

# Making the Transition to Virtual Methods in the Literacy Classroom: Reframing Teacher Education Practices

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## Abstract

In response to the COVID 19 pandemic, universities and colleges closed abruptly and teacher educators had little time to move instruction from face-to-face classrooms to digital learning environments. This sudden shift created a myriad of obstacles as instructors worked to retain pedagogically sound and effective instruction through online instruction—while also preparing novice teachers how to teach online themselves. Adding another layer of complexity is prospective teachers' lack of knowledge and hesitation regarding technology tools, as well as how to meaningfully integrate the tools into their teaching. Facing these challenges, we as literacy teacher educators, drew upon effective methods of teacher education, literacy practices and digital literacy to rethink the way we design lessons and assignments for our literacy methods courses. The framework we created for restructuring the integration of technology into courses can be duplicated across disciplines and guide instructors to reconceptualize their use of tech tools to re-envision face-to-face and digital instruction to expand learning outcomes.

## Keywords

online learning, teacher education, technology integration, literacy methods

In March of 2020, amid the growing concerns about the spread of the coronavirus in the United States, the University of Washington was the first major university to cancel in-person classes and move all courses to online instruction (Kamenetz, 2020). Within two weeks universities and colleges across the country closed their campuses and shifted to fully virtual instruction. While attending to the safety and

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mental health of students, university faculty were also called upon to quickly adjust course syllabi to accommodate for the shift to digital learning.

Additionally, the closure of education buildings gravely impacted K-12 teaching and learning. Teachers who had not previously worked in online platforms nor had systems of digital communication already in place (e.g. Zoom, Google Classroom, Seesaw) were asked to deliver online instruction to children as young as five. This transition to virtual instruction through pre-recorded asynchronous or synchronous lessons only exacerbated instructional challenges already well-documented in traditional face-to-face environments (such as keeping students engaged or providing meaningful feedback).

As assistant professors in teacher education, we work primarily with first-generation students in two universities located in the Midwest. When instruction across the country abruptly shifted to virtual spaces, we quickly recognized the change in pedagogy needed for teachers to conduct effective digital instruction. No matter how long this pandemic drags on, it is inevitable that online instruction will only increase within K-12 educational offerings. We recognize that teachers are likely to provide fully virtual or “hybrid” instruction to meet the challenges associated with in-person learning. This trend only amplifies the existing challenges in preservice teacher (PST) preparation. While research has continually highlighted that beginning teachers are unprepared to teach with technology in traditional classroom settings, there is almost no attention to preparing teachers to teach in virtual environments (Koenig, 2020).

To address this gap in PST preparation, we sought to augment our fully online literacy methods courses to mirror the current teaching context and challenges in K-12 education. We also wanted to push our students to think beyond basic technology integration to develop lessons that meaningfully redefined instruction to increase learning outcomes. As members of Generation Z, today’s traditional college student is described as “technologically savvy” growing up in a highly sophisticated technological world (Singh, 2014). Yet, these students often possess few skills related to designing technology-enhanced lessons that follow best practices in teaching and learning (Nguyen & Bower, 2018). Furthermore, from our experience, we also knew that students’ lack of knowledge made them afraid to take risks and try new technologies and platforms when creating virtual instruction— which often resulted in lessons that utilized tech tools but were one-sided, static, or uninteresting. With these considerations in mind, we launched a self-study (Dinkelman, 2003) to intentionally carve a path forward to improve the quality of our current courses and potentially the future classrooms our students will one day lead.

## Perspectives

In our experience designing methods courses and working on curriculum committees, the role of technology is often the last lens applied to instructional design. So often we begin with the framework of teacher preparation practices and narrow the lens to our particular pedagogical content knowledge. The role of technology integration then becomes a subset of our planning, representing a means to support our larger aims. However, with the shift towards fully virtual and hybrid teaching contexts, we have found ourselves (along with most of our colleagues) attempting to facilitate the same instructional experiences in the digital classroom without accounting for how such experiences might be adapted or wholly reimagined within this new learning environment.

