection of texts stipulated by the instructors. Participation in this study was required as a component of the Literacy Methods Block in which participants were enrolled. Of consideration, it may have been the setting and instructional requirement that may have deterred some participants. Given the opportunity to participate in the process through personal choice and individual time may support more positive connections from the majority of participants.

Technological deficits were a concern for a number of participants as well. Not only does interaction via online platforms such as blogs or Zoom hamper face-to-face interaction in the basic sense, it potentially presents a whole range of additional complications including delayed response time, hesitation to verbalize thoughts in a digital setting, and breakdown in communication flow. With regard to their future teaching practice, participants voiced concerns over classroom technology issues and student internet access.

The same study could be repeated with a larger sample of preservice teachers, and greater autonomy over book selection and blogging platform could be considered. Additionally, a similar study may include graduate students or inservice classroom teachers to encourage implementation with their students. Lastly, implementing blogging and online book clubs with students, especially at the middle to secondary levels would be of significance to determine their

engagement in reading and writing with the use of technology. Such a study could be expanded across universities and schools in different geographic locations; specifically, across other languages and/or culture groups for the purpose of determining how, where, and why results do or do not hold up.

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Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Literacy Teachers Address Broadband Gap Through Broadcast Pedagogy

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Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Abstract

During emergency remote learning, students affected by the broadband gap were left without teacher-led, standards-aligned reading instruction. To address this inequity, a multi-organizational new literacies Community of Practice (CoP) developed and filmed literacy lessons via public broadcast television. This collective case study addressed two research questions: (1) What are the components of broadcast pedagogy? And (2) how do teachers perceive the value of innovating with new literacies, like broadcast pedagogy? Findings include an original framework for broadcast pedagogy in literacy that can be used to guide instructional innovation. Teachers perceived that innovating with new literacies allowed them to (a) address instructional equity, (b) extend their sphere of influence and (c) revisit their professional literacy content knowledge. The study illustrated how some educators leveraged public television to deliver equitable literacy instruction during the COVID-19 pandemic. The multi-organizational CoP framework has implications for teachers, teacher educators, and industry- and community-based organizations.

Keywords: broadband, equity, new literacies, literacy, Community of Practice

Introduction

COVID-19 and the shift to emergency remote teaching (spring 2020 through early spring 2021) called renewed attention to infrastructure vulnerabilities, like the broadband gap, which refers to inequitable access and use of broadband internet (Castells, 2010). Given widespread and sudden closure of school buildings, the broadband gap exacerbated already existing educational inequities, including access to teacher-led, standards-aligned PreK-5 reading instruction. These inequities are expected to grow larger as a result of emergency remote learning (Aguilar, 2020). Research suggests that disparities in broadband access occur most frequently among historically marginalized populations and negatively affect student outcomes (Cruz-Jesus et al., 2012). During emergency remote learning, an estimated 14% of emergent readers across the United States did not have reliable access to broadband internet, could not consistently connect with their teachers, and did not have access to teacher-led, standards-aligned reading instruction (NCES, 2019). The rates of disconnect were even more alarming in North Carolina, where an estimated 30 percent of K-12 students did not have a reliable internet connection suitable for emergency remote learning and 23 percent did not have adequate devices for remote learning (Chandra et al. 2020).

To address the compounded need for access to teacher-led, standards-aligned reading instruction for students without broadband, seven states, including North Carolina, forged partnerships with public broadcasting stations to produce and broadcast standards-aligned instruction for math and literacy (PBS, 2020). Radio and television have historically been utilized in precarious times to net the attention of youth (Luke, 1990) and have been implemented in various ways within public schools (Fabos, 2008). The Public Broadcasting Station North Carolina (PBS NC) programming analyzed in this study is unique, however, in that

it positions literacy teachers as media producers, providing a window into processes and motivations for pedagogical innovation through a familiar medium, i.e., television.

The purpose of this collective case study (Stake, 2013) is to explore how literacy teachers, involved in a multi-organizational Community of Practice (CoP) (Lave & Wenger, 1991), worked together to adapt formal reading instruction for television during emergency remote learning (spring 2020 through early spring 2021). We draw from teacher-created televised lessons and teacher interviews to (a) propose a framework for broadcast pedagogy, which educators can implement and build upon in their efforts to modify in-person teaching, and (b) to understand teachers' perceptions of the value of innovating with new literacies (Hodges et al., 2020), which can contribute to ongoing efforts to support teachers in ever-changing instructional contexts.

This study serves as a model primarily for teachers who are interested in adapting and innovating with their literacy pedagogy for instructional contexts beyond the classroom. Secondarily, this study serves as a model for teacher educators as they support teachers in the inevitable work of adaptation and innovation, and for industry- or community-based organizations as they partner with teachers to create and deliver innovative literacy content for young learners through broadcast pedagogy.

In the next section, we position the following two research questions within the theoretical frameworks of New Literacies Studies (NLS) and CoP: (RQ1) What are the components of broadcast pedagogy? And (RQ2) how do teachers perceive the value of innovating with new literacies, like broadcast pedagogy?

Theoretical Framing and Relevant Literature

This study is situated in the theoretical traditions of New Literacies Studies (NLS) and Community of Practice (CoP). NLS researchers emphasize that all literacy practices are situated within social, cultural, historical and economic contexts (Street, 1998) and argue that literacies are mediated and transformed through new technologies (Lankshear & Knobel, 2006, 2011; Knobel & Lankshear, 2014). NLS researchers work to "anticipate beyond the present and envisage how best to educate now in order to enhance learners' capacities for effective meaning-making and communication in the foreseeable future" (Knobel & Lankshear, 2014, p. 97). Because youth continually find new ways to engage in familiar literacy practices (Knobel & Lankshear, 2002), much of NLS research centers questions about everyday literacy practices and how popular culture and digital literacy practices influence in-school literacy learning (Davies, 2006; Gee, 2012). Some teacher education researchers who take up NLS posit that addressing new and multiliteracies in teacher preparation programs and via ongoing professional development improves in-school literacy outcomes for learners (Cervetti et al., 2006; Author, 2013). Given the changing landscape of instruction, our study acknowledges that teachers need further opportunities to learn and adapt familiar tools and literacy practices to meet emergent student needs. In the case of this study, emergent student needs include lack of consistent broadband access and, therefore, a disconnection from formal reading instruction.

Television, the instructional medium at the center of this study, has long been leveraged to enhance young learners' literacy skills. *Sesame Street*, for example, emerged in response to longstanding, unmet educational needs of preschool students living in underserved communities. Research on the program quickly proved how formidable a tool broadcasting can be, in particular when it comes to early literacy development, one of *Sesame Street's* five original curricular goals (Palmer & Fisch, 2014; Fisch, 2004). Similar educational programming, driven by explicit

literacy goals (e.g., *SuperWhy*), has returned positive effects on early literacy development, including the ability to decode and comprehend (Fisch, 2004; Linebarger, 2015). We know that such programs can be beneficial for learners and thus indirectly for their teachers, but we know little about teacher motivations and processes for pedagogical innovation via television.

A growing number of teachers, who recognize the value in new literacies and Information and Communication Technologies (ICTs), have worked to innovate and expand their practice (Spires et al., 2012). For instance, teachers are increasingly taking advantage of ICTs in order to create and share content widely [e.g., teachers pay teachers, Pinterest, Open Educational Resources (OERs)]. This content is not always vetted for alignment with best instructional practices and curriculum standards nor is it equitably accessible. A growing body of research has linked new literacies professional development to teacher leadership and teacher advocacy in the United States (Coiro et al., 2008; Lankshear & Knobel, 2011) and globally (Spires et al., 2018; Kerkhoff et al., 2020). Television is not a new technology; however, the manner in which teacher leaders in this study leveraged it during the COVID-19 Pandemic to deliver systematic reading instruction to students without robust access to broadband internet is novel and warrants close study.

The second theory that we draw from is Community of Practice (Lave & Wenger, 1991). We explore how teachers engage new literacies (in this case, broadcast pedagogy) to adapt what they know about good literacy instruction through participation in a multi-organizational CoP. Typically, CoPs are organized dialogic groups in which practitioners share professional insights with colleagues at the school or district levels. In this study, teachers participated in a multi-organizational CoP, composed of literacy researchers, state-level content experts, professional media producers, and other highly-qualified literacy teachers.

In the decades since its original conception, there have been different iterations of CoPs, including job-embedded or informal and inquiry-specific (Smith et al., 2017). CoPs emerge from socio-constructivist ideas about learning—namely that dialogue and knowledge sharing across varying levels of experience contributes to professional identity. Scholars interested in how participation in a CoP influences teacher learning and professional growth have identified important design features of a functioning group, specifically, multiple means of engagement, varied perspectives for knowledge exchange, and opportunities for leadership (Horrocks, 2019).

Taken together, new literacies and CoP form the theoretical base for our research. We use new literacies as a lens to understand teacher adaptation of literacy instruction in an increasingly uncertain and complex world and CoP as a structure and lens to understand teacher collaboration and innovation.

Context of Research Project

In summer 2020, the North Carolina Department of Public Instruction (NC DPI) contacted the Friday Institute for Educational Innovation at North Carolina State University and PBS NC with an idea to provide high-quality, standards-aligned PreK-5 literacy and math instruction via public access television for students learning at home without broadband internet access. The project was funded through the Coronavirus Aid, Relief, and Economic Security (CARES) Act. That fall, a team from the Friday Institute recruited 24 PreK-5 educators, 12 who were literacy-focused and 12 focused on math, through their professional networks to design and film 192 literacy and mathematics lessons. These educators were grouped in grade-level, content-area teams to formulate cohesive lesson sequences for each lesson series, identifying learning goals and state standards with which to align content.

Simultaneously, NC DPI, PBS NC, and Friday Institute teams discussed the instructional format that would best serve students and caregivers across the state, settling on 10- to 12-minute lessons with accompanying extension activities. NC DPI and the Friday Institute worked to secure publisher permissions for high-quality texts to be utilized in the PreK-5 literacy lessons and broadcast on-air and on-demand.

With the guiding structures set, the educator teams began developing engaging, curriculum-aligned lessons for the broadcast format. Three teachers comprised each grade-level, content-area team, including a lead teacher who went through the iterative lesson design process first and then shared lessons learned with their teacher teammates. Each cohort of teachers engaged in multiple rounds of feedback within the multi-organizational CoP, consisting of NC DPI PreK-5 literacy and mathematics experts, University of North Carolina (UNC) System Literacy Fellows, and the Friday Institute's team. These feedback loops provided teachers with support toward strengthening standards alignment, student engagement, and pacing within and across lessons.

Given studio and timeline constraints, teachers were made aware at the beginning of the project that each would have a four-hour session during which all eight 10- to 12-minute lessons needed to be filmed. To meet these filming requirements, the multi-organizational CoP recognized that scripting each lesson would ensure a smoother and more efficient filming process, especially with the scripts being pre-loaded on a teleprompter for teacher use during filming. PBS NC created a studio space at the Friday Institute, where teachers enacted their lessons from December 2020 through February 2021. Lessons began airing on PBS NC in February 2021. As lessons were broadcast on public television, their recordings and extension

activities also became available online through NC DPI's Open Educational Resource (OER) platform.

Methods

Study Overview

The data analyzed in this article are grounded in a year-long collective case study (Stake, 2013) examining teacher engagement with broadcast pedagogy within a multi-organization CoP (Lave & Wenger, 1991). Case study allows researchers to address both "how" and "why" questions within a contemporary, bounded phenomenon. To better understand how and why teachers innovated with new literacies and how they went about engaging in and developing broadcast pedagogy throughout emergency remote learning (spring 2020 to early spring 2021), we conducted qualitative research with seven volunteer literacy teachers, recruited from the larger group of 12 literacy teachers. The participants represented a range of grade bands, experience with reading instruction, and lesson foci. Participants shared common planning parameters (e.g., timing requirements and access to post-production services); therefore, we were able to analyze across cases for comparisons of pedagogical choices unique to the broadcasting context. We employed rigorous study procedures, including sharing a masked manuscript with participants for member-checking, and carefully considered issues of trustworthiness, reliability and validity; however, as is true for all case studies, our findings are not generalizable (Stake, 2013).

Research Team

The team consists of four researchers who contributed to the writing of the research manuscript, all of whom have extensive experience in K-12 literacy and teacher education. Although authors wore multiple hats throughout the project, each had a primary function in the

study. Hiller Spires served as the visionary for the project, the leader for teacher recruitment and originated the concept of broadcast pedagogy. Marie Himes served as the project manager for pre-production, working closely with the teachers and multi-organization partners to prepare television-ready lessons. Erin Huggins led project data collection and data management; while Sarah Bausell led data analysis and manuscript development.

On one hand, Himes' and Spires' close connection to all project participants and involvement with project development allowed them to be immersed in the data. On the other hand, their familiarity with the participants posed some methodological challenges. Given the project duration and the likelihood that participants' interview responses might be affected by these relationships, Huggins and an assistant, unknown to the participants, conducted all interviews. Interviews were transcribed and masked, with direct references to research team members excluded from analysis. Bausell and a research assistant developed the initial codebook and coded all data. Then, Himes, Huggins, and Spires re-engaged with analysis in phases two and three as a "matter of giving meaning to first impressions as well as to final compilations" (Stake, 2013, p. 71).

Participants

We invited the project's twelve, highly-qualified literacy teachers to participate in this study; seven volunteered. For the purposes of this study, we define highly-qualified as an educator with five or more years of experience or at least a master's degree in education. Participants have a range of teaching experience, all at the elementary level. They work in rural, rural-fringe, and urban districts and vary in terms of racial demographics. All participants entered teaching through traditional educator preparation programs, and several have advanced degrees in literacy. See Table 1 for professional demographics. Participants developed and

filmed their lessons over the course of five months while also maintaining full-time jobs as educators. They attended anywhere between 6-15 virtual CoP meetings, each lasting approximately 60 minutes. In between meetings, participants received and responded to written feedback from NC DPI content experts on their lesson plans and scripts. Participants were compensated for their involvement in the project.

Table 1. *Participant Professional Experience*

*Name**	*Position*	*Years of Professional Experience*	*Highest Degree Obtained*
Ms. Link	4th-5th grade	5 years	Master
Ms. Jackson	2nd grade	10 years	Master
Ms. Oldes	Teacher Educator	21 years	Doctorate
Ms. Matthews	Literacy coach	27 years	Doctorate
Ms. Roberts	4th grade	6 years	Master
Ms. Doyle	Literacy coach	16 years	Master
Ms. Alaria	Kindergarten	23 years	Bachelor

*pseudonyms

Data Sources

Data sources for this study include (a) 56 lesson plans, (b) 56 video lessons and (c) seven semi-structured interviews. Given in-person restrictions during the COVID-19 Pandemic, semi-structured interviews were held online and audio recorded via ZOOM. Lesson plans were created using Google Docs, which allowed researchers to see a timeline of changes from each contributor, making it easier to see the evolution of collaboration rather than a singular product.

Given the focus of this project on teacher innovation and the use of a CoP to support the collaborative process, this was an essential quality.

Data Analysis

Our analysis is informed by Stake's (2013) delineations of case study, which emphasize the importance of researchers' impressions in data analysis and call for a commitment to methodological validation procedures, such as data source and investigator triangulation. Progression of our research study hinged on final post-production efforts, and at the onset of our analytic procedures, final products were not yet available. According to Stake (2013), data collection and analysis can occur simultaneously. Given the complexities of timing, our first phase of data analysis responded to RQ2: How do teachers perceive the value of innovating with new literacies in order to engage in broadcast pedagogy? To address this research question, we engaged in three phases of data analysis, using an open coding process. The first author open-coded (Strauss & Corbin, 1990) interview data and developed a preliminary codebook, which focused on how teachers described their process of innovating with broadcast pedagogy and their motivations to engage in the process. A research assistant then independently coded a sample (30% of total sample) of the same data; they met to resolve inconsistencies, collapse codes, and establish trustworthiness of analysis. Initial findings were shared in a larger research team meeting. At this time, themes were defined and researchers collaboratively memoed (Creswell & Poth, 2016) about broadcast pedagogy in relation to these themes.

