Digital stories, material transformations: reflections of education students in a pre-teacher program

Christina Louise Romero-Ivanova
Department of Education, Indiana University Kokomo, Kokomo, Indiana, USA

Paul Cook
Indiana University Kokomo, Kokomo, Indiana, USA, and

Greta Faurote
Kokomo High School, Kokomo, Indiana, USA

Received 3 August 2020
Revised 12 November 2020
4 December 2020
Accepted 18 February 2021

Abstract

Purpose – This study centers on high school pre-teacher education students' reviews of their peers' digital stories. The purpose of this study is twofold: to bring digital storytelling to the forefront as a literacy practice within classrooms that seeks to privilege students' voices and experiences and also to encapsulate the authors' different experiences and perspectives as teachers. The authors sought to understand how pre-teacher education candidates analyzed, understood and made meaning from their classmates' digital stories using the seven elements of digital storytelling (Dreon *et al.*, 2011).

Design/methodology/approach – Using grounded theory (Charmaz, 2008) as a framework, the question of how do high school pre-teacher education program candidates reflectively peer review their classmates' digital stories is addressed and discussed through university and high school instructors' narrative reflections. Through peer reviews of their fellow classmates' digital stories, students were able to use the digital storytelling guide that included the seven elements of digital storytelling planning to critique and offer suggestions. The authors used the 2018–2019 and 2019–2020 cohorts' digital stories, digital storytelling guides and peer reviews to discover emerging categories and themes and then made sense of these through narrative analysis. This study looks at students' narratives through the contexts of peer reviews.

Findings – The seven elements of digital storytelling, as noted by Dreon *et al.* (2011, p. 5), which are point of view, dramatic question, emotional content, the gift of your voice, the power of the soundtrack, economy and pacing, were used as starting points for coding students' responses in their evaluations of their peers' digital stories. Situated on the premise of 21st century technologies as important promoters of differentiated ways of teaching and learning that are highly interactive (Greenhow *et al.*, 2009), digital stories and students' reflective practices of peer reviewing were the foundational aspects of this paper.

Research limitations/implications – The research the authors have done has been in regards to reviewing and analyzing students' peer reviews of their classmates' digital stories, so the authors did not conduct a research study empirical in nature. What the authors have done is to use students' artifacts (digital story, digital storytelling guides and reflections/peer reviews) to allow students' authentic voices and perspectives to emerge without their own perspectives marring these. The authors, as teachers, are simply the tools of analysis.

Practical implications – In reading this paper, teachers of different grade levels will be able to obtain ideas on using digital storytelling in their classrooms first. Second, teachers will be able to obtain hands-on tools for implementing digital storytelling. For example, the digital storytelling guide to which the authors refer (Figure 1) can be used in different subject areas to help students plan their stories. Teachers will also be able to glean knowledge on using students' peer reviews as a kind of authentic assessment.

English Teaching: Practice & Critique

1175-8708
DOI 10.1108/ETPC-07-2020-0066

Social implications – The authors hope in writing and presenting this paper is that teachers and instructors at different levels, K-12 through higher education, will consider digital storytelling as a pedagogical and learning practice to spark deeper conversations within the classroom that flow beyond margins and borders of instructional settings out into the community and beyond. The authors hope that others will use opportunities for storytelling, digital, verbal, traditional writing and other ways to spark conversations and privilege students' voices and lives.

Originality/value – As the authors speak of the original notion of using students' crucial events as story starters, this is different than prior research for digital storytelling that has focused on lesson units or subject area content. Also, because the authors have used crucial events, this is an entry point to students' lives and the creation of rapport within the classroom.

Keywords Crucial event narratives, Digital literacies, Digital storytelling, High school students, Pre-teacher education

Paper type Research paper

Introduction

Digital storytelling is a narrative method of active learning based upon a story a student wants to tell. The digital storytelling process involves thinking about a lived experience and creating a narrative, which offers students opportunities to delve critically into their own personal experiences through the use of digital tools such as PowerPoint, Google Slides, iMovie and other digital applications. Through these digital applications, students can bring their narratives to life with the uses of animation, images, sound and emotional context. As they view their classmates' digital stories, students can begin to empathize and critically evaluate what they are seeing and hearing. In this article, we preface the importance of digital storytelling and center the discussion on students' engagement through their abilities to peer one another's digital stories.