Recently, we began asking new questions. Should our learning outcomes shift in response to a shift in learning environment? We know that our students’ progress in the program and access to field

placements inherently shapes our expectations and the possibilities for instructional outcomes. We also know that the classroom environment shapes the facilitation of learning activities throughout the course (i.e., the classroom with immovable desks complicates collaborative work). As we consider these contextual factors, should we also be weighing the affordances and limitations of the virtual environment—not at the final stages of design but from the outset? This has led us to consider how teaching practices—as the core of our content—might themselves need to be adapted to be as applicable in the virtual space. For example, the interactive readaloud is a fundamental practice in the literacy classroom, but this practice looks very different and requires an added layer of instructional planning to successfully transfer to the virtual space. It is not as simple as merely doing the same thing in a new environment—the practice itself must be closely examined and reimaged in order for its impact to still be meaningful to student learning. As a result, our key assignments and course activities must also be reconceived to intentionally address the knowledge and skills students will need to enact these practices in a virtual space. In doing so, we also acknowledge the need to maintain an emphasis on traditional methods—so how do we balance both? Rather than seeing the added burden of preparing teachers with additional knowledge and practice for virtual instruction, how can we position these skills to reinforce each other and deepen PST understanding of the practice *as a whole*?

This has led us to reframe our approach to instructional design by repositioning digital literacies within the context of our teaching—to consider the constraints and possibilities of teaching through a virtual format but not yet with specific tools or programs. As much research argues, we still leave the selection and integration of tools into instructional design as a final step in our planning. And to a large part, we encourage our preservice teachers to research and evaluate technologies *on their own* in order to foster creative problem solving as they seek to match technologies to the purpose they have in mind. Our goal is to more intentionally address the digital context and how it shapes the learning experience from the beginning of our planning process rather than thinking of it as a mere afterthought. Figure 1 illustrates the layering of these lenses.

**Figure 1**

*Instructional Planning Framework*



### *Teacher Preparation Methods*

The widespread transition towards practice-based teacher education is illustrated both in how teachers are prepared and how teachers are deemed qualified. Inquiry-based methods draw on “possibilities, methods of reasoning, alternative conjectures, and supporting evidence and arguments” to better account for the complexity of teaching in unpredictable situations (Ball & Cohen, 1999, p. 16). In order for students to develop and refine these practices, research argues for a “continuum of opportunities” that might include video analysis, case study analysis, rehearsal simulation, and coaching (Brownell et al., 2019). This emphasis on inquiry as related to the work of reflective practitioners is especially characteristic of the shift in educational career trajectories towards growth mindsets and lifelong learning.

To consider what practice-based methods look like in a digital environment, we must consider digital literacies as a socially-situated set of skills PSTs need to develop as teachers and foster within their own students’ development. From this lens we push the focus from the “how” of technology integration to the “why,” emphasizing digital literacies as socially situated (Mirra, 2019) rather than as isolated technical skills to be mastered. Despite massive district investment in technology tools and infrastructure (Koba, 2015), researchers have continued to argue (now for decades) that K-12 teachers are ill-prepared to integrate technology into their instruction in ways that will meaningfully transform student learning (Amador et al., 2015; Fahser-Herro & Steinkuehler, 2009; Sutton, 2011). Yet, this all too familiar argument is based on the limitations of teacher knowledge and skills integrating technology in mostly traditional, face-to-face settings. The additional layer of teaching with technologies in a fully *virtual* environment further amplifies the lingering factors contributing to teacher resistance or fear: a low sense of self-efficacy for teaching with technology (Ertmer & Ottenbreit-Leftwich, 2010), limited opportunities to develop digital literacy skills (Abbitt, 2011; Han et al., 2013; Wang et al., 2004), and lack of time to develop either within the context of real-world teaching situations. By interrogating the purpose behind our teacher education methods, we can examine how traditional pedagogical practices require adaptation for online environments. Specifically, we must determine the content and practices that are prioritized within our field and the instructional purpose behind their use.