The second phase of data analysis focused on RQ1: What are the components of broadcast pedagogy? During this phase of analysis, the first author and a research assistant coded the video lessons using *a priori codes* derived from how participants described their shift to teaching on television (e.g., post-production, gestures, wait-time, everyday home items) in

interview responses. See Table 2 for sample codes and definitions. In the final phase of analysis, the full research team worked to triangulate data sources by reading across all data sources and sharing findings in written form for participant member checking. Data triangulation contributes to the reliability and validity of our analysis (Stake, 2013).

Table 2. *Codebook*

	Components	Sample Codes	Sample Definitions	Sample Quotes
Research Question 1: What are the components of broadcast pedagogy?	Coordinating Content Facilitating Teacher Presence Scripting Teacher Talk Leveraging Post-Production Affordances	Post-production	Reference to extending content knowledge via broadcast medium.	"Speaking and collaborating with DPI helped me think more about what my students really need to know from this standard. From our conversations, I was able to snapshot the bits of information they are going to be able to take with them."
		Gestures	Reference to physical/vocal choices via broadcast medium.	"I watched so much. Literally. Like watching Dora the Explorer [and] Blue's Clues and noting how they talked, how they pause, how they ask questions, and wait for, you know, a response and using that as a guide."
		Wait-time	Reference to role of preparing a script in preparation for or via the broadcast medium.	"I realized that writing the script, some of the things that I would say, I'm like, 'Oh, well, that's not important,' or 'that will take up too much time.' So it really, really helped me to be more intentional about what I was saying."
		Props	Reference to any technological affordance specific to the broadcast medium.	"I wasn't really able to envision what that might look like post-production and so, so more of what I might call traditional, you know, having all the prompts and materials in front of me writing things on the board, instead of having it pop up on the screen or whatever"
	Themes	**Sample Codes**	**Sample Definitions**	**Sample Quotes**
Research Question 2: How do literacy teachers perceive the value of innovating with new literacies, like broadcast pedagogy?	Address Instructional Equity	Rural Access Home Resources	Reference to their own innovation with broadcast pedagogy in relation to addressing barriers to instructional equity (e.g., internet).	"during the pandemic, in particular, where some students may not have connectivity or other challenges with missing out on some literacy instruction"
	Extend Sphere of Influence	Colleagues Families Caregivers Published Lessons	Reference to possible future use and prospective audiences for their innovation with broadcast pedagogy.	"from a service perspective, and also to kind of develop some materials as models, perhaps for teachers, either to embed in their instruction or to use as a model for remote instruction. So I thought that the project had a lot of potential to support teachers and kids"
	Revisit Professional Literacy Content Knowledge	Standards Stakeholder Expectations Science of Reading	Reference to their understandings of professional content knowledge in relation to their innovation with broadcast pedagogy.	"We wanted to focus on particular literacy content. So phonological awareness, phonics, vocabulary, fluency, comprehension, and kind of have a predictable sequence in each of our sets of lessons that would build from what we might consider more foundational skills or more constrained skills to unconstrained skills"

Findings

Our findings are organized in two sections. First, we respond to RQ1: What are the components of broadcast pedagogy? Then, we report three salient themes that emerged in

response to RQ2: How do teachers perceive the value of innovating with new literacies, like broadcast pedagogy?

A Framework for Broadcast Pedagogy (RQ1)

In this section, we define broadcast pedagogy as a type of asynchronous teaching, characterized by short-form, standards-aligned, video lessons. We are drawing on data that centers literacy teachers; however, there is utility for a broadcast pedagogy framework across content areas. Broadcast pedagogy utilizes the affordances of the broadcast medium (e.g., accessible anytime and anywhere, visual and aural enhancements, intentionality in scripting and set design) to amplify learners' understandings of key grade-level concepts despite the one-way user interface. There are four components that contribute to a framework for broadcast pedagogy: coordinating content, facilitating teacher presence, scripting teacher talk, and leveraging post-production affordances. Below we examine each of these components within the context of literacy teachers operating in a multi-organizational CoP.

Coordinating Content

Teachers grappled with moving from a classroom setting, with a defined and relatively stable group of learners, to enacting broadcast pedagogy with an unseeable audience. Teachers considered the likelihood that student viewers could be within any grade band and might see any arrangement of the video lessons, including just one. Traditional notions of scope and sequence, across days, weeks and months had to be reimagined to fit 10- to 12-minute lesson blocks.

Target Literacy Skill. Within each grade band lesson sequence, the teachers designed lessons to focus on a primary target literacy skill connected to one of the five pillars of reading (National Institute of Child Health and Human Development, 2000). Teachers could also opt to cover a secondary target literacy skill connected to a different reading pillar. The PreK-K and

grades 1-2 teachers sequenced their lessons to move from foundational to more complex literacy skills. Ms. Oldes, a grades 1-2 teacher, described her team's lesson sequencing process:

> As a team of three, we determined we wanted to focus on particular literacy content–so phonological awareness, phonics, vocabulary, fluency, comprehension. [We] kind of have a predictable sequence in each of our sets of lessons that would build from what we might consider more foundational skills or more constrained skills to unconstrained skills.

When innovating with broadcast pedagogy, it is important to isolate a tangible literacy skill and consider how learners might see the utility of that skill within their home. For example, Ms. Alaria's first PreK-K lesson focused on letter recognition and letter-sound correspondence with Pp /p/. Students kept track of their Pp-word learning through a circle map on which they recorded words that began with the letter Pp and drew a picture to illustrate each word. At the end of Ms. Alaria's lesson, she reminds students to "keep looking for the letter Pp. When you find new Pp words, add them to your circle map." In this way, she is prompting students to continue to practice the skill introduced in the lesson and connect it with the world around them. Bounding the lesson to small timeframes, to account for student attention spans, and locating skill practice within the home environment are unique features of broadcast pedagogy.

Standards Alignment. In addition to designing instruction around a target literacy skill, teachers aligned their lessons to the North Carolina curriculum standards, specifically the 2020/21 English Language Arts priority instructional content (NC DPI, 2020). Aligning lessons with the state's curriculum standards was necessary to meet the grade-level instructional needs of students. Additionally, the standards allowed teachers to draw on a familiar framework during lesson design. Teachers received multiple rounds of feedback on their lessons from literacy

instructional leaders at NC DPI directed toward clear and rigorous alignment with grade-level curriculum standards. Many teachers found this feedback on standards alignment to be key in creating high-quality, grade-level appropriate lessons. Ms. Roberts shared, “speaking and collaborating with NC DPI” helped her think more deeply about what students “really need to know from this standard” in order “to snapshot the bits of information they are going to be able to take with them.”

Key Concepts and Practices. In addition to target literacy skills and standards alignment, teachers focused their instructional design on key grade-level concepts and practices. The identification of these areas was primarily informed by teachers' breadth and depth of teaching experience. For example, Ms. Link designed her lessons to reflect “some of the things that my students struggle with in fourth and fifth grade.” Since the project was intended to amplify and reinforce face-to-face, blended, and/or remote literacy instruction, participating teachers intentionally designed lessons focusing on themes, topics, and competencies that are covered in PreK-5 public education in North Carolina. For some teachers, these concepts and practices constituted areas in which students typically needed extra support; for others, it was important to consider when the lessons would air in order for the concepts and practices to connect with what classroom teachers would typically be covering during a certain point in the school year. Since the episodes started airing in February, Ms. Link’s teams’ lessons focused on concepts and practices "that we would hit later in the school year…to help them for the next year.”

Text Interaction. Many teachers’ lessons center instruction through text. During the early planning stages of this project, the teachers and organizational partners agreed that an important feature of high-quality literacy instruction is students interacting with rich, diverse,

and engaging texts. However, incorporating published works with broadcast pedagogy necessitates copyright permissions. The organizational partners approached the incorporation of texts in the literacy lessons from multiple angles: (a) contact and work with a children's literature-focused publishing company, e.g., Scholastic Inc., to secure permissions for collections of early readers, (b) identify and reach out to community-relevant children's literature authors, e.g., local authors, to make introductions on the project's behalf to the publishing companies that hold the rights to their books, (c) incorporate canonical texts with Creative Commons licenses, and (d) utilize teacher-created texts, particularly for informational works. It is important to note that publishing companies may require a fee in order to grant permission to include text selections in broadcast and online video lessons.

Facilitating Teacher Presence

Participants came to the project with extensive professional experience and knowledge of how students learn to read, but very little experience producing instructional content for wide audiences. To address this gap, participants cast a wide net for exemplars and models. For instance, Ms. Link reflected that she had never equated her everyday work as a second-grade teacher to popular edutainment, but quickly found herself studying popular television characters: "I watched so much. Literally. Like watching *Dora the Explorer* [and] *Blue's Clues* and noting how they talked, how they pause, how they ask questions, and wait for, you know, a response and using that as a guide."

Learning to act and acting to increase learning became a component of broadcast pedagogy. Ms. Link noted that as a result, "a lot of teachers did really cool things like use capes and costumes and things," but that ultimately "the idea was to be a teacher, to just be ourselves." Here, Ms. Link describes a significant tension evident across all data: maintaining teacher

identity while implementing theatrical elements, such as costumes and exaggerated gestures commonly seen on television. While some teachers leaned heavily into story arcs (e.g., quests and mysteries) and kept costumes and props consistent across lessons, others described the dramatological possibilities as daunting and preferred to limit the extent of their acting to exaggerated facial expressions. Thus, broadcast pedagogy approximates traditional in-person teaching *and* edutainment programmatic features.

In edutainment programs, characters periodically break the fourth wall to converse directly with the viewer. In broadcast pedagogy, however, most communication is directed toward the audience with verbal and gestural prompts to generate audience response. In the words of Ms. Doyle, broadcast pedagogy must "get [students] to speak to the screen, and move around, maybe find something they can speak to during the lesson like a stuffed animal or something, just doing any- and everything to make it engaging."

In some lessons, the teachers created dialogue between themselves and a partner teacher, animated character, or stuffed animal. These differing dramatic devices bridge space and time between educator and student audience. A component of breaking the fourth wall with broadcast pedagogy is the teacher posing questions to the audience and then closing the communication loop by providing feedback after allowing time for audience response. Across all lessons, we saw teachers pose questions, offer a way for students to self-assess their responses, and then close the communication loop by offering a model answer. In this way, breaking the fourth wall in broadcast pedagogy serves the dual purpose of eliciting student responses and inviting student self-assessment based on teacher response models.

Scripting Teacher Talk

Early in CoP meetings, teachers wondered how to teach without the benefit of student feedback. Typically, teachers' instructional language evolves with each lesson iteration, in large part from student feedback—teachers get clearer, more precise, and drop phrases and metaphors. But in broadcast pedagogy, teachers engaged in language refinement work ahead of time, using feedback loops with peers and content experts to achieve clarity, coherence, and alignment with standards. Aligned with research on classroom discourse (Nystrand, 2006), teachers reported that they relied heavily on partner work, and often used patterns like recitation and Initiation, Response, Feedback (IRF) while teaching in person—none of these dialogic structures directly transfer to broadcast pedagogy.

In order to adjust to what Ms. Link called the inevitable "*Dora the Explorer* moment, where you feel like you're talking in an abyss," teachers scripted their lessons and used a teleprompter to keep pace. Though creating a script for a 10- to 12-minute lesson was a demanding process, requiring multiple rounds of feedback from CoP members, it was well worth the effort. Scripts allowed teachers to reach an economy and precision of instructional language prior to filming and to anticipate meaningful opportunities for gestures (e.g., squat down with short vowel sounds and stand tall for long vowel sounds). Ms. Roberts reflected that writing a script was "a little stressful" because she had not thought about teaching with that level of detail since her first year in the classroom, but that the practice helped her refine instructional language:

> [Scripting] let me really just sit back and think about what I wanted to say and what I wanted the students to know, versus just standing up in front of my class and teaching. I'm more comfortable with that. But I realized that writing the script, some of the things that I would say, I'm like, 'Oh, well, that's not

> important,' or 'that will take up too much time.' So, it really helped me to be more intentional about what I was saying.

Teachers reimagined classroom dialogue (e.g., "talk to learn") as being responsive to home materials and context. According to Ms. Link, broadcast pedagogy "made us think about how to engage children within this asynchronous kind of format, to be responsive to the materials and context that they might have at home." Scripting allowed participants to reconsider their own discourse in relation to viewers' resources. Ms. Doyle described how scripting helped her consider the luxury of a pause button, "For people that don't have internet, knowing that there's no pause button...the biggest thing was putting in think time for the kids." Through scripting, teachers were able to release expectations related to how and when feedback occurs between teachers and students and instead trust the learner and caregivers to engage post-instruction. As Ms. Roberts noted, hoping to emphasize the transfer of skills:

> I wanted them to continue practicing whatever I'd done in the lesson on their own. The idea was if I've just taught you how to find the main idea, now try doing that with a different text. Any text. So, making it transferable. So, it's not something that you can just do in that one specific lesson. It's something they can do in lots of different contexts.

Ms. Matthews concurred that reimagining literacy dialogue via home materials and "a trusted adult" is a central tenet of broadcast pedagogy. Scripting lessons allowed teachers to build in elements of metacognitive delay, common in many forms of asynchronous learning (O'Byrne & Pytash, 2015). Ms. Jackson emphasized that writing a script helped her reposition students as capable self-assessors, noting that the script provided "space for them [students] to kind of do their own thinking and writing to be able to justify their responses."

Leveraging Post-Production Affordances

Post-production technology—the process of cutting and splicing raw footage, adding sound effects or music, and/or overlaying visual cues or animation to that footage—distinguishes broadcast pedagogy in literacy from other forms of video-based asynchronous teaching. Though participants were familiar with television as a medium, they had never created televised content and were therefore entirely new to the post-production process. In order to make sense of the bells and whistles possible with broadcast pedagogy, they had to depend on media experts at PBS NC. While teachers had the benefit of working alongside professional media producers, they directed both the timing and nature of post-production.

Ms. Matthews explained that she and her CoP members were motivated to "think of what I would be attracted to as a kid looking at the screen." Similarly, Ms. Link described how working in collaboration with PBS NC media producers in the CoP helped her think beyond her long-held beliefs about teaching:

> I wanted students to be able to see different moving things and not just me standing in front of them talking. That's not the way I teach in a face-to-face setting or even in an online setting. I try to be more engaging. So based on that, I was really wanting to take advantage of those features.

Ms. Link knew that she wanted to use post-production to enhance the learning process, but she needed to lean on PBS NC producers to make suggestions:

> They said that we could use a green screen and that they could add things post-production. But I didn't really know what that meant. I know that it's not an area I have a great deal of background in…It was really nice to have that collaborative effort…they were able to provide everything I needed.

Initially, many participants found planning for post-production elusive. Ms. Doyle described her own difficulty moving beyond classroom artifacts:

> I wasn't really able to envision what that might look like post-production and so [my lessons were initially] more of what I might call traditional, you know, having all the prompts and materials in front of me writing things on the board, instead of having it pop up on the screen or whatever.