Background of digital storytelling

This section highlights the different experiences that brought together Author 1 (assistant professor of education, Tomorrow's Teachers lead faculty member at University Campus and collaborator on a new Freshman Learning Community [FLC] on digital storytelling), Author 2 (associate professor of English, director of writing at university and collaborator on a new FLC on digital storytelling) and Author 3 (science teacher at a high school, technology lead faculty member at a high school and dual credit program liaison teacher) in the teaching and learning of digital storytelling. What follows is each teacher's experience written from his or her individual perspective.

Author 1's story: Tomorrow's Teachers program and digital storytelling

In 2018, the School of Education Dean and Author 1 in the University School of Education, along with four partner high schools, created the program (and title) Tomorrow's Teachers as a "Grow Your Own" (Gist *et al.*, 2019) approach for addressing teacher shortages and to offer high school students dual-credit college coursework, P-12 school-based experiential learning and engagement in university campus activities and events through collaborative partnerships between school districts and the University School of Education. In year one, high school students enroll in two pre-teacher education courses: Examining Self as Teacher (fall semester) and Using Computers in Education (spring semester). In year two, students enroll in the last two pre-teacher education courses of the Tomorrow's Teachers program: Lifespan Development and Introduction to Exceptional Learners. Author 1, also a faculty instructor in the Tomorrow's Teachers program, teaches first-year program students face-to-face and through Zoom in the courses "Examining Self as Teacher" and "Using

Computers in Education." Both courses emphasize creating authentic lessons and assessments, as high school students begin to engage in early field experiences, assignments and activities that allow them to critically think about their future roles as teachers who are able to differentiate and individualize instruction.

Digital storytelling, which is a core literacy practice and project concentration in the course "Using Computers in Education," provides pre-teacher education students with opportunities to understand differentiation, individualized learning, teaching and learning in multiple modes of expression (including the use of multimodal frameworks), and how to cultivate a classroom culture of care. Through digital narration and digital portrayal of a crucial event from their lives, students can gain perspectives on others' lived experiences while learning to critically analyze writing and storytelling through peer feedback.

Process. Students first learn about the nature of digital storytelling, focusing specifically on what it is and what it can do within the context of the classroom, by understanding the seven elements of digital storytelling, which Author 1 addresses as she provides background of the digital storytelling process and includes the definition of digital storytelling. As a way of bridging this space, from the conceptual history of digital storytelling to its classroom application, students view digital stories that have been shared with Author 1 in courses from previous years. Students are asked to reflect on crucial events – those that have had a significant impact on their lives – and to choose one crucial event for which they will create a digital story. Then, using the seven elements of digital storytelling (Dreon *et al.*, 2011) that have been embedded in a digital storytelling planning guide (see below), students begin writing about the structural elements. These elements include the gift of your voice, accompanying soundtrack, point of view, the dramatic question, emotional content, story economy and pacing; as they write and reflect, students focus primarily on how each of these elements will emerge in their narrative. The digital story planning, in this way, allows for a methodical practice that is critical in nature, as students intentionally reflect on their experiences and begin to create stories that have significantly shifted their lives in some way. The digital storytelling planning guide was also used as a tool – a rubric, of sorts – for peer reviewers to connect the elements of digital storytelling from the planning guide to those that are emerging in the students' digital stories they are reviewing. This critical transaction, which we would characterize as dialogical in nature, allows for deeper meaning making between the author and the reviewer (Figure 1).

Author 2's story

When I first heard about digital storytelling from Author 1, my colleague in the School of Education at University, I was intrigued. I was familiar, of course, with the individual terms (i.e. *digital* and *storytelling*). But as a longtime writing teacher and director of our campus's first-year writing program, which includes both a first-year composition course (ENG-W 131) and a second-year writing in the disciplines course (ENG-W 221), I had not yet been exposed to this rich vein of pedagogical research, theory and classroom practice in any meaningful way.