### *Literacy Education*

In our work as literacy education professors, we have begun by defining the core practices and knowledge embedded within our traditional face-to-face coursework. In this way, we hope to not only survive this temporary shift in how we prepare teachers but to identify longer-term adaptations that can improve our pedagogy beyond the crisis—to truly do a better job of preparing our teachers for the range of learning environments where their future work will likely take place. Foremost, we frame literacy education in our methods courses from a sociocultural perspective. Sociocultural theory stresses the role that social interactions have on learning and suggests that these interactions are influenced by cultural and historical ways of knowing and doing (Vygotsky, 1978; 1980). Likewise, the sociocultural model of reading comprehension suggests that making meaning from text is socially and culturally constructed, and that reading involves three components impacted by the sociocultural context: the reader, the text, and the activity of reading itself (Freebody & Luke, 1990; Whitmore et al., 2004). While this context is foundational to all literacy work, the online learning environment can pose additional challenges to designing socioculturally informed literacy instruction. How do you maintain a sociocultural view of

literacy when designing asynchronous literacy instruction for children? What design choices can you make to ensure that instruction remains responsive and meaningful rather than discrete, skill-based modules? These are essential questions we take up as we attempt to transition our own instruction to virtual spaces.

### **Self-Study of Teacher Education**

The focus of this paper emerges out of a tradition of self-study in teacher education which seeks to better understand the development of teacher educators and the implications for pedagogical practice through the lens of reflective inquiry. As such, this current study draws on research findings from a larger case study to closely examine a local problem of practice in order to contribute to the larger body of knowledge guiding pedagogical practice in teacher education (Loughran, 2007; Vanassche & Kelchtermans, 2015). Our goals align to multiple purposes for self-study as laid out by Berry (2004) including examining specific dimensions of practice to engage in critical reflection on the alignment of practice and beliefs. As this article describes research that is very much still in progress, we share the findings that have emerged from our earliest iterations of design to describe what we have learned by examining our practice, how we have made adjustments to practice based on that research, and what the initial outcomes have been. In this way, we explore the “continual interplay between research and practice” (Loughran, 2007, p. 15) as we chart developments that have played out during these early stages of the Covid pandemic. To this end, our iterative design process has included analyzing artifacts from our teacher education literacy courses that include assignment descriptions, pedagogical supports, and student projects to describe how instruction has demonstrated teacher candidate ability to apply pedagogical content knowledge in the virtual classroom context.

Using this framework to approach the redesign of our methods assignments has been a labor intensive process. During the initial and immediate transition to fully virtual instruction (during the Spring of 2020), we chose to focus on a few central activities foundational to our field, one of which we highlight here: leading interactive readalouds. With the insight and experience of implementing the first project iteration, we refined our designs for Fall 2020. In the following section, we share our process of shifting instructional methods and what we’ve learned from our first attempts at implementation.

#### *Leading Interactive Readalouds*

Interactive readalouds are a hallmark of literacy instruction that support a number of core dimensions of literacy development including vocabulary knowledge, fluency, comprehension, and decoding skills. As an inherently socialized activity, interactive readalouds allow the teacher to prompt students and engage discussion throughout the reading process. As the teacher reads a book or section of a book aloud to students, they strategically choose points to pause and discuss textual features in support of targeted literacy goals. While discussion questions and stopping points can be pre-planned, teachers also offer opportunities for students to pose questions, share alternative interpretations, and deepen comprehension of core concepts in the text. As a result, the interactive readaloud relies on authentic social interactions to foster literacy growth and reading engagement, presenting a hurdle for teachers as they plan synchronous and asynchronous digital instruction. Many teachers have moved towards video recording as a solution, opting to record themselves reading without any students physically present. But this solution undermines many of the features that characterize effective readalouds, including providing opportunities for discussion through which children deepen and co-construct meaning;

integration of inferential literacy skills that encourage children to use their funds of knowledge; and opportunities to extend and enhance children's language and critical thinking skills.