With valuable feedback from her CoP members, Ms. Doyle began to differentiate post-production affordances from traditional classroom artifacts, like anchor charts, and, importantly, began to think about how visual animations could enhance the reading process. Ms. Doyle and other teachers worked to make streamlined post-production design decisions, aligned with priority content and their knowledge of how children learn to read, including using color coded post-production visual animation to demonstrate phoneme segmentation and populating post-production graphic organizers with segmented phonemes as the teacher said them to help students understand word formation.

Teachers leveraged post-production affordances across their lessons to enhance retention, ensure engagement, organize lesson structure (e.g., an animated timer), and develop continuity. The novelty of the experience, and the ensuing vulnerability, pushed Ms. Link, and others, out of their pedagogical comfort zones. Simultaneously, they began to reconsider and reimagine their own classroom practices, paying specific attention to instructional language and pace, instructional materials, and methods of engaging with families.

Perceived Value of Innovating with New Literacies (RQ2)

In regard to the second research question, three themes emerged. Teachers perceived that innovating with new literacies allowed them to (a) address instructional equity, (b) extend their sphere of influence and (c) revisit their professional literacy content knowledge.

Theme 1: Address Instructional Equity

Across all data, teachers were eager to lean into the particular affordances of broadcasting in order to equitably deliver meaningful literacy content. The CoP created conditions in which teachers from a variety of geographic locations and lived experiences developed and revised lessons for students affected by the broadband gap. Within CoP meetings, teachers encouraged one another to consider what learners might and might not have access to. Ms. Oldes commented that discussions around this topic were important to the development of her lessons, "when we wrapped our minds around it, we wanted to think of what resources might they have at home. Will they have paper and pencil?" Through this dialogic process, teachers moved beyond a school/county-bound understanding of equity issues toward a state-level and intersectional analysis.

In CoP meetings and in interviews, teachers pointed out uneven distribution of resources among teachers, schools, students and their families. Over time they began to talk about confluent equity issues to the broadband gap that might impact students and families, like limited access to PreK, available resources at home, and the need for more bilingual educators. In her role as a state-wide literacy coach, Ms. Doyle observed, "Some [districts] are faring better than others [during remote learning], depending on different resources they have available to them…This project is something that could directly impact the people I work with every day."

Many participants spoke to students' intermittent or lack of access to broadband internet as a key motivator for their participation. Ms. Matthews, a literacy coach working across many

rural counties in North Carolina, described teachers' and students' lack of broadband internet access as "a very serious issue" and a motivator for her to become involved in this project. Prior to engaging in the project, several participants, including Ms. Matthews, had come to the understanding that they needed to "expand what I'm doing to reach students" and had begun using more readily available technologies (e.g., text messaging) to contact families affected by the broadband gap. As participants' critical reflections crystallized into meaningful instructional decisions, they also began to articulate an increased curiosity about family literacy practices (e.g., songs/music) and ways to honor these within classroom practice.

Theme 2: Extend Sphere of Influence

Teacher leadership via CoP. Teachers who joined this CoP were eager to serve as instructional leaders by engaging in broadcast pedagogy. Ms. Matthews explained that she was interested in "pushing herself" professionally and that she saw the multi-role CoP as providing dynamic and reciprocal leadership opportunities:

> I was fully looking for a way to push myself and get something going that could be a passion project…And something I'm really passionate about is developing curriculum, writing lessons, things like that. So, I thought this would be a great opportunity to do that while also being able to grow some skills and coaching.

As mentioned by Ms. Matthews, the CoP was designed to include additional leadership roles to extend teachers' spheres of influence. For instance, teachers were assigned to cohorts with lead teachers. As each cohort progressed in the lesson development and filming phase, they were encouraged to offer suggestions and feedback for the next cohort. Here, Ms. Matthews' articulates her experiences in that role:

> It was nice to be the guinea pig for their [the cohort's] benefit. Because they were able to hear the nitty gritty. But I just told them to relax. They [the producers] have your script up there and you're able to read off of it…So it was really nice for them [the cohort] to be able to have a person to calm their nerves, but also kind of support and think through…how they take lessons from what I did and apply those to their lessons.

Within this dialogic coaching process, teachers communicated their newly formed understandings of broadcast pedagogy and reading instruction. As a result, many participants reflected that one of the benefits of the CoP was a sense of professional connectivity and development of leadership capacities.

Teacher leadership via extended audience. Though the project was funded through the CARES Act and was designed to meet immediate needs of nearly 14% of the State's students without access to the internet (NCES, 2019), participants described teaching to an extended audience that included students, other teachers, and families/caregivers.

Initially, participants engaged in the planning process much as they would in a classroom setting: by thinking about student development and academic needs. Unlike a traditional classroom experience, however, participants had to contemplate how to teach an *invisible* student audience. Teaching asynchronously is one thing, but teaching without any kind of feedback from students seemed insurmountable to participants at first. They reflected that much of their classroom reading instruction was anchored in geographical context (e.g., selecting texts and themes that reflect shared surroundings) and in knowledge of individual students' interests and academic next steps. To navigate this paradigm shift, participants used CoP meetings to plan around children's developmental and academic needs. Ms. Jackson reflected, "I definitely relied on my previous teaching experience with those standards and thought through some

misconceptions that students typically have with those different standards or with that kind of lesson and used those to help guide me." As a CoP, they figuratively sculpted a student audience and leveraged their collective understanding of instructional standards and experiences responding to common student misconceptions.

In addition, participants also planned with other teachers in mind. Noting that the broadband gap has been hard on teachers and students alike, Ms. Oldes, a literacy coach, shared that she

> [was] thinking of this as educative for teachers trying to think through what are some resources to extend that similar type of instruction where teachers could learn more or take or kind of extend that work and put it into practice in their classroom or remote instruction.

Participants frequently referenced the shelf-life of their lessons, identifying the potential value for substitute and preservice teachers. Significantly, within this extended audience construct, some participants noted that they wanted to reach teachers who do not traditionally teach literacy. For example, a participant linked her reading lessons to natural sciences with the hope that science teachers would use it as a model for how to integrate literacy within their own teaching practice. Similarly, a participant who teaches kindergarten in a district with limited PreK classes designed her lessons to be a bridge for private preschool centers and kindergarten.

Participants also involved families in their conceptions of an extended audience. For instance, when describing who they thought might benefit from broadcast pedagogy, participants often used the pronoun 'they' to describe simultaneous benefits for students and caregivers: "[I] just really wanted to make sure that those different families that didn't have reliable internet were able to get everything they could get out of this 10-minute lesson." One other participant

mentioned sharing lessons with families of former students. Across data, families were thought of as instrumental links in maintaining teacher/student relationships despite distance. In teachers' enactment of broadcast pedagogy, families were explicitly addressed in the last few minutes of a lesson, when the teacher instructed the student to share and continue practicing with items and people in their home.

Theme 3: Revisit Professional Literacy Content Knowledge

Research suggests that teachers might cling to ineffective models of teaching reading based on their own personal reading histories (Olsen, 2015), access to instructional materials and other classroom-based contextual factors (Miller & Veatch, 2010), or their teacher training programs (Hikida et al., 2019). According to Bryan et al. (2018), teachers receive fragmented and sometimes conflicting information and directives about how best to teach reading. At the time of this study, the science of reading, a body of research that emphasizes five pillars of systematic reading instruction—phonemic awareness, phonics, fluency, vocabulary, and comprehension—was pervasive in national conversations and gaining significant implementation traction within the State. Participants grappled with evolving expectations of reading instruction and worked to align their broadcast instruction with the science of reading.

The CoP, which included stakeholders from multiple organizations with differing experiences and expertise, created conditions in which teachers could meaningfully examine their instructional practices and beliefs. For many teachers, the targeted feedback from content experts, in particular, helped them identify gaps or misunderstandings in their conceptualizations of how best to teach reading. Ms. Alaria, for instance, noted that state-level experts:

> really focused on the science of reading, which is still kind of a newish term and things that people are still researching about. And I'm still researching about. And so, kind of

> feeling behind the curve on that. They were able to really help me to understand the reason behind it and how we were breaking it down.

While state-level experts initiated this important point of inflection, our analysis suggests that all members of the CoP served as sounding boards and were invaluable supports for collegial growth in content knowledge. Time and time again, participants reflected that practicing lessons alongside their CoP members promoted quality literacy content and pedagogical knowledge. Social learning was instrumental in helping teachers position themselves as researchers, adaptors, and lifelong learners.

It became evident across CoP data that teacher participants did not necessarily agree on the best way to teach isolated reading skills in a short-form lesson. As is often the case with field-wide shifts, professional jargon became a sticking point of this transition. Participants grappled with suggestions from state-level experts related to language. Ms. Alaria commented, "at first I was frustrated a little with the change in terminology, but I understand it's a shifting tide." Though the back and forth on instructional language may have surfaced confusion and frustration for some practitioners, it also served as a fulcrum for professional learning. For example, state-level content experts suggested participants introduce the phrase *heart words* as a subset of irregularly spelled words within the broader category of high frequency words. This shift was far from cosmetic; it galvanized teachers to reconsider the underlying mental processes that emergent readers use to transfer high frequency words to memory. In this way, teachers' uptake of reading language and theory accelerated as a result of the dialogic conditions of the CoP. North Carolina's renewed focus on research-informed reading instruction, in tandem with the public nature of broadcast pedagogy, helped teachers extend their previously held beliefs about reading instruction.

Discussion and Implications

Today more than ever, teachers need to be able to pivot their instruction efficiently and meaningfully without losing sight of how students learn. In order to prepare educators for the flexibility that teaching requires, more and more educator preparation programs are implementing NLS and ICTs. Duke et al. (2018) argued "teachers should learn *about, through* and *with* technology-based media" (p. 384). This study underscores the importance of learning *about*, *through*, and *with* technology-based media experiences for practicing teachers alongside multi-organizational partners in a CoP. To support teachers as leaders and innovators, we define broadcast pedagogy and distill four components, contributing to a framework instructive for teachers who want to use new literacies to design alternative, asynchronous video lessons.

As researchers, we were motivated to document and learn as much as possible about how educators pivoted during the pandemic and leveraged various technologies to deliver equitable literacy instruction. There are several implications that arise through these data across theory, practice, and future research. This study aims to amplify the connection of research to practice and practice to research in broadcast pedagogy. The participants of this study—a cadre of highly qualified literacy educators—tried their hand at teaching in a novel manner through a familiar and popular technology. Like many other teacher leaders across the country, they were motivated to engage new methods of instruction by unprecedented, pandemic-related student needs. This study belongs to a particular time period (i.e., emergency remote learning), but the implications are not confined to it.

NLS scholars argue that social contexts have historically shaped and simultaneously shape the "function and form of literate practices" (Leu et al., 2017, p. 1). Theoretical implications of this study emerge from the novel context—an unprecedented pandemic—and

shared disruption of traditional notions of literacy and literacy instruction. Thus, the study has significant implications for how we utilize new literacies theories as a lens to understand the pedagogical innovation in support of equitable literacy instruction. Just as many NLS theorists have helped us rethink what counts as reading and writing, this study helps us rethink what counts as literacy instruction across different mediums. The study offers a guide for future multi-organizational CoP work that aims to extend the work of teachers. Research, focused on how and when broadcast pedagogy is used by other teachers and peer institutions, will provide further insight into processes of pedagogical innovation, as well as teachers' motivations to do so. Along those lines, efforts to empirically test the framework to determine how effective it is for literacy development will be instrumental in deepening the field's understanding of novel modes of teaching. Although this study is grounded in the work of literacy teachers, the multi-organizational CoP framework, in and of itself, has implications for those utilizing media platforms to engage young learners in vocational, community, and familial contexts.

Moreover, as highly-vetted, engaging, standards-aligned lessons, these resources can be leveraged by peer institutions preparing PreK-5 teachers, as well as for in-service educators pursuing new literacies grounded in professional learning. While the broadcast literacy lessons are reflective of this Study Site's teaching standards, they may have broader applications across the country. Several local affiliate PBS stations have requested permission to air these lessons or use this project as a model for future programming. In order to increase awareness of the project, these lessons could be shared via community and youth organizations to accelerate the project's impact on young learners, especially those without access to reliable internet or digital devices at home.

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Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Preparing Literacy Teachers for Integrating Technology

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Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Abstract

A survey of 199 literacy professors explored the supports and barriers related to three outcomes (1) types of technologies they prepared teachers to integrate, (2) methods they used to prepare teachers to integrate technology, and (3) digital literacy strategies they prepared teachers to use, using a mixed response model. Time, access to equipment and professional development, and literacy professors' interest and knowledge about integrating technology supported the types of technologies they taught and methods they used to prepare teachers. Time, access to technical support, and literacy professors' interest in integrating technology supported the digital literacy strategies they prepared teachers to use. Time was a barrier to both the methods that literacy professors used and digital literacy strategies they prepared teachers to use. Our findings underscore the importance of providing time for literacy professors to plan and practice technology integration to improve their teacher preparation practices.

Keywords: technology integration, literacy professors, survey, supports, barriers

Preparing Literacy Teachers for Integrating Technology

Recent international learning standards underscore the importance of technology integration in literacy instruction (International Literacy Association, 2019; International Society for Technology in Education, 2019). However, despite teachers across the globe (e.g., Indonesia, Iran, Japan, Jordan, and the U.S.) having technology skills, they often are unable to effectively integrate technology in their primary and secondary school instruction. These gaps are due to insufficient teacher preparation (Alelaimat, et al., 2020; Curcic, et al., 2015; Martin, 2018; Prasojo, et al., 2018; Taghizadeh & Yourdshahi, 2020; Voogt & McKenney, 2017). For example, Taghizadeh and Yourdshahi's (2020) study in Iran found that "most teachers did not have sufficient pedagogical and technological knowledge to use technology to teach the English language to young learners" (p.1). In particular, teachers' preparation in Botswana, Jordan, the Netherlands, and Turkey lack opportunities to *actually integrate technology in their lessons* (Alelaimat, et al., 2020; Batane & Ngwako, 2017; Dinçer, 2018; Farjon et al., 2019). For example, Dinçer (2018) found that teachers in Turkey "had not received any education about the use of technology *for teaching activities*" during their university coursework (p. 2710; our emphasis). Therefore, we need to understand why teachers are not getting this preparation. In particular, we need to know what supports or hinders professors' preparation of teachers to integrate technology in their literacy lessons.

However, while many studies focus on supports and barriers to professors' use of technology in higher education classes, across Estonia, Korea, Malaysia, and the U.S. (e.g., Arya et al., 2016; Cheok et al., 2016; Lee & Son, 2018; Luongo, 2018; Taimalu & Luik, 2019), few focus on supports and barriers related to professors' *preparation of teachers* to integrate technology in instruction (Adnan & Tondeur, 2018; Foulger et al., 2015; Voogt & McKenney,

2017). These few studies broadly explore the supports and barriers to professors' preparation of teachers to integrate technology in their classrooms, but do not connect specific supports or barriers (e.g., time, knowledge) to specific professors' practices (e.g., modeling, teaching digital writing, etc.). Further, Adnan and Tondeur's (2018) study of professors in Turkey argues that research still needs to examine the "strategies used by TTIs [teacher training institutes] in efforts to prepare future teachers to teach with technology" (p.9).

Our research addresses these gaps by investigating more fine-grained relations amongst supports, barriers, and professor practices. Specifically, we examine the supports and barriers that are related to literacy professors' (1) technologies that they prepare teachers to use, (2) methods that they use to prepare teachers, and (3) digital literacy strategies that they prepare teachers to teach K-12 children. These findings inform how to better support literacy professors to prepare K-12 teachers to integrate technology in their instruction.

Literature Review

Only a handful of studies explore how supports and barriers are related to professors' preparation of teachers to integrate technology in K-12 classrooms (Adnan & Tondeur, 2018; Foulger et al., 2015; Voogt & McKenney, 2017). Therefore, we review the broader body of research on the supports and barriers related to education professors and professors from other disciplines use of technology in their courses to inform our study.

Support for Professors' Integration of Technology in their Courses and Related Outcomes

Institutional support, access to technology, experience using technologies, and perceptions of the usefulness of technologies are important factors that support professors' use of technology in their courses. When institutions support technology integration in courses, technology use increases or improves (Nelson et al., 2019). For example, a survey of professors

across various content areas shows that when they receive support to integrate specific technologies (e.g., videos) their use of those technologies increases by 67% (Arya et al., 2016). Similarly, in other studies, when professors receive professional development on how to infuse technology effectively, educators improve their technology integration and also shift to using more effective methods for preparing preservice teachers to integrate technology in their K-12 instruction (Foulger et al., 2015). Further, professors report that when institutions create policies that include incentives (e.g., sustained financial support for integrating technology), they are more likely to integrate technology (Lee & Son, 2018). In addition to institutional support, colleagues and technical staff are the next most frequent sources of support for technology integration in courses (Chittur, 2018; Christ et al., 2017; Harbin, 2019; Lee & Son, 2018).

Additionally, availability of and access to technology resources is critical for educators' integration of technology in their teaching. More technology is used in courses when professors have greater access to equipment (Arya et al., 2016; Lee & Son, 2018).

Further, professors' experience using technology supports technology integration in their teaching. Studies show that professors and professors who have more experience using technology—i.e., experience integrating technology (Foulger et al., 2015), teaching online (Khin, 2021) using computers (Karsh, 2018), using Blackboard (Woods 2004), or using Web applications (Alsadoon, 2018)—are more likely to use technology in their courses than professors with less experience. Thus, "teachers' knowledge affects their decision about whether they use technology at all, and if they do then how they use technology to promote learning" (Taimalu & Luik, 2019, p. 108). Also, over time, educators move from viewing "technology integration as an isolated set of skill[s] revolving around technology, to technology integration as

an integral part of teaching content and pedagogical knowledge to [teacher] candidates" (Foulger et al., 2015, p.144).

Finally, when professors perceive that technology is useful (e.g., Web applications) they integrate it more frequently (Alsadoon, 2018). Likewise, professors are more likely to integrate technology when they think that this will yield to good teaching and improved learning outcomes (Cheok et al., 2016; Chittur, 2018, Taimalu & Luik, 2019).

Barriers for Professors' Integration of Technology in their Courses and Related Outcome

The main barriers to professors' use of technology in their teaching are poor university policies, lack of technology resources, lack of professors' technical skills and unavailability of technical support, lack of professor interest, and time constraints. One barrier is unclear university policies or models regarding technology integration in the classroom (Mercader, 2019; Tshabalala et al., 2014) that makes technology integration sporadic and inconsistent. Sometimes professors also feel that they do not have their administration's support to integrate certain technologies (Alfalah, 2018; Luongo, 2018). Related to this, professors sometimes do not feel that integrating technology adds value toward achieving tenure and promotion (Luongo, 2018).

Another barrier to professors' technology integration is a lack of technology resources at the university level (Cheok et al., 2016; Luongo, 2018; Marzilli et al., 2014). Specifically, not having enough computers and tablets on campus, or having outdated platforms and software, or not being able to use software due to security issues, or limited access to Internet all contribute to professors not employing technology in their courses (Cheok et al., 2016; Khin, 2021; Marzilli et al., 2014). In a survey of professors, only 35% report that their students have access to needed technology resources (Arya et al., 2016). Another survey conducted with business professors reports that not having enough computers is a "moderate" barrier to integrating technology

(Karsh, 2018, p. 11). Additionally, lack of high-quality technology-based instructional materials, such as video case studies, further acts as a barrier to technology integration (Arya et al., 2016). Many of these realities have to do with costs of technology being a barrier (Alfalah, 2018).

Further, even when some institutions have the resources, sometimes professors do not have the technical skills to integrate certain technologies (Alfalah, 2018; Cuhadar, 2018; Khin, 2021; Tondeur et al., 2019). This lack of technological competency is compounded by a lack of technical support by the university, which is also a barrier to professors' integration of technology in their courses (Cheok et al., 2016; Khin, 2021; Luongo, 2018; Karsh, 2018). In one study, over half of professors (52%) report that their university does not provide technical support, which makes it harder for them to use technology with their students (Arya et al., 2016). In another study, professors talk about the lack of communication and collaboration with technology experts as a barrier to their use of technology (Voogt & McKenney, 2017). A third study shows that professors want training and professional development to support their uses of technologies in their teaching (Luongo, 2018).

Another factor that acts as a barrier is professors' lack of interest or knowledge about integrating technology in their teaching (Alfalah, 2018; Adnan & Tondeur, 2018; Cheok, et al., 2016; Mercader, 2019; Mercader & Gairín, 2020). In a study of 527 university professors, 65% report that they had never received training about digital technologies and only 11% report having the highest level of digital skills (Mercader & Gairín, 2020). Likewise, professors report not knowing how to integrate specific technologies such as virtual reality into their discipline areas (Alfalah, 2018). Further, professors' concerns about their students' abilities to use technologies effectively also deters their use of technologies in their courses (Khin, 2021; Marzilli et al., 2014).

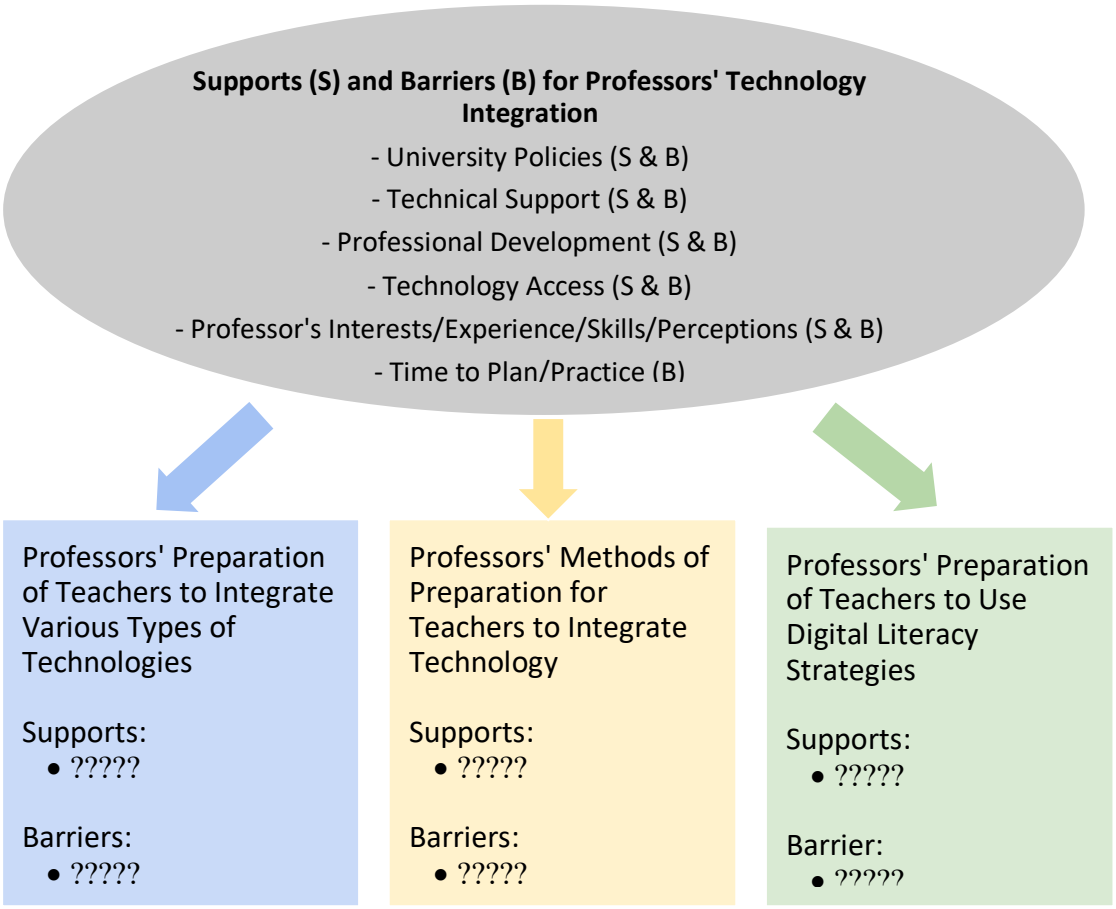
Finally, time constraints significantly impede professors' technology use in teaching (Alfalah, 2018; Cheok et al., 2016; Luongo, 2018; Mercader & Gairín, 2020; Karsh, 2018; Voogt & McKenney, 2017). Professors feel that they "don't have time to experiment with it [technology]", which is needed to incorporate technology in courses (Voogt & McKenney, 2017, p.77). Furthermore, professors believe that it is more time consuming and stressful to teach in an online environment because there is pressure to work more frequently, such as being available to respond to student queries immediately, which acts a barrier to their technology integration (Marzilli et al., 2014). These added responsibilities and lack of compensation or incentives pose additional barriers to professors' teaching online or integrating technology in their classrooms (Luongo, 2018; Mercader & Gairín, 2020).

Conceptual Framework and Research Questions

Our conceptual framework shows how the broader research on supports and barriers for professors' technology integration inform our investigation of the specific support and barriers for literacy professors' (a) preparation of teachers to integrate various types of technologies, (b) methods used to prepare teachers to integrate technology, and (c) preparation of teachers to use digital literacies strategies in literacy instruction (see Figure 1).

The following research question guides our study: *What supports and barriers do literacy professors report related to how they prepare preservice teachers to integrate technologies in their K-12 literacy instruction?*

Figure 1. Conceptual Framework


Supports (S) and Barriers (B) for Professors' Technology Integration
- University Policies (S & B)
- Technical Support (S & B)
- Professional Development (S & B)
- Technology Access (S & B)
- Professor's Interests/Experience/Skills/Perceptions (S & B)
- Time to Plan/Practice (B)
Professors' Preparation of Teachers to Integrate Various Types of Technologies
Supports:
• ?????
Barriers:
• ?????
Professors' Methods of Preparation for Teachers to Integrate Technology
Supports:
• ?????
Barriers:
• ?????
Professors' Preparation of Teachers to Use Digital Literacy Strategies
Supports:
• ?????
Barrier:
• ?????

Methods

Participants

Our study included 199 literacy professors who were between 24-74 years old (mean = 47). They had taught between 1-45 years, ten years on average. Demographic information about participants is provided in Table 1.

Data Source

We used the Technology Integration in Literacy Instruction Survey. Its online survey format allowed us to (a) circumvent social desirability bias issues associated with phone interviews, (b) avoid the high costs of mail surveys, and (c) allow for branching/skip question patterns that increase the appropriateness of questions that each participant was asked (Fowler, 2014).

The design of our survey questions was guided by previous research and questions from other related surveys (Arya et al., 2016; Adnan & Tondeur, 2018; Boche & Shoffner, 2017; Cheok et al., 2017; Foulger et al., 2013; Han et al., 2013; Husbye & Elsener, 2013; John, 2015; Marzilli et al., 2014; Mouza et al., 2014; Ottenbreit-Leftwich et al., 2015; Setiawan et al., 2018; Smith & Greene, 2013; Voogt & McKenney, 2017; Wetzel et al., 2014). In this paper, we focused on the survey questions about professors reported supports and barriers that served as predictor variables. Participants' responses to survey questions about (a) technologies that literacy professors prepare teachers to use, (b) teaching methods that literacy professors use to prepare teachers, and (c) digital literacy strategies that literacy professors prepare teachers to use in K-12 were used as outcome variables. Finally, participants' responses to survey questions about professor characteristics and institution characteristics were included in the analysis because we found these variables were significant predictors of outcomes in our previous

research (Christ et al., 2021). However, these variables were not a focus in this study. They were included to avoid omitted variable bias. See online Table A1 for sample survey questions (https://bit.ly/2V0BNA8)

Our design of the survey addressed several common survey errors (Fowler, 2014). (1) Participants were screened to ascertain their suitability to participate in the survey (i.e., being literacy professors). (2) To reduce the time needed to complete the survey, we attended to logical question flow and contingency by using skip logic. (3) To reduce answering errors, we used questions that (a) were closed, (b) were objective, (c) lacked *do not know* as an option, and (d) had ordinal responses that followed a clear continuum of options. The survey was piloted with a small group of professors, none of whom were part of the dataset. This helped to identify poorly worded questions and construct validity issues. Questions were revised based on the feedback, thereby improving the survey's reliability and validity (Fowler, 2014).

Data Collection

Qualtrics (http://www.qualtrics.com) was used to collect data via an online survey. Across five months, two methods were used to recruit respondents. We posted the survey link and invitation via (1) professional organization Facebook pages (American Educational Research Association Division K, International Literacy Association, and National Council of Teachers of English), and (2) the Literacy Research Association listserv. We reposted the survey information four times to increase the number of respondents (Fowler, 2014). The survey took about 10-15 minutes to complete. Data did not include any respondent identifiers.

Analysis

We modeled the outcomes with a *mixed response analysis* (Goldstein, 2011).

$$\mathbf{Outcomes}_{yi} = \beta_y + \beta_{yv}\mathbf{Institution}_{yi} + \beta_{yw}\mathbf{Barriers}_{yi} + \beta_{yx}\mathbf{Supports}_{yi} + \beta_{yz}\mathbf{Professor}_{yi} + e_{yi} \quad (1)$$

$$P(\mathbf{Outcomes}_{yi}) = F(\beta_y + \beta_{yv}\mathbf{Institution}_{yi} + \beta_{yw}\mathbf{Barriers}_{yi} + \beta_{yx}\mathbf{Supports}_{i} + \beta_{yz}\mathbf{Professor}_{yi}) + e_{yi} \quad (2)$$