In order to transition this core practice of face-to-face learning into the digital classroom, we needed to capitalize on the features of interactive readalouds most likely to impact literacy growth. As always, we approach lesson design (and encourage our PSTs to do the same) by beginning with *purpose*. So our first step was to examine the instructional goal in our methods course assignment and to revise the assignment to more intentionally address this goal in our new classroom environment.

## Findings

### *Project Design: First Iteration*

The initial assignment asked PSTs to develop a readaloud teaching guide illustrating how to lead an interactive readaloud of a selected children's text (Figure 2). Then, our PSTs would model the practices featured in their guide by leading an interactive readaloud with a small group of peers as their audience. The purpose of this assignment was to provide practice planning and implementing the interactive readaloud in a social context (even though we weren't able to deliver the readalouds in actual K-12 classrooms). With consent from the teacher candidates, work samples (including the use of still-frame photos) are also provided to further illustrate the data that informed the (re)design process.

### Figure 2

*Sample from a preservice teacher's readaloud teaching guide*

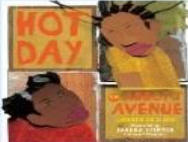
### HOT DAY ON ABBOTT AVENUE

Author: Karen English

Illustrator: Javaka Steptoe

Publication Date: 2004

This text begins on Abbott Avenue with Renee and Kishi. It is a hot summer day and these two best friends have decided to fight. They declare it a never being friends again day. The two girls have decided to not be friends because Kishi got the last ice pop and Renee got none.



Throughout the story, the neighbors try to get the girls to make up, declaring it's too hot to fight, but they refuse. Until, a group gets together at the park to play jump rope and enjoy time together. Kishi and Renee make up in the end and share an ice pop when there is only one left, becoming best friends again.

### THE TEACHING GUIDE PROCESS CONSISTS OF THESE 5 STEPS:

1

#### TEXT COMPLEXITY

Quantitative Features	Qualitative Features
<ul style="list-style-type: none"> <li>Word Frequency: Many words are used only once in the text and some may need prior knowledge to understand. This could cause struggles with decoding the text.</li> <li>Figurative Language: The text uses many forms of figurative language. Instruction on what this is and how to understand it will help immensely in comprehension.</li> </ul>	<ul style="list-style-type: none"> <li>Author's Style: The writing of this text is short and choppy sentences. These may be difficult for readers to use parsing correctly with.</li> <li>Visuals: The illustrations have a lot of close ups of characters faces and expressions. The relationship between the words and illustrations may be difficult to connect.</li> </ul>

*Featured book is Hot Day on Abbott Avenue by Karen English.*

### *Findings from Student Work: First Iteration*

While all PSTs were successful in recording, posting, and analyzing their videos, it became immediately clear that more support was needed to understand what an effective readaloud would ‘look like’ in a video recording. Many PSTs struggled to balance reading and recording, wondering when they should actually make the text viewable on camera. Most videos provided little to no interaction with the text (Figure 3), while others attempted to share the text as they would in a face-to-face classroom (Figure 4). However, neither of these options allowed the viewer to actually read along with the PST as very little of the text was accessible. This was a challenge we had not anticipated nor adequately prepared our preservice teachers to address.

#### **Figure 3**

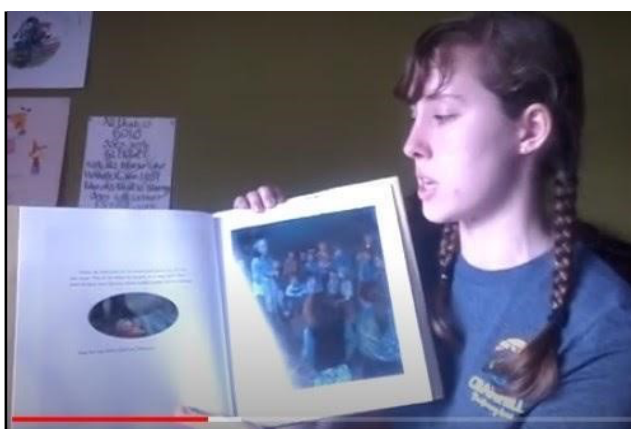
*Most readalouds did not allow access to the text during reading.*