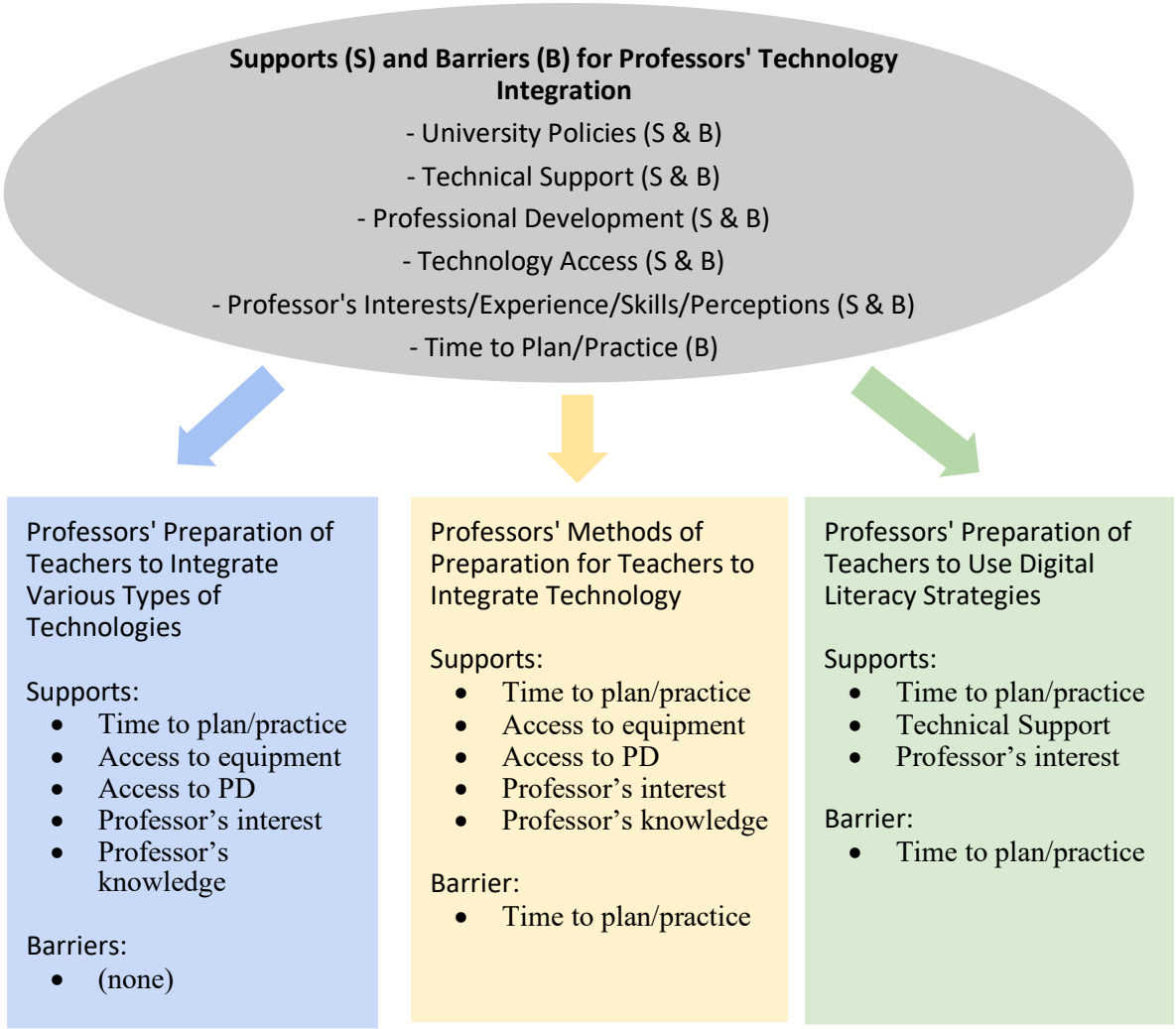
In the vector of $\mathbf{Outcomes}_{yi,}$ a continuous outcome *y* by professor *i* has a grand mean intercept β_{y0}, with *residual* e_{yi}. For discrete outcomes, the probability $P(\mathbf{Outcomes}_{yi})$ that the outcome *y* by professor *i* occurs is the expected value of $\mathbf{Outcomes}_{yi}$ via the Logit or Probit link function (F) of the overall mean β_y. First, we entered **Institution** attributes (urban, suburban [vs. rural]; public, private [vs. both]; undergraduate only … doctoral granting). Then, we entered **Barriers** to preparing teachers to use technology in K-12 settings (*lack of*: time, access to equipment, access to programs or apps, knowledge about technology integration, professional development, technical support, incentives for using technology, interest in integrating technology, and reliable internet connectivity). Next, we enter **Support** factors that professors reported helped them improve their technology use and preparation of teachers to use technology in K-12 settings (time to plan or practice integration, access to equipment, knowledge about technology integration, interest in integrating technology; availability of professional development, technical support, incentives for using technology). Then, we entered **Professor** characteristics (gender: female, male [vs. no response]; age; education level: doctorate vs. master's; years of teaching; academic rank: part time adjunct … distinguished professor; knowledge level about digital literacies: slightly knowledgeable … extremely knowledgeable; and comfort level using technology: somewhat uncomfortable … extremely comfortable**).**

Results

The main focus of this paper is on supports and barriers, so we only focus on presenting results for these variables (which are labeled in Tables 2-4; Figure 2) and any mediation effects from professor and institution characteristic variables. Statistically significant results related to professor and institution characteristics that do not mediate supports/barriers are discussed

elsewhere (Christ et al., 2021). To aid understanding of these results, we report the *odds ratio* of the regression coefficient, namely the percentage increase or decrease in the likelihood of the outcome (Kennedy, 2008).

Figure 2. Visual Overview of the Findings



Types of Technologies Literacy Professors Prepare Teachers to Integrate

Supports

Five supports enhanced the types of technologies that literacy professors prepared teachers to integrate in K-12 classrooms. First, time to plan or practice integration was linked to literacy professors being significantly more likely to instruct K-12 teachers to integrate the following technologies: basic software (21% more likely), app games (21%), website games (19%), websites with hyperlinks (20%), and apps that support reader processing or reader responses (32%). Second, literacy professors who had access to equipment were more likely to prepare teachers to use basic software (33%), websites without hyperlinks (24%), videos for children (27%), and interactive whiteboard (13%). Third, access to professional development made it 12% more likely that literacy professors taught teachers to integrate basic software in their K-12 instruction. Fourth, literacy professors who were interested in integrating technology were 27% and 16% more likely to prepare teachers to integrate interactive web-based books and interactive app books, respectively. Fifth, literacy professors who reported being knowledgeable about technology were 17% more likely to prepare teachers to use the internet with hyperlinks.

Mediation Effects

Literacy professors who reported having both time to plan or practice integration and were provided professional development to improve their technology use were 2% more likely to prepare teachers to use basic software in K-12 classrooms. Literacy professors at public institutions who had access to equipment were 17% more likely to prepare teachers to use websites with hyperlinks in their K-12 instruction.

Methods to Prepare Teachers to Integrate Technology

Supports

Five supports were related to the methods that literacy professors used to prepare teachers to integrate technology in K-12 classrooms. First, having time to plan or practice integration was related to literacy professors being 23%, 32%, and 19% more likely to model how to use devices, model technology use within a lesson to meet an objective, and provide feedback on teachers' literacy lesson plans or integration, respectively. Second, literacy professors' access to equipment was related to them being 18% more likely to have their teachers read about technology or its integration, 11% more likely that they model how to use devices, 30% more likely to guide teachers as they practice using a device, and 22% more likely to guide teachers as they practice integrating the technology in a lesson. Third, literacy professors' access to professional development was related to them being 19% more likely to model technology use within a lesson to meet an objective, and 11% more likely to provide feedback on teachers' lesson plans or integration. Fourth, literacy professors' knowledge about technology integration was related to them being 27% more likely to have their teachers read about technology or integration, and 55% more likely to tell teachers about it. Fifth, literacy professors who were interested in integrating technology were 16%, 20%, 39%, 37%, 32%, and 39% more likely to have teachers read about technology or integration, model how to use devices, model technology use within a lesson, guide teachers as they practice using a device, guide teachers as they practice integrating the technology in a lesson to meet an objective, and provide feedback on teachers' lesson plans or integration, respectively.

Barrier

There was one barrier to literacy professors' use of methods to prepare teachers to integrate technology in their K-12 instruction. Literacy professors without time to plan or practice integration were 34% more likely to tell teachers about available technology or

integration ideas (rather than using more effective methods, such as modeling, guiding, or providing feedback).

Mediation Effects

Literacy professors who were one-year older and had knowledge about technology integration were 52% more likely to tell teachers about available technology or integration. Literacy professors who had both (a) time to plan or practice integration and (b) an interest in technology integration were 8% more likely to model how to use devices, 35% more likely to model technology use within a lesson, and 27% provide feedback on teachers' lesson plans or integration.

Digital Literacy Strategies that Literacy Professors Prepare Teachers to Use

Supports

There were three supports for the digital literacy strategies that literacy professors used to prepare teachers. First, when literacy professors had time to plan and practice integration, this made it 20% more likely that they prepared teachers to teach children to search and evaluate online information. Likewise, having enough time also made it 16% more likely that literacy professors prepared teachers to teach children to use both of the following digital literacy strategies: multimodal composing and hypertext to navigate meaning-making. Second, when literacy professors had access to technical support, they were 11% more likely to prepare teachers to teach children to search and evaluate online information. Similarly, such access made literacy professors 21% more likely to prepare teachers to teach children to use hotspots to strategically support meaning-making. Third, when literacy professors had an interest in integrating technology, they were 30% and 22% more likely to prepare teachers to teach children to use multi-modal composing and hypertext to navigate meaning-making, respectively.

Barrier

One barrier was related to the digital literacy strategies that literacy professors prepared teachers to use in their instruction with K-12 children. When literacy professors lacked time, they were 30% less likely to instruct teachers to teach children to use online search and evaluation strategies.

Discussion

In this section, we discuss our findings in the context of existing research. First, we discuss the factors that made the greatest impact on literacy professors' preparation of teachers to integrate technology: time to plan and practice technology integration, literacy professors' interest in integrating technology, literacy professors' knowledge about technology integration, access to professional development, access to equipment, and access to technical support. Second, we discuss other factors that were not significant in our study, but had been found to be significant in previous research.

Time to Plan and Practice Technology Integration

Our findings extend previous research by showing that literacy professors' time to plan and practice technology integration is a support, and its absence is a barrier. Previous research across Malaysia, the Middle East, Palestine, and U.S., only presents time as a barrier to technology integration, not as a support (Alfalah, 2018; Cheok et al., 2016; Luongo, 2018; Karsh, 2018; Voogt & McKenney, 2017). Our research findings provide a more nuanced understanding about how time affects three aspects of literacy professors' practices related to preparing teachers to integrate technologies in their instruction. For example, time is a support for literacy professors' preparation of teachers to use specific types of technologies (e.g., app games, internet with hyperlinks, etc.) in their K-12 instruction. However, time is both a support

and a barrier to literacy professors' types of methods that they used to prepare teachers for technology integration. Time supports literacy professors' modeling how to use devices and technology in a lesson, and providing feedback on lesson plans or actual integration—all potentially effective methods. However, lack of time results in professors merely telling teachers about available technology or integration ideas. This is a generally less effective method than modeling or feedback (Moore & Bell, 2019). Likewise, for strategies, time is both a support (search and evaluate information online, multimodal composing, using hypertext to navigate meaning making) and a barrier (with less time, literacy professors are less likely to teach strategies to search and evaluate information online). This underscores the importance of providing literacy professors' time to prepare for technology integration to ensure use of high-quality teaching methods.

Literacy Professors' Interest in Integrating Technology

Our findings show that U.S. literacy professors' interest in integrating technology serves as a support for the types of technologies that they prepare teachers to use, the methods that they use to prepare them, and the strategies that they teach teachers. This slightly differs from previous research across Spain, the Middle East, Malaysia, and Turkey, which focused on professors' lack of interest as a barrier to their integrating technology in their instruction (Adnan & Tondeur, 2018; Alfalah, 2018; Cheok, et al., 2016; Mercader & Gairín, 2020). This difference in focus may be because some researchers explicitly asked participants about barriers, but not supports (Alfalah, 2018). Other researchers used interview questions and then identified themes using emergent coding and constant comparative analysis, which did not yield patterns related to professors' interest as a support, but only as a barrier (Adnan & Tondeur, 2018). Based on our results, finding ways to increase literacy professors' interest in technology is warranted. Future

research might explore opportunities such as learning communities, workshops, or informal conversations to discuss technology (e.g., coffee talks or brown bag lunch meetings) as ways to address this.

Literacy Professors' Knowledge about Technology Integration

Literacy professors' knowledge about technology integration supports their preparation of teachers to use one type of technology (internet with hyperlinks) and two methods to prepare teachers to integrate technology (having teachers read about or telling teachers about technology or integration). Our findings extend previous research across Myanmar, Palestine, and the U.S., which focused on professors' *experience* with technology (e.g., Foulger et al., 2015; Khin, 2021; Karsh, 2018), by identifying professor *knowledge* about technology as another kind of support. While professors' experience and knowledge might often grow along a shared trajectory, this might not always be the case. For example, some professors with little university teaching experience may be deeply knowledgeable about technology, while others with lots of university teaching experience may not be very knowledgeable about technology. An implication would be to provide ongoing professional development for professors to support their development of knowledge about technology across time, as they also increase their university teaching experience.

Access to Professional Development

According to our findings, when literacy professors have access to professional development related to technology integration, this serves as a support for the types of technologies that they prepare teachers to use and the methods that they use to prepare them. This finding aligns with previous research in the U.S., which also found that professors who received professional development improved their technology integration and used more

effective methods to prepare preservice teachers for technology integration in K-12 instruction (Foulger et al., 2015). Based on these findings, professional development should be offered to literacy professors to support the types of technologies that they prepare teachers to use and the methods that they use to prepare teachers. This implication aligns with other previous research in the U.S. that showed that professors sought professional development to improve their technology use in their teaching (Luongo, 2018).

Interestingly, however, literacy professors did not report that professional development supported their teaching of strategies (e.g., navigating hyperlinks, multimodal composing, etc.) for teachers' use in K-12 instruction. It may be that professional development is not being provided that is specific to digital literacy strategies. Future research could explore whether this is the case, and whether professional development focused on digital literacy strategies supports literacy professors' instruction of these to teachers.

Access to Equipment

When literacy professors had access to technology equipment, this supported their preparation of teachers to use specific types of technologies (basic software, internet without hyperlinks, videos for kids, and interactive whiteboards). It also supported their use of specific methods to prepare teachers (reading about technology, modeling how to use devices, guide teachers as they practice using a device, and guide teachers as they practice integrating technology in a lesson). This extends previous research in Korea and the U.S. that more broadly found that when professors have access to technology equipment, they use more technology in their courses (Arya et al., 2016; Lee & Son, 2018).

However, unlike previous research in Malaysia and the U.S. (Cheok et al., 2016; Marzilli et al., 2014), we did not find that lack of access to equipment was a barrier to literacy professors'

preparation of teachers to integrate technology. This may be because technology equipment is more readily accessible now and therefore no longer poses a significant barrier.

In sum, it seems that literacy professors will still integrate technology without access to equipment, but lack of access will limit their scope of integration. That is, they will be less likely to model and guide teachers to use a variety of technologies. An implication is that institutions should provide literacy professors access to equipment to broaden their scope of integration.

Access to Technical Support

Our findings extend previous research by identifying that access to technical support is related to literacy professors' preparation of teachers to use two strategies: (1) search/evaluate information online, and (2) use hotspots to support meaning-making in app books. Past research in Korea and the U.S. more broadly underscores the importance of technical support for professors' integration of technologies in their courses (Arya et al., 2016, Christ et al., 2017; Chittur, 2018; Harbin, 2019; Lee & Son, 2018). Given that previous studies in the U.S. show that there is a lack of technical support available to literacy professors (Arya et al., 2016; Voogt & McKenney, 2017), an implication of our finding is that institutions should provide better access to technical support if they want teachers to be better prepared to teach 21st century literacy strategies.

Other Factors

It is important to note that some other factors that significantly supported or hindered professors in previous studies across Korea, Malaysia, and the U.S. were not found to be significant in our study, such as access to programs or apps (Cheok et al., 2016; Marzilli et al., 2014), incentives for using technology (Lee & Son, 2018), or poor internet connectivity (Cheok et al., 2016; Marzilli et al., 2014). It may be that the impact of these has lessened over time,

given that these previous studies were conducted three to eleven years ago. Another possibility is that these factors are subsumed under other attributes in the current study. For example, literacy professors with more knowledge about technology integration might have greater access to programs, require fewer incentives to use technology, and have sufficient skills to overcome poor internet connectivity by using other resources (e.g., text messages). Further, differences in results might be related to technology advancements since those previous studies.

Implications

Universities who want to promote high quality teacher preparation for technology integration should focus on a 5-pronged approach. First, universities need to ensure that professors have access to a broad range of technology equipment so they can model a breadth of ways to integrate technology in K-12 settings, and allow teachers to practice these ways. Second, universities should find ways to increase professors' interest in technology integration. For example, methods such as tech talks, video-based models, and peer sharing of technology tools and their integration could be explored. Third, universities should offer professional development for professors to support their learning about technology tools and integration methods for K-12 instruction. This might include methods such as professional learning communities, workshops in which tools and integration are modeled and faculty's use of these is guided, Collaborative Peer Video Analysis, and use of rubrics to evaluate tool selection and integration methods. Fourth, universities should provide adequate time for professors to prepare for teaching teachers how to integrate technology in their courses. This could be in the form of course releases, reduced service load, paid summer planning workshops (in lieu of summer teaching), etc. Fifth, universities should provide access to high quality technical assistance, so

that as professors are integrating technology, they have in-the-moment support that allows them to overcome challenges to their integration.

Conclusion

Our study extended existing research by focusing on three aspects of literacy professors' teacher preparation: (1) what technologies they prepare teachers to use, (2) what methods they use to prepare teachers, and (3) what digital literacy strategies they prepare teachers to teach K-12 children. This study provided more nuanced findings about supports and barriers as they related to the three aspects of literacy professors' teacher preparation. Supports that were significantly related to the types of technologies that literacy professors prepared teachers to integrate and methods they used to prepare teachers included the following: (a) time to plan or practice integration, (b) access to equipment, (c) access to professional development, (d) literacy professors' interest in integrating technology, (e) literacy professors' knowledge about technology. Further, digital literacy strategies that literacy professors prepared teachers to use in K-12 instruction were supported by time to plan or practice integration, access to technical support, and literacy professors' interest in integrating technology. Finally, time to plan or practice integration was a barrier to both the methods that literacy professors used to prepare teachers and digital literacy strategies they prepared teachers to use. Our findings underscore the importance of providing time for literacy professors to plan and practice technology integration to improve their teacher preparation practices. Since our study only focused on survey data, future research might extend this to include interviews with literacy professors about how these supports and barriers affect their teacher preparation. This would extend our understanding of these findings.

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Table 1. *Participant Demographic Information (N=199)*

Demographic Variables	Number of Participants	Mean
Rank - Distinguished professor	1	0.005
Rank - Full professor	27	0.136
Rank - Associate professor	40	0.201
Rank - Assistant professor	89	0.447
Rank - Full time lecturer/instructor	15	0.075
Rank - Part time adjunct/lecturer/instructor	27	0.136
Highest degree – Doctorate	177	0.889
Highest degree - Master's	22	0.111
Gender – Female	177	0.889
Gender – Male	19	0.095
Gender - Prefer not to respond	3	0.015
Location – USA	191	0.960
Location – Europe	1	0.005
Location – Canada	3	0.015
Location – Australia	1	0.005
Location - Middle East	1	0.005
Location – Caribbean	2	0.010

Table 2. *Summary of Final Mixed Responses Model Predicting Types of Technologies Professors Prepare Teachers to Integrate*

Explanatory variable	Basic Software	App games for literacy development	Website	Apps hat support reader processing or reader responses	Internet with hyper-links	Internet without hyper-links	Interactive web book	Interactive app book	Not inter-active	Videos for kids	Inter-active white board
Urban (institution characteristic)											-0.697 *
											(0.291)
Public (institution characteristic)					-0.500				-0.760 **		
					(0.381)				(0.290)		
Doctoral granting - High research (institution characteristic)											
Time to plan/practice integration (support)	0.938 *	1.306 ***	0.873 **	1.426 ***	1.102 **						
	(0.376)	(0.294)	(0.307)	(0.310)	(0.334)						
Access to equipment (support)	1.417 ***				0.139	1.099 **				1.123 ***	0.859 *
	(0.332)				(0.497)	(0.368)				(0.288)	(0.361)
Professional development (support)	0.867 *										
	(0.349)										

Time to plan/practice integration * Professional development	-1.473 * (0.712)					
Public * Access to equipment (barrier)			1.590 * (0.756)			
Years of teaching (professor characteristic)		0.034 * (0.016)				
Associate professor (professor characteristic)		0.856 ** (0.308)				
Assistant professor (professor characteristic)				0.625 * (0.265)	-0.809 ** (0.234)	
Interest in integrating Technology (support)					1.181 *** (0.258)	0.671 * (0.288)
Knowledge about technology integration (support)			0.958 ** (0.357)	0.670 (0.363)		
Extremely knowledgeable in digital literacies (professor characteristic)		0.776 * (0.335)				
Very knowledgeable in digital literacies (professor characteristic)			1.229 ** (0.360)			

Moderately knowledgeable in digital literacies (professor characteristic)									-0.688 ** (0.237)				
Extremely comfortable using Technology (professor characteristic)			0.833 ** (0.263)	0.678 * (0.265)									
Explained variance	0.528	0.295	0.189	0.091	0.148	0.338	0.145	0.087	0.101	0.031	0.073	0.074	0.563

Note. Each regression model included a constant term.
*$p < .05$, **$p < .01$, ***$p < .001$

Table 3.

Summary of Final Mixed Responses Model of Methods Professors use to Prepare Teachers to Integrate Technology

Explanatory variable	Have teachers read about technology or its integration	Tell teachers about available technology or integration ideas	Model how to use devices	Model how to use technology within a lesson to meet an objective	Guide teachers as they practice using a device	Guide teachers as they practice integrating the technology in a lesson to meet an objective	Provide feedback on teachers' lesson plans or actual integration
Age (professor characteristic)		-0.029					
		(0.017)					
Lack of time (barrier)		-1.893 *					
		(0.791)					
Time to plan/practice integration (support)			1.915 ***	1.380 **			0.928 *
			(0.489)	(0.454)			(0.394)
Access to equipment (support)	1.030 **		1.177 *		1.304 ***	0.918 *	
	(0.361)		(0.495)		(0.372)	(0.360)	
Professional development (support)				1.398 **			0.882 *
				(0.431)			(0.351)
Knowledge about technology integration (support)	1.424 ***	2.761 ***					
	(0.381)	(0.406)					

Interest in integrating technology (support)	0.945 **		1.738 **	1.670 ***	1.593 ***	1.309 ***	1.729 ***
	(0.352)		(0.506)	(0.457)	(0.349)	(0.341)	(0.408)
Knowledge about technology integration * Age		-0.085 * (0.033)					
Time to plan/practice integration * Interest in integrating technology			-2.690 ** (0.950)	-2.004 * (0.889)			-1.501 * (0.761)
Extremely knowledgeable in digital literacies (professor characteristic)				1.490 * (0.694)			
Explained variance	0.311	0.458	0.525	0.537	0.279	0.188	0.375

Note. Each regression model included a constant term.

*$p < .05$, **$p < .01$, ***$p < .001$

Table 4.

Summary of Final Mixed Responses Model Predicting Strategies that Professors Prepare Teachers to Use

Explanatory variable	Use strategies search/ evaluate info online	Use hot spots to support meaning-making	Multi-modal composing	Use hypertext to navigate meaning-making
Doctoral granting - low research (institution characteristic)	-0.625 *			
	(0.260)			
Lack of time (barrier)	-1.338 **			
	(0.514)			
Time to plan/practice integration (support)	0.921 **		1.154 **	0.673 *
	(0.299)		(0.345)	(0.304)
Technical support (support)	0.816 **	1.354 ***		
	(0.283)	(0.325)		
Full professor (professor characteristic)			1.252 *	
			(0.543)	
Assistant professor (professor characteristic)				-0.594 *
				(0.262)
Interest in integrating technology (support)			1.774 ***	0.905 **
			(0.354)	(0.306)
Extremely knowledgeable in		0.936 **		

digital literacies (professor characteristic)		(0.351)		
Explained variance	0.230	0.152	0.366	0.111

Note. Each regression model included a constant term.

*$p < .05$, **$p < .01$, ***$p < .00$

Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Asking Dorian Gray for a Digital Civics Education

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Journal of Literacy and Technology
Volume 23, Number 2: Fall/Winter 2022
ISSN: 1535-0975

Abstract

Employing Victorian literary resources to teach digital literacy and digital civics, this paper identifies the philosophical and ideological concepts that can aid digital citizens in understanding their world. By developing historical perspectives and foundational understanding of the birth of digital technologies, alongside their traditional literary and historical curricular experiences, learners can develop an important set of literacy, linguistic, and critical analysis tools to serve as critical educational resources for digital civics and ethics. Oscar Wilde's *The Picture of Dorian Gray,* as employed by UNESCO City of Literature Dublin's literacy project, provides the example for this discussion: demonstrating how such literature maintains its relevance, and reminds us that the themes we address in our daily digital interactions are founded on the longstanding experience of the human condition.

Keywords: Digital Civics, Digital Literacy, Victorian Literature, Oscar Wilde, Philosophy of Information

This paper presents Victorian literature as a powerful educational resource for the teaching of digital civics, while simultaneously complementing its value for history and literacy development. Offering new insight into the the potential of historical and literary resources to support student development in the digital age, this work observes the pertinent lessons to digital age life that can be garnered from Victorian literature specifically, and advocates their subsequent usefulness to approach digital age civic and social issues in classroom learning through digital literacy and digital civics. Exploring this avenue of utility, this paper seeks to support teachers as they deploy educational materials in a digital age classroom, while still meeting their practical curricular obligations. While teachers are frequently challenged to integrate new digital life lessons into their classrooms, they are often left to do so in the absence of specific guidance as to how they might make their requisite classroom materials relevant to an unfolding set of digital age circumstances.

In other words, this paper asks, how can such differing periods as the digital and Victorian be made compatible for students studying literature, and what possible insights could Victorian literature and history have to offer them in pursuing digital civics, and digital age literacy skills?

In approaching this pedagogical query, this paper identifies opportunities to scaffold learner development through the observation of human experiences in the Victorian period, as sympathetic to the lives of digital age learners, to help them appreciate, not only the universality of the human condition, but also the ways in which their own digital experiences are in fact founded in concepts that date back significantly beyond their understanding of what constitutes the ‘digital age’. Indeed, many of the lessons and ideas of the digital age find their grounding in the scientific and technological breakthroughs of their Victorian forebears (McCormack, 2010).

By developing historical perspectives and foundational understanding of the birth of digital technologies, alongside their literary and historical explorations, learners can develop not only an important set of literacy, linguistic, and critical analysis tools, but also the knowledge, confidence, and empathy to solve digital age civic and social challenges, an important aim of digital civics (Clements, 2020; 2022). Thus, through the literary works of their Victorian counterparts, students can formulate awareness of their own digital age historical antecedents and develop approaches to the apparently novel challenges they face in the digital age, supported by the literary insights of long-cherished authors.

This paper will first discuss: (1) the nature of digital civics and its pedagogy, commenting of the early use of such literacy initiatives in the emergent formulation of digital civics education. Teaching students to set aside the pervasive narrative that the digital age is somehow set apart from previous history and literature, it then engages with philosophical concepts to highlight the continuity of the human experience throughout time.

Thusly, with a view to re-orienting the historical narrative about digital technologies and the digital environment, to accomplish reconciliation with historical antecedents, this paper then turns its attention to engagement with the Victorian period, and its connection to the underpinning philosophical concepts occurring in the digital age. Appreciating the Victorian era as pivotal to contextualising the digital environment, this work will then frame the problem of teaching in the digital age by considering; (2) the Victorian approaches to education still prevalent in formal education, and will consider the challenges this presents when preparing students for life in a digital age world. Observing an opportunity within this challenging situation, it will comment specifically on; (3) the potential of this era, and its literature, as a means of teaching digital age skills pertinent to digital civics and ethics. The provision of

pertinent and targeted insights from the Victorian period to formulate solutions precisely tailored to approaching challenges posed by the digital environment will be operationalised through an examplar using; (4) Oscar Wilde's *The Picture of Dorian Gray.* This will highlight: the book's salient plot points; author's own life; and book's reception (particularly with regard to the concept of shame). The potential to engage in higher order learning outcomes will also be suggested through discussion of the Aesthetic movement, of which Oscar Wilde was part. Through this exploration, it is suggested that Victorian literature can embolden healthy, confident, and innovative interaction with digital technologies; spur important ethical discourse on its societal impact; and infuse learners with a sense of their connectedness to the full resources of history and literature, unleashed through literary investigation and the development of literacy skills.

What is Digital Civics

Digital civics is: the study of the rights and responsibilities of citizens who inhabit the infosphere and access the world digitally. (Clements, 2017; 2020). This definition, in circulation for over a decade, and utilised as part of UNESCO Dublin's literacy education initiative in 2010 (See: Clements, 2020), includes a thorough conceptual underpinning for digital civics, grounded in the philosophy of information (hereafter PI) (Floridi, 2002), and incorporating philosophical, ethical, historical, and civic ideas (like the skills for good decision-making, the value of the rule of law, or the ontological continuity of the informational environment) that help to formulate critical perspectives about the digital age world, and the lives and interactions of all entities within it (Clements, 2020).

Germane to this paper, it should be observed that digital civics acknowledges that not only is

historical inquiry an important part of skills development for critical thinking and the humanities, it is also fundamental for appreciating the historical underpinnings which help us conceptualise our digital age world, an important factor in digital age problem solving (Clements, 2022). As an "awareness of the precursors that lay the foundations upon which we have built our ideas over time" is necessary to understanding digital civics and its pedagogy (Clements, 2020: 575) Indeed, the aforementioned 2010 UNESCO Dublin project utilised precisely this Victorian historical and literary approach through use of Oscar Wilde's novel Dorian Gray, to teach literacy, English, History, and digital civics, and the underpinning historical and literacy concepts that supported this successful early formulation will be discussed in this paper.

The increasing need to engage with new technologies and prepare students for life as citizens of a digitally mediated world has been a longstanding concern in educational quarters, particularly as part of English and Humanities subjects, where media literacy education has often taken place (Barnes et al., 2009). As early as the Grunwald Declaration of 1982, an international interest in the teaching of media literacy and its connection to active citizenship, can be observed. "The role of communication and media in the process of development should not be underestimated, nor the function of media as instruments for the citizen's active participation in society" (Grunwald Declaration, 1982). The longevity of this international interest is further made evident through the more recent Paris Declaration that makes clear the requirement of "continuous innovation in research and practice for media and information literacy" (Paris Declaration, 2014).

Drawing from these early influences, of literacy, media literacy, and information literacy, digital civics pedagogy has been able to adapt and formulate some useful tools for deployment in the digital age educational environment (Clements, 2017). But to be critically successful, such tools have needed to take into account the pillars (philosophical, ethical, historical, and civic

structures) that underpin digital civics (Clements, 2020). Failure to consider these aspects, can lead to failure to communicate vitally important information to students about their world and the impact of their behaviours in it, with serious consequences. For instance,

> "A digital civics education initiative that fails to appreciate an informational ontology may fall victim to a false notion of dualism (suggesting a separation between the on and offline worlds). If teachers cannot make clear to students that the online and offline spheres are part of the same over-arching environment, then we cannot be surprised when students undertake compromising actions in one arena and fail to appreciate they will impact the other. This emphasises the importance of helping teachers and educational administrators understand and employ PI in their work…" (Clements, 2020: 576)

There are numerous benefits to incorporating these digital civics pillars into practical education initiatives. As will be discussed, the ability to consider our digital age circumstances philosophically and historically (a process of contextualisation vital for literary exploration) allows us to formulate connections with our past; to draw out solutions to problems we may initially fear we lack the prior knowledge to face; and to understand and strengthen our sense of personal identity at a challenging time of social upheaval. Such benefits can have wide ranging impact on civic and social society, including the preservation of democratic aims and even the prevention of extremism. As anthropologist, Stephen Rea writes, "Clements' (2020, p. 571) vision of digital civics makes possible not only "democratic engagement in the digital realm" but also digital extremism's effective confrontation by educating students about the technological and institutional factors underpinning extremists' toolkits through practical exercises." (Rea, 2022: 17).