*Featured book is Dave the Potter: Artist, Poet, Slave by Laban Carrick Hill.*

#### **Figure 4**

*Text was still inaccessible when shared on the video*



*Featured book is Luba: The Angel of Bergen-Belsen by Luba Trzyszyńska-Frederick and Ann Marshall.*

Although this observation could be addressed by more careful scaffolding of the recording process, a more serious limitation emerged across student videos. Many PSTs were unsure of how to integrate their interactive elements within the recorded reading. Should they describe to the audience



when they would stop? Or should they actually stop and ask questions as if students were present? For the most part, PSTs chose to do neither and simply read their books aloud. This approach, reminiscent of story-time readings, surged in popularity as actors, politicians, and community members recorded their own readings of books throughout the Covid crisis. While these recordings increase access to stories and foster reading enjoyment (especially during a time of limited social interaction), they do not integrate the dimensions of interactive readaloud that explicitly foster literacy growth. In one of the few PST videos that *did* employ interactive techniques (Figure 5), you can see where the PST has paused to revisit and discuss vocabulary terms. Throughout her video, she frequently paused to offer thinking prompts and response opportunities to students who would be watching this video at a later date.

**Figure 5**

*Pausing to support vocabulary knowledge during the interactive readaloud.*



*Featured book is Knock Knock: My Dad's Dream for Me by Daniel Beaty.*

These findings illustrate that while this traditionally face-to-face practice of interactive readaloud *can* be transitioned into a virtual context, careful planning and support is necessary to help teachers learn the nuances required by the format.

### *Project Design: Second Iteration*

The following semester we redesigned this assignment to more intentionally address the missed opportunities of our first iteration. To this end, we included discussion and analysis of ready-made readalouds circulating online (including previous PST samples) to better illustrate dimensions of the practice. Table 1 illustrates the findings of our own research into digital readalouds as a new instructional practice to build as part of our PSTs' repertoire. PSTs were then asked to view and critique a series of these *digital* readalouds -- readalouds that are conducted either synchronously using conferencing tools or asynchronously through prerecorded videos (Stoetzel & Shedrow, in press) -- with a series of scaffolded questions. Examples of the questions included:

- How did it feel when the reader spoke to you as an audience member?
- What is the purpose of this readaloud? What is your evidence?
- How did the readers' technical choices impact your experience?
- What interaction cues pushed you to think about this book in new ways?



PSTs were also provided with the Digital Readaloud Planning Checklist (Stoetzel & Shedrow, in press) that prompted them to consider how their purpose for the readaloud directly related to what portions of the book viewers needed to fully view. The planning checklist, excerpted in Table 2, was then submitted for instructor feedback before the PSTs filmed the readaloud.

**Table 1***Forms of Digital Readalouds*

Digital Readaloud Format	Description
Recorded Story-Time	Recorded reading of a picture book to promote reading for enjoyment through the performance of a 'story time.' Generally the focus of the video is on the reader holding the book, and the viewer may or may not be able to see the pictures or the text.
Shared Reading (may include digital adaptations to text)	In these purposeful readalouds the book is prominently featured in a close up frame. The intent of these readalouds is to build fluency, target decoding skills and comprehension and reading for enjoyment.
Readaloud with Opportunities for Synchronous Interaction	In these digital readalouds the reader engages with viewers by posing questions and adapting questions and discussion based on feedback received from the viewers. These readalouds also focus on reading for enjoyment with a focus on engagement, as well as vocabulary, comprehension or decoding skills.
Readaloud with Guidance for Synchronous Participation	Readalouds that offer guidance for participation often require the participation of a skilled reader to assist and deliver prompts to the child viewer. These interactions tend to focus on deepening comprehension and have the potential to foster active discussion between the child and individual facilitating the process.