But, understanding the underpinning mechanisms of digital civics can also open new pedagogical opportunities in the classroom by helping teachers (and students) appreciate the

plethora of resources at their disposal with significant relevance to the digital age; even when those resources seem deeply removed from it. For instance, when we realise that many of our digital age challenges are the result of how we think about new discoveries and technologies (Floridi, 2007): about how our view of the world is altered by our interactions with technologies, and how our subsequent reactions are shaped by these changing beliefs and ideas, we begin to understand our digital age challenges as issues of philosophy, as opposed to issues of technology (Clements, 2020). We then recognise that we have experienced new technological development before, and that this has caused us to undergo similar philosophical challenges previously (Clements, 2022). We can then examine how those challenges changed and impacted humanity, and how humanity was able to meet them; by exploring the literature in which these human responses were codified and presented. Thus, when the pedagogical focus is placed onto the ideas, and not the technology, we are reminded that we can acquire useful lessons for the digital age from many sources, including texts written long before many of our present-day technological innovations were created.

Learners can reach out, both philosophically and historically, and formulate important tools that help them understand and access the depth of shared prior knowledge with the capacity to inform their everyday digital experiences, that is available to them from a rich variety of contexts and settings. Not only does this support their subject specific learning, but it also helps to negate any false narratives that they come into contact with about the isolation of their digital age world from the rest of history, "that as we face the challenges of digital age civic life, we are not devoid of help from our past" (Clements, 2022: 781).

Mastery of philosophical concepts like critical thinking when deployed in the context of technological skills, serve an invaluable role allaying personal destruction in our lives, or the

lives of others, by helping us prevent the: accidental posting of inappropriate content; careless surrender of our personal data; or by falling prey to targeted advertising or 'fake news' (For more see: Clements, 2022). Indeed, all of these issues are long-standing problems (Clements, 2022). Knowing how technology operates is a vital component of digital age life, but understanding how it impacts your life and the lives of those around you every day, is equally, a fundamental skillset. As Eshet-Alkalai (2004: 103) puts it, such critical literacies are a set of survival skills.

Acknowledging the importance of philosophical skills, in addition to technological skills, means educational approaches that help support digital civic learning can still be formulated, even in less-than-ideal instances where access to classroom technology might not be readily available. For instance, to help support the necessary blend of online and offline conjoined experiences in our classroom circumstances, we could make a conscientious effort refer to apps, memes, GIFs, online current events, or digital platforms during instruction to help students situate their personal digital experiences within the texts they are studying. That is, while we may not be able to address the full breadth of technological skills, we can at least facilitate appreciation of the philosophical elements requisite for understanding their digital age circumstances by drawing direct parallels between their online experiences, and the offline study they are undertaking in the classroom. Such actions should serve to reinforce our appreciation for the value of student's online experiences as part of their lives, and encourage them to reflect how their own life interactions may align with the literature (or other learning) they are undertaking in class. This may seem straightforward, or even 'common sense' in many of our educational practices, but can prove challenging when the material we are studying doesn't appear to have a great deal in common with the digital age.

To demonstrate how these concepts can practically function, I will later discuss a specific

example of how historic literature, expressly a piece from the Victorian era, might facilitate discussion and exploration of digital civics and digital ethics concepts in the context of the English classroom: Oscar Wilde's *The Picture of Dorian Gray*. Indeed, Wilde's story will be presented as highly suited to such a task. (A list of discussion questions to accompany this example, is appended.)

First however, it is helpful to reflect on the educational environment within which such explorations take place, and to consider the ideas pertinent to the Victorian era's spirit of technological innovation and adoption that we might draw upon to achieve the outcomes of successful digital civics pedagogy alongside the requirements of other curricular aims in the 21st century classroom.

A Victorian pedagogy in a Digital Age

The Media scholar Marshall McLuhan observed that "today's child is bewildered when he enters the 19th century environment that still characterises the educational establishment…" (McLuhan, 1967: 18). Unfortunately for students and teachers alike, little seems to have changed in this regard in the 50 years since McLuhan composed these words. As the more contemporary scholar Potter, notes, "The school curriculum in many countries… is designed around a 19th-century industrial-pedagogical model" (Potter, 2012:115). This consists of a hierarchical structure in which a teacher dictates to students, in a highly structured and generally isolated environment. That modern educational means fail to achieve the necessary preparation for life in the digital age is a point oft-argued (see, for instance: Murray [2015], Robinson [2010], Heppell [2005], Gatto [1992], and Little [2014]). This point seems further supported by research on ICTs and learning, conducted by the Programme for International Student Assessment (PISA), that noted "the real contributions ICT can make to teaching and learning have yet to be fully realised

and exploited" (OECD, 2015: 15). This study further observed the need "to provide educators with learning environments that support 21st-century pedagogies and provide children with the 21st-century skills they need to succeed in tomorrow's world." (OECD, 2015:15). Even the recent pandemic has apparently failed to solidify increased use of digital tools. Programs such as Zoom or Microsoft Teams may have proved a helpful patch during a time where in-person classrooms were impractical, but these have swiftly been swept aside, and a return to our traditional Victorian approaches seems to predominate.

When one considers the calls of the aforementioned Grunwald and Paris Declarations for media and information literacy skills, in the context of the digital age classroom concerns raised by the OECD, and our apparent unwillingness to sustainably progress toward the integration of digital tool in the classroom, it is clear that a strong vision is required to progress. But perhaps more importantly, we must consider the lived realities of educators working within a myriad of complex and challenging circumstances. In attempting to meet the future, we must offer practicable steps that can support teachers and learners in "real" ways, not merely suggestions of what "should" be. The realities of classroom life mean that opportunities to directly engage with technology can be restricted by legal concerns if something goes wrong; to social censure about the inclusion of such technologies; to fiscal restraints where school budgets are unable to extend to technology purchase. Often, the reality is that, as the media scholar, Henry Jenkins, put it in interview, "many of the best ways kids are learning are locked out of schools" (Jenkins, 2006: 00:21).

It might appear that the digital age classroom is more suited to the Victorian era in which it was developed than the digital age in which it is still employed. If this is the case, then we must find a way to turn this failing into an advantage. That is, if current pedagogical approaches

cannot leave behind the Victorian era, then perhaps the Victorian era can help us leave behind current pedagogical approaches? Focusing on the spirit of ingenuity and innovation for which the Victorian's prided themselves, particularly in regard to their drive for technological and scientific development, can infuse a sense of support for technological integration in a classroom. It also reminds teachers and learners that history is not about refusing to budge from the safety of the past, but rather, about studying our drive forward and how we can take lessons and learnings from those who have traversed these difficult challenges before us.

Employing the Victorian Age as a pedagogical approach has distinct advantages. For instance, it can help to ground student understanding of the digital age in the foundation where many of the ideas citizens hold about the modern world were formulated (McCormack, 2010). This provides an opportunity to reflect on how much value our past has to offer us when facing apparently novel issues, and an opportunity to challenge assumptions that we make about the digital age, and the ideas that it is predicated upon, at their source. And, as discussed, learning about their Victorian predecessors can empower students to formulate an understanding of the digital age as connected to the entirety of human experience and the universality of the human condition, thereby negating the isolation from history they may feel because of their technological circumstances (that is, the development of these new technologies). For digital civics then, the Victorian period is not only relevant, but highly useful to explore. The question then becomes how to present Victorian history and literature in ways that help digital age citizens appreciate its pertinence to their lives, serving the outcomes of both digital civics aims, and historical and literacy aims expected by existent curriculum.

Even when we appreciate an overlapping of philosophical ideas and experiences may be present, how can we help a student empathise with a Victorian character who has never seen a

meme, sent a text, or had to contend with the pressures of social media? How can we take a story set in a world so apparently different to our present one, and suggest that it is deeply relevant to our current circumstance of swift technological change and digital dilemmas? And perhaps most crucially, as we explore the human condition, how can we employ this literature to formulate healthy ideas about ethics and civics in a digital age?

We might begin by relating how surprisingly closely the experiences of the Victorians, who saw a massive leap forward in their own technological prowess, and who laid down many of the foundational ideas that still shape our social beliefs today (McCormack, 2010) resemble our own, by observing their similarities and direct correlations to our digital lives, particularly in regard to their scientific advancements.

Victorian Antecedents of the Digital Age

Integrating ideas about our Victorian antecedents, and their opportunities to address digital age challenges, can be explored in the classroom through two useful mechanisms: the thus far discussed concept, that we can view our digital age challenges as issues of philosophy, as opposed to technology, allowing us to draw from philosophical resources familiar with the types of challenges we face, rather than the novelty of the technology itself; and that our technological development, being predicated upon previous scientific discoveries and innovations, means that we can explore the chain of events preceding these developments to better understand them. This latter, is the direction to which we now turn our attention. First, by considering some of the broad historical antecedents we might keep in mind, and subsequently, by exploring these more specifically though a literary example.

In the case of the digital age, many of the developments necessary to formulate our digital technologies spring from the burst of technological prowess during the Industrial

Revolution, and the shaping of these new technologies into new mechanisms for everyday life during the Victorian period.

Indeed, the Victorian period lays down many of the ideas and precedential expectations about everyday life that we now consider our social 'norms' (McCormack, 2010), including; notions of celebrity culture (McCormack, 2010), the introduction of telephone networks (Bright, 2014), and even the impact of mass production on personal identity (Floridi, 2009: 11) (an idea encapsulated by the Aesthetic movement to which I will later return). Usefully, we can observe the societal adoption and impact of these early incarnations of technological breakthrough – including the exploration of ethical consequences from scientific discovery – through the literature of their time.

It should be noted that because digital technologies are predicated on a long history of scientific knowledge developed incrementally throughout human history, it is possible to identify useful precursors at any juncture. But it is the scientific breakthroughs that enable the future development of digital communications, during this period that make it particularly useful as a discussion point for media and information literacy skills in the English classroom.

It is worthwhile considering the timescale of such inventiveness. Three years after Alexander Graham Bell's success with the telephone in 1876, Muybridge presented the video, in 1879. Within this three years Edison had invented the phonograph and the light bulb. By 1895 the Kinetophone had been developed. Soon after, short films were becoming a part of Victorian public events. The claim that digital age technology is advancing more rapidly than ever before, diminishes by comparison to the Victorians, who within a period of a few years, went from letter writing to film viewing.

The challenges posed by discovering the potential immediacy of interaction offered by

new communications technology can also be viewed, within the Victorian experience. For instance, the opening of international phone lines, such as the Paris-London telephone exchange, allowed new forms of communication in which the immediacy of interaction, as well as future potentials, were apparent. As Charles Bright reflected of this 1891 telephony exchange, in 1898 "inventors and experimenters are constantly engaged in endeavouring to better these beginnings, and even hold out some hope of someday talking to America by telephone" (Bright, 2014: 208).

Certainly, there is little question that many of the thinkers and inventors working on these ideas were readily aware, and quite curious, about their eventual impact. The work of James Clerk Maxwell on Thermodynamics (necessary to wireless technologies) is described by his fellow physicist J.J. Thomson (1931:44) as:

> instrumental in providing the methods which may bring all inhabitants of the world within hearing distance of each other and has potentialities social, educational and political which we are only beginning to realize.

That we can see, from our 21st century vantage, how those laying the foundational infrastructure for our digital and social technologies were themselves, curious and excited about their potential results, and believed they would have the impact that they have achieved, can help us appreciate our own place in history, and our own future potentials: an important notion of legacy useful in explorations of the human condition.

But, the swiftness of this technological development also proved unsettling to the Victorian mind. Just as is the case today, the adoption of these new technologies led to significant social and ethical questions highlighting the same fears of technology moving too quickly for humanity to cope, with serious consequences. Science fiction writers, including H.G. Wells and Jules Verne, posed questions we are still exploring (and which might equally make useful studies in the English classroom). Though perhaps one of the most interesting examples come from the

American writer and politician, Ignatius Donnelly, who published *Atlantis: The Antediluvian World* (1882). A story that changed the moral of the widely circulated Platonic myth to place blame for civilizations' downfall on an inability to balance technology with ethics. This re-imagining persists in popular culture (from Disney films to conspiracy theories), usurping Plato's warnings in his original telling of the story of Atlantis, as a cautionary tale against the dangers of empire. The hysteria about new technology is also palpably visible in the printed media of the day, like newspapers and magazines where stories of 'railroad spine' abound: the railroad terrified many Victorians, who feared it would damage their brains (Torrey & Miller, 2007), or indeed, far worse.

There are also plenty of examples to remind us how the digital age has simply re-invented old challenges, such as the advance-fee scam: A confidence trick once known as the "Spanish prisoner" and discussed in the New York Times of 1898, describes exactly the same tactic now used in emails – requesting advance payment to a bank account now, on the promise of a substantial reward later, when the receiver comes into their fortune – more commonly referred to in the digital age as the "419 scam".

Even modern arguments about the way in which humans are changed in response to technology are also tempered, when one considers Michael Booth's suggestion that the new architecture and new forms of entertainment (such as spectacle theatre) meant that the Victorian audience used their eyes differently to their ancestors (Booth, 2015:4).

Developing resources based on these insights, and responding to the need for increased digital civics and ethics education in classroom learning, the "Dublin One City, One Book" project in 2010, undertaken as part of Dublin's UNESCO City of Literature office, harnessed such Victorian literature to develop strategies for digital civics and literacy education. The 2010

initiative was based the previous year's 2009 effort, that harnessed Victorian literature to teach literacy and history, (later circulated in a New York City Partners Best Practice Report [2012]). The digital potential for a similar project was made clear given the generation of content for social media distributed by participants online, and overlap of social discussions, between the Victorian and digital ages, precipitated in the wake of the 2009 event. The book adopted for the 2010 events, to meet the new digital civics challenges put forward, was Oscar Wilde's *The Picture of Dorian Gray* (1891a). The following materials, which discuss the specific opportunities within this piece of literature, are next explained, with a view to supporting teaching opportunities for digital civics and ethics education through literary study.

Dorian Gray

Already studied in many formal education curriculums, *The Picture of Dorian Gray* holds numerous (and seemingly obvious) parallels to digital age life, providing an opportunity to integrate these important areas for civic development into existing curricular means. Oscar Wilde's enduring popularity makes him a figure with which many people are familiar, and his links to modern popular, and celebrity culture are well documented. (Helpfully, the scholar Jerusha McCormack provides an accessible popular lecture, developed for the 2010 UNESCO Dublin project and available by podcast, on the subject, in addition to her academic work: a link is available in the references to McCormack, 2010). And despite Oscar's insistence in his preface to the work that it is neither moral nor immoral, and that he holds no "ethical sympathies" as an artist (Wilde, 1908: 6), perhaps he will forgive us a little, if, in exploring it as scholars, not artists, we can allow it to give rise to questions of an ethical nature. The following discussion is intended to raise such questions that might be useful to teaching digital civics concepts in concordance with English and historical classroom aims. It is, by no means an exhaustive study,

but provides starting points, by raising observations for further reflection, to open conversation on the matter. The particular relevance of *The Picture of Dorian Gray* for use in digital age education is perhaps best initially argued through an exploration of its major plot points, and we first turn to these for consideration.