**Table 2***Digital Readaloud Planning Checklist*

How will students see the text while you are reading? How will this impact the technologies you choose to use?
How are you modeling fluency and expression while reading?
How many opportunities will you build into the reading for students to respond (by thinking, writing, or speaking)?
Should you add any text or captions to the video to emphasize different points? Additionally, PSTs were required to create inferential prompts for their readaloud (as opposed to only surface level questions and text-to-self connections).

*Findings from Student Work: Second Iteration*

In this second iteration of the assignment PSTs generally demonstrated an understanding of the alignment between their purpose for the readaloud and how they would need to feature the book during the recording. Many indicated that their purpose for the readaloud was 'enjoyment of reading,' as well as 'understanding visual literacy.' As such, the PSTs used technology to enable viewers to have a full view

of the book. In these digital readalouds, PSTs often pointed to illustrations and posed questions such as, “Look at [character’s face]. What do you think they are feeling?” or “What do you think is happening in this picture?”

Although 10% of the PSTs elected to film only the book for their readaloud, the majority of PSTs many attempted to recreate an actual readaloud experience through video editing. For these readalouds, PSTs used alternating clips of themselves holding the book while talking or posing questions, and a full spread of the book (Figures 6 & 7). In this example the PST expanded her purpose of the readaloud and drew upon her book knowledge by pointing out the transition from red to blue endpages, explaining the use of different fonts to indicate new speakers, and discussing the role of a narrator.

### Figure 6

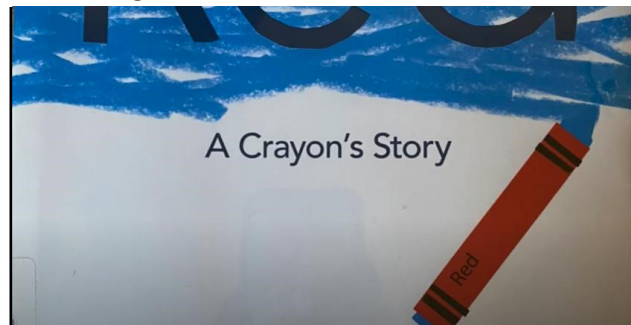
*Camera focused on preservice teacher when talking directly to the audience*



*Featured book is Red: A Crayon's Story by Michael Hall.*

### Figure 7

*Full View of the Book When Reading*

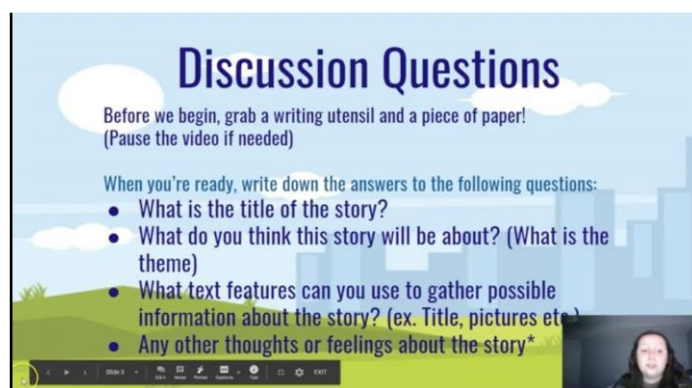


*Featured book is Red: A Crayon's Story by Michael Hall.*

PSTs also used screencasting software that enables users to capture images on their screen alongside a webcam recording of their face. In these examples, PSTs took pictures of the book pages or used a digital version of the text to record the book on their computer screen. In addition to the book pages, some teachers integrated content slides with interactive prompts to engage students. Figure 8 illustrates one example where you can see the screen recording of interactive prompts with the teacher’s face (captured by webcam) in the corner.

**Figure 8**

*Screen capture with webcam to facilitate interaction during the readaloud.*



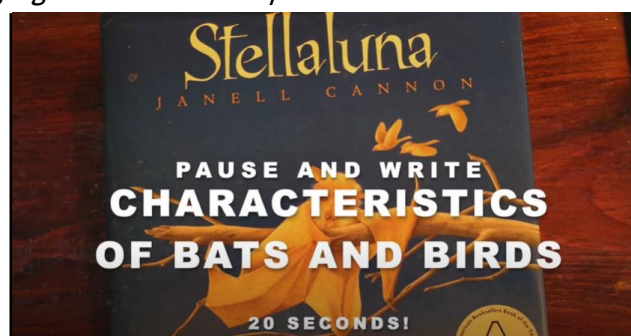
*Featured book is Somebody's New Pajamas by Isaac Jackson.*

In these examples, when preservice teachers featured just the book or cut between themselves and the book, they were able to achieve their purpose of the readaloud as well as to capitalize on the features of the text to create “teachable moments.”

Furthermore, a small number of PSTs exceeded the expectations of the project and produced videos that capitalized on technology to transform the readaloud experience. For example, in Figure 9 the preservice teacher focused the camera frame only on the book (slowly zooming in on important images) while incorporating text captions to highlight the interactive questions and music to enhance the mood of the book. This preservice teacher also used text captions to define tier three vocabulary during the actual reading of the book, adding sound effects (such as birds and crickets). These effects created a new layer of interaction that embraced the digital context and used it to achieve the purpose of the readaloud and to actively engage readers in the reading experience.

**Figure 9**

*Text captions used to highlight the interaction questions*



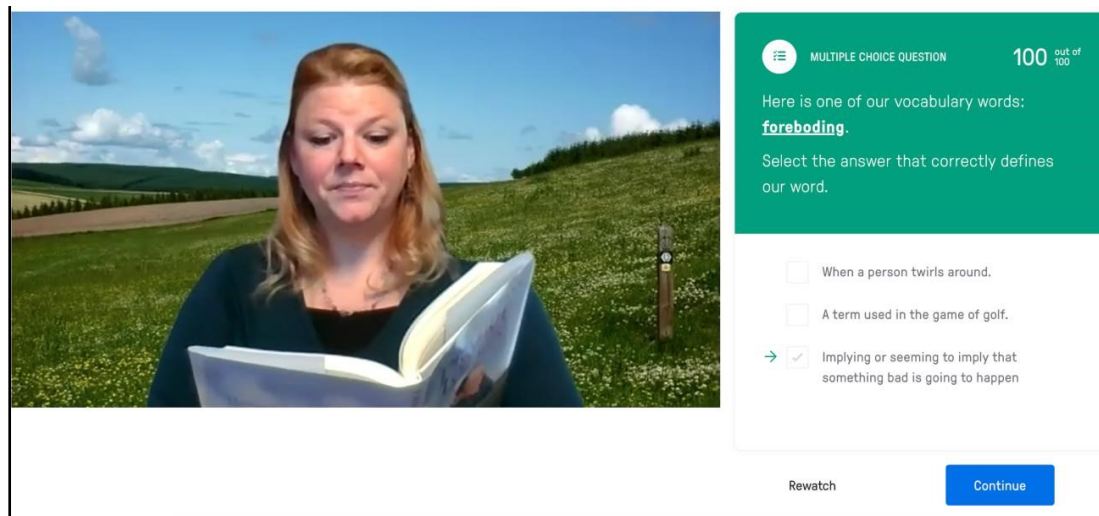
*Featured book is Stellaluna by Janell Cannon.*

Another example of using technology to transform the reading process was evidenced in this example of a middle school readaloud. While most digital readalouds featured picturebooks, reading chapterbooks poses different challenges to the reading experience. For example, interactive readalouds at the middle school level do not focus on visual literacies or decoding skills, rather shifting attention to more complex comprehension skills and use of vocabulary. In these cases, following along with the text

is less pertinent and common--even in face-to-face contexts. However, PSTs were still able to use technologies to design meaningful interactive experiences. In one example, a preservice teacher used EdPuzzle to integrate multiple choice and open-ended questions into her readaloud (Figure 10). As they watch, students are prompted to answer these questions at designated stopping points. Additionally, this teacher used a green screen background to make it appear as if she was reading in a prairie, the setting of her text. In these ways, she was able to foster engagement in innovative ways through intentional planning decisions.