Book Plot Points

The Picture of Dorian Gray (Wilde, 1891) tells the story of a man who keeps his true self locked in his home while an Avatar that looks nothing like him roams the world preying on young people. Circulating media (a yellow book) of a morally questionable nature, he also deletes criminally compromising physical evidence from existence. The full weight of his behaviour is eventually brought to bear, with significant consequences as it transpires that the world of his avatar and the world of his physical reality must inevitably meet. The relevance to digital age social quandaries seems immediately apparent in this description, but a closer look at the plot provides further opportunities to spur student discussion, reflection, and application to students' own lives.

Fully escaping physical reality, Dorian portrays to the world an avatar of self-representation depicting the best of his attributes while covertly managing short-comings away from public view (in his attic). He is able to manipulate his own appearance beyond the bounds of physical expectation, like a digital character (or perhaps, an Instagram star). He is also capable of using that ability to manipulate others, highlighting the potential of online users (particularly anonymous ones) to "do harm", or the potential vulnerability of social media followers to be led down a road of misinformation to their own self-detriment if they are more interested with outward appearances, than genuine fact.

The death of a young woman is one of the consequences of Dorian's shallow and

dismissive attitude. One is reminded of the consequences of people aspiring to live the life portrayed by their favourite influencers and personalities, without realising the very real consequences of fame (Smith, 2017), or that the personalities of celebrities are formulations of branding as opposed to individuals (Rindova, Pollack& Hayward, 2006).

The "yellow book" Dorian acquires (in the Victorian Era, books could be wrapped in yellow paper to warn of their immodest content [Ledger, 2007]) shows the extent to which humans are affected by the information with which they come into contact. The sources of media one consumes and how they might be valued are relevant lessons in the modern digital age classroom, just as readily as they are to the world of Dorian Gray: a sobering thought given the suggestion that some young people prefer opinionated journalism over objective news (Marchi, 2012).

This is further pertinent when one considers the censorship made possible through the exertion of social and legal pressures in the Victorian era, for instance, the censure made possible through the Obscene Publications Act of 1857, and the control exerted now by those who can manipulate distribution of digital content through their platforms, such as the curation of content through the Facebook algorithm (Bucher, 2017).

When Dorian later commits murder, he annihilates the evidence, dissolving the victim's body in chemicals. That a person can somehow be deleted by removing all physical evidence raises interesting questions about physicality and reality in the digital world. In our digital age, does something require physical evidence in order to be real? And how are the physical and digital elements of our lives potentially linked? (A question with significant value in exploring concepts of information in the digital age, See: Floridi, 2007.) And what can Dorian Grey teach us about the value of digital evidence, particularly when physical evidence may no longer exist?

For instance, a violently quashed protest can be witnessed on social media by millions, despite the disappearance or death of its protestors, and new technologies can allow the dissemination of material that can circumvent government blocking (Gregory, 2015). How have the uses of digital social media altered the ways in which oppressive governments were once able to quietly destroy physical evidence of wrong-doing? Or how might images be manipulated without our understanding what has actually taken place?

There are further ideas to consider too, such as the nature of our own behaviours, and the ways in which we may respond to our technology regarding them. Dorian tries to project his guilt onto the technology – his knife – that he uses to commit the murder of his friend. To find digital age relevance for this we have only to consider the many digital tools around us that we hold accountable for our daily foibles and failings: do we blame Facebook for losing time and focus on our work? Is it Twitter's fault that we chose to share something publicly that we should have kept private? Is YouTube to blame for the three hours we procrastinated? Indeed, the old (and gender insensitive) adage 'it is a poor workman who blames his tools' suggests that blaming technology outright is merely a strategy to cover ones' own shortcomings (Florman, 1981). This can promote discussions about personal responsibility, managing one's own behaviour, corporate moral and legal responsibilities, and the morality and nature of technologies.

Given the falseness of Dorian's own physical form, and the pre-occupation of the book with discerning the difference between what is real and what is illusion, notions of physicality are also raised for discussion. Students can continue to question the relationship between what is real and what is not, as they explore the difference between Dorian's real and projected personas. They can also note how Dorian's behaviours eventually cross this imaginary boundary, and that the consequences of his actions are not contained to his portrait in the attic- they spill out into the

sphere of his projected avatar's life, just as a students' interactions spill out across online and offline spheres and impact their lives (Floridi, 2007; Clements, 2020). It is important to consider the ways in which the online and offline worlds interact, and teachers should present this knowledge, that offers conjoined consequences for our actions in the online and offline realms, as a significant fact in the daily lives of students and citizens: the behaviours we demonstrate online can, and frequently do, impact our life offline, and the behaviours we demonstrate in the offline world may easily find themselves uploaded online (Clements, 2020: 576). Not only is this conjoining now recognised in law (Bachelet, 2019), but several high-profile incidents, painfully pertinent to the lives of students can be noted, and, should be treated with care: such as the case of Rehtaeh Parsons, the young Nova Scotian student who was cyber bullied after pictures of her allegedly being raped at a party she attended were posted online (Pepler & Milton, 2013). Her subsequent death spurred an international outcry and shed light on the prevalence of such issues, in which online and offline circumstances are inextricably conjoined. Students will almost certainly have their own experiences upon which they may choose to privately reflect.

The interrelated nature of consequences between the online and offline spheres of life is only enhanced by Dorian's decision to destroy the painting of himself which provides him with these seemingly magical properties. The paining, inevitably, survives while Dorian himself perishes. This presents ideas about personal conduct, consequences, the opportunities we have to change our course, and behavioural self-regulation (that is, managing one's own behaviours through a process of critical self- reflection and response [Baumeister Schmeichel & Vohs, 2007]).

Author's own life

The division of Oscar's own personality, like that of his character, Dorian Gray, provides

further parallels for consideration by the student. Oscar was at once the loving father to his children, a family man, and yet also characterised in the press as a 'sexual deviant' preying on 'rent boys' (minors, by today's standards) leaving his peers to ask who the real Wilde was, and if both people could exist simultaneously. A parallel with more modern beloved celebrities whose personal lives shocked fans, as revelations about them circulated virally on social media, such as Kevin Spacey, or Bill Cosby (whose identification as a family man on the popular sitcom 'The Cosby Show') can be seen here, and perhaps observed by the educator to help students appreciate just how publicly painful and spectacular Wilde's fall from fame really was. Just as occurs now, the Victorian's too, struggled to separate the artist from their work.

Wilde's romantic relationships with both the men and women in his life, at a time of sexual social censure raise further questions about the way a society deals with those whose behaviour challenges social 'norms', and the damaging role that rumour through socially connected groups can play in a person's life. Indeed, the media of the day printed gossip columns with equal fervour to today's tabloid press, and Wilde's name has become synonymous with identity politics (Ledger, 2007).

Wilde was also keen to establish and maintain control of his public identity and individuality. Pushing the boundaries of accepted social behaviour, he helped shape the modern world through: his notion of celebrity; media manipulation for fame; and his advocacy for the breaking down of shame and privacy barriers (McCormack, 2010). (His role as an aesthete is discussed later, below.)

Book's Reception

It has been argued that Wilde's time in prison was not the result of his breaking sodomy laws through dubious liaisons with numerous rent boys, or his affair with Sir Alfred Douglas (against

whose father his first trial was mounted) (Holland, 2010; or see: Clements, 2009 for accessible public interview). Rather, Wilde's prison term seems a direct consequence of the publication of *The Picture of Dorian Gray*, because the book revealed the hypocritical behaviour and concealment that went on in most "respectable" Victorian households (Holland, 2010). Oscar's crime was his shattering of the social contract that maintained a veil of respectability over the shameful transgressions enacted as commonplace in Victorian society: it was the public desire to conceal shame that led to the jailing of Wilde. The length of prison term he was given was expected to kill a man of his social delicacy. It destroyed him socially: he ended his days in penury, in exile, in France. Overturning the bounds of social acceptability, forcing people to examine the truth of their lives and actions, to face, contemplate, accept and cope with their shame is also an aspect of the interaction enabled by digital social networking. This is evidenced by many young people online, who openly admit their behaviour by posting pictures of their antics, illegal or otherwise, to Facebook. Ever present in online contexts, shame plays a complex and significant role witnessed in, fat-shaming, revenge porn, and negative reviewing, for instance. It "arises mainly after moral transgressions or incompetence, and gives rise to feelings of worthlessness, inferiority and damaged self-image" (Hooge et al., 2011: 940).

There is an educational opportunity to teach students how to recognise feelings of shame, and to approach them (instead of avoid them) to repair this damaged self-image and build resilience to shame's impact, particularly in digital contexts (Rooney 2015). An experiment by Hooge, Zeelenberg, and Breugelmans in 2011, revealed that "shame mainly motivates approach behaviour to restore the damaged self, but that this restore motive decreases when situational factors make it too risky or difficult to restore" (Hooge et al., 2011: 939). For instances when U.K. plus-sized model Iskra Lawrence was fat shamed on social media by users referring to her

as a ‘fat cow’ who ate ‘too many bags of crisps’, she employed a shame approach behaviour by posting photos and videos of herself with, and eating, bags of crisps. (Buzzfeed, 2016). Lawrence was able to regain control over how her image was being represented, and restore the damage caused by the shaming. By contrast, in the aforementioned case of Rehtaeh Parsons, who was also being shamed online, the sustained bullying she received made approach behaviours too much of a risk to undertake. Even after moving schools to escape bullying and social exclusion, she lacked the opportunity to restore the damage done to her image by the shame. This paints a valuable picture for students, who can learn the potential of exercising control over their emotional circumstances through employing approach behaviours to shame in online contexts, and, equally their limitations if citizens are not also able to demonstrate compassion for one another when approach behaviours may not be possible to undertake (Clements, 2022). Certainly, in Wilde’s case, the opportunities to enact approach behaviours and rehabilitate his image were slim. Even moving to another country was insufficient (just as Parson’s moves between schools were insufficient to protect her)- Wilde’s celebrity meant there was no anonymity and thus no escape: a point many digital age citizens can appreciate as their anonymity dissipates in the viral sharing environment of the online world. But Wilde was not entirely without support. Immediately on his release from prison, he met with a group of friends who had worked to defend and assist him, including More Adey and Ada Leverson (Ellman, 1988). And, Bram Stoker reportedly visited him in France (Rose, 2016: 393). The role of friendships and the support of friends who stand by us in overcoming shame and rebuilding our lives is critical to our survival, and as important to the digital age, as to Wilde’s.

The Aesthetes

A student, looking to master higher order learning outcomes might consider the roll of

Aestheticism in Victorian age society: a movement which believed in Art for the sake of Art alone. Possibly because, as Oscar Wilde put it "It is through Art, and through Art only, that we can realise our perfection" (Wilde, 1891b). This group, with which Wilde was affiliated, provides an excellent opportunity to introduce ideas from Luciano Floridi's philosophy of information: the very philosophy that conceptually underpins digital civics, and can provide students with important conceptual information about their world (Clements, 2020). Professor Floridi is an internationally renowned Oxford philosopher whose work informs significant avenues of digital age policy pertinent to digital age life (Clements, 2020). He convincingly argues that digital convergence and digital technologies have brought about a shift in the way we view ourselves, and consequently, the ways in which we behave and interact with one another (Floridi, 2007). As part of this change, Floridi, proposes the Industrial Revolution as the stage that "marked the passage from the nominalist world of unique objects to the Platonist world of types of objects, all perfectly reproducible as identical" (Floridi, 2009: 11). The impact of this mass production is chiefly what gives rise to the Victorian counter culture of the Aesthetes, who understood the challenges it posed to individuality (McCormack, 2010). As Floridi explains, in a dephysicalized world, people begin to feel that they are typified individuals; that they too are mass produced and anonymous among other mass produced and anonymous abstract entities: their very identity as a person is eroded (Floridi, 2009). We can begin to understand from this, the reasons that citizens sometimes feel their individuality is under threat, or the need to reach out and distinguish themselves in the online world through the personalisation of social media profiles (boyd, 2007: 10). This is the terrifying prospect that Oscar Wilde and the Aesthetes had feared and fought: the destruction of beauty and individuality borne out through the mass produced ugliness of the Industrial Revolution (McCormack, 2010). And perhaps the Aesthetes of Oscar's day would also

have reacted to this de-personalised world of 'types' and 'things' as people today do: engaging in self-branding in cyberspace through blogs, social networking sites, or any digital ecosystem that provides the opportunity to express our personality (Floridi, 2009: 11). And, this raises yet another problem for students to consider. If we are reliant on digital products to help us identify our own individuality (like Facebook or Twitter) where does that lead society in the years to come? (Clements, 2020: 580) How can we ensure that we do not lose the sense of beauty, art, individuality, and a sense of self that are critical to a healthy life and a healthy society? How can we protect ourselves from branding and advertising made specifically for us? There may be no ready answers, but the shared philosophical questions, of the digital age and the Aesthetes, provide fertile ground for students to explore their contemporary challenges through studying past literature, and a sense of solidarity with their historical counterparts whose own experiences may provide insightful perspective.

Conclusion

Only a few of the many potential insights that Wilde's Dorian Gray can provide digital age citizens are presented here as a means of spurring discussion for digital civics issues in the educational environment, alongside the curricular aspirations teachers must already approach. Yet, this one literary example hints at the wealth of insight that lies inside the pages of work composed by our Victorian progenitors. Understanding life in the digital age is not about understanding the technologies, but rather about understanding the very real philosophical changes – the changes in how we think and what we believe – that come about as a result of the technological progress in our world. The development of these critical skill sets can be aided through the exploration of philosophy, history, and literature. In this example, the foundational importance of the Victorian period, and the ethical issues its technological development prompt, in conjunction with the

relevance of Oscar Wilde's own life, and the pertinence of plot points in *The Picture of Dorian Gray,* all provide a useful support for raising and discussing such questions of digital age ethics and civics. Thus, Wilde's Dorian Gray maintains its relevance to our lives, and reminds us that the themes we address in our daily digital interactions are not novel or fleeting concepts with which we have no previous experience to contend, but rather are founded on a deeper and more longstanding experience of the human condition.

The Victorian period, sitting at the cusp of the digital world, and its literary offerings, provides a strong, and vitally important perspective to the digital age, and an excellent starting ground in which to formulate a sense of meaning-making about digital age life, and the digital environment, with which future citizens must contend. The Victorians fashioned the doors and infrastructure to this digital world, it seems fitting that they would hold the keys for understanding how to unlock them.

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Appendix

Useful Questions for discussion in teaching Wilde's Dorian Gray in the digital age:
How is Dorian a Figure we can relate to in the digital age?
How is Dorian's ability to keep his true self locked in an attic problematic, for those around him, and for himself?
What is the Yellow Book? Why is it significant?
What can the Yellow Book teach us about the positives AND negatives of free movement of information and censorship?
Can a person be deleted if we remove all physical evidence of their existence? What is real?
How has digital evidence changed the way in which civic discourse happens?
Dorian projects his guilt onto the technology he uses. What are some of the everyday ways that we project our guilt onto the technology we use?
Do corporations also have a responsibility to make sure that the technologies they create are safe and fair?
Are technologies in and of themselves good or bad?
Are the consequences of Dorian's actions confined to the painting in his attic? How might our interactions in our digital lives spill out into our offline lives?
What are some of the ways that the life of the author, Oscar Wilde has shaped our modern views of the world.
What sort of experiences did the Victorian's have that might parallel to our own digital age experiences with new technology?
How is shame a part of everyday Victorian life? How is it a part of everyday digital age life?
Who were the Aesthetes and what was their concern about mass production?
How do we identify ourselves as individuals online? What sorts of products do we use?
What are the risks if we use digital products to help us identify ourselves online, instead of building our own identity through self-reflection and critical thinking?
How can we protect ourselves from advertising that has been tailored specifically to us?