**Figure 10**

*Conducting a readaloud with designated prompts for reflection*



*Featured book is Prairie Lotus by Linda Sue Park.*

On the other end of the spectrum, however, a small number of PSTs did not consider the audiences' vantage point when conducting their readaloud and attempted to hold the book for the viewer to see, just as in the first iteration of this project (Figure 11). In these videos PSTs rarely seemed to consider the distance between the book and camera (which determines how large or small the book is in the frame) nor the integration of meaningful prompts to achieve their purpose for the readaloud. Moreover, in these videos teachable moments were almost always lost because either (a) the preservice teacher only focused on making surface-level text-to-self connections, or (b) the pictures were too small for the viewer to truly understand (or see) what was happening. In these videos, even if the reader had great prosody and interaction cues, most of the engagement was lost because the audience did not have full access to the book.

Although these readalouds illustrated increased technological pedagogical content knowledge in comparison to projects produced during the first design iteration, they still neglected to capitalize on all of the content knowledge needed to conduct an intentional interactive readaloud. For example, no PSTs used technology tools to highlight text in their books as an opportunity to promote concepts of print, word structure, or vocabulary knowledge. These findings indicate that while PSTs' efficacy in design increased, they still lacked confidence in their ability to apply content knowledge. Rather, most chose to target reading skills that were most amenable to or easily accomplished within the virtual space (i.e., supporting visual literacy or asking comprehension questions). Yet, even when focusing on comprehension, most PSTs did not provide students with an explanation to inferential questions nor

attempt to make more meaningful connections across the text. These limitations pose new opportunities to address in the third iteration of project design as we look to the upcoming Spring 2021 semester.

### Figure 11

*No consideration for the size of the book in the camera frame*



*Featured book is The Kissing Hand by Audrey Penn and Ruth E. Harper.*

## Conclusion

By shifting our instructional design process to consider the context of digital literacies, we were able to achieve our content goals, model best practices in teacher education, and work to begin filling the gap in teacher preparedness of technology integration. Throughout the design process, we kept three questions at the forefront of our planning:

- What core literacy content do PSTs need to understand and apply? How does this content shift (if at all) in the virtual environment?
- How can we assess PST knowledge and application of pedagogical content knowledge in virtual learning environments *through our own* virtual environments?
- How can we revise our pedagogical methods to better align to the shifts our PSTs are experiencing at their field placements?

Revisiting these questions throughout our iterative design process has helped us to remain critical of our own pedagogy as a model for our students. This process can be replicated by applying standards, best practices, and research methods to assignments across content areas as we continually engage practitioner reflection to better understand the complexities of preparing teachers to teach in virtual *and* face-to-face settings through the constraints of our own online learning environments.

Covid 19 has forever reshaped teaching and learning. Our current preservice teachers will take the leap of launching teaching careers in the midst of turbulent and uncertain times, where meaningful technology integration may look far more sophisticated than navigating interactive whiteboards. Helping PSTs to evaluate and implement instruction in virtual environments while making clear connections to how similar technologies may also be applied in face-to-face classrooms is a form of boundary crossing we all must embrace. Teaching online has forced us to re-examine our teaching, perhaps for the first time in a while, to focus on the ways our methods must responsively adapt just as we expect our teacher candidates to do the same in their own classrooms. Our new perspective, one that streamlines the purpose of each class meeting, as well as the goals of courses, makes it easier for students to apply what they are learning and personalize it to their context. And we argue, by shifting our

approach to design and using evidence to continually reflect and refine, instructors may not only survive this pandemic but actually advance teaching, learning, and technology integration long after this pandemic ends.

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