Indeed, one of the first books that Author 1 shared with me was a slim, paperback textbook entitled *Make Me a Story: Teaching Writing through Digital Storytelling*, by Miller (2010). At barely 100 pages, this did not look anything like the behemoth, "kitchen sink" textbooks familiar to those of us who teach, coordinate and obsess about first-year writing courses. (For example, *Everyone's an Author*, which is the text we have been using in first-year writing at Indiana University Kokomo for years, clocks in at a hefty 600 pages in its most recent edition, a size not uncommon for first-year writing textbooks.) However, despite its lean appearance, after reading Miller's first chapter and her number one reason why teachers and literacy advocates at all levels should teach digital storytelling, my interest was fully piqued. She writes, "Digital storytelling engages and empowers reluctant readers

Category	Description	How my digital story demonstrates this
1. Purpose of Story	Establishes a purpose early on and maintains a clear focus throughout.	
2. Point of View	The point of view is well developed and contributes to the overall meaning of the story.	
3. Dramatic Question	A meaningful dramatic question is asked and answered within the context of the story.	
4. Choice of Content	Contents create a distinct atmosphere or tone that matches different parts of the story. The images may communicate symbolism and/or metaphors.	
5. Clarity of Voice	Voice quality is clear and consistently audible throughout the presentation.	
6. Pacing of Narrative	The pace (rhythm and voice punctuation) fits the story line and helps the audience really "get into" the story.	
7. Meaningful Audio Soundtrack	Music stirs a rich emotional response that matches the story line well. Images coordinated with the music.	
8. Quality of Images	Images create a distinct atmosphere or tone that matches different parts of the story. The images may communicate symbolism and/or metaphors.	
9. Economy of Story Detail	The story is told with exactly the right amount of detail throughout. It does not seem too short nor does it seem too long	
10. Grammar and Language Usage	Grammar and usage were correct (for the dialect chosen) and contributed to clarity, style and character development.	

Figure 1.
Digital storytelling planning guide

and writers and different types of learners. *It makes everyone want to write*" (6; emphasis added). I was hooked.

Writing teachers are always looking for a magic bullet that will get students excited about writing and composing, and – more importantly – sustain their writing, research and revision processes over the course of a semester and the many ups and downs of a meaningful research project. As I continued reading *Make Me a Story*, the borrowed text now dog-eared and highlighted with my own notes and revelations, I continued to see rich and, well, rather obvious connections to how digital storytelling pedagogies can be used effectively in a first-year writing classroom. As Miller (2010) notes in her list of reasons to use this approach, digital storytelling can be adapted to virtually any classroom or content that requires the invention and synthesis of ideas into a narrative form; in this respect, it resembles writing across the curriculum pedagogy in writing studies. Digital storytelling, like the teaching of writing, also foregrounds the process of composing – "the process is the point," as she puts it – and anything that gets students to think critically and reflect on their own composing processes is a great start in my book.

As a result, I was immediately and irresistibly drawn to the pedagogical potentials of digital storytelling. But I had yet to see it "in action." Around the same time, in the early spring of 2020, Author 1 was just beginning a research project using digital storytelling and

Google Chromebooks at a high school in an after-school program for at-risk students. She invited me to attend the after school meetings to get a sense of what this might look like in practice, and before the COVID-19 pandemic disrupted all of our lives and effectively ended our research involvement in the high school, I was able to witness the students' excitement firsthand. My future plans for digital storytelling involve incorporating this practice into the curriculum of ENG-W 131 in a project that invites students to connect a personal narrative about a significant life event to a larger social, cultural or political conversation. Author 1 and I are also planning a combined FLC for fall 2021. As this article goes to press, in the late fall of 2020, I am happy to report that the digital storytelling assignment I developed for my ENG-W 131 section, which ended up being a podcasting assignment in which students connect a personal narrative to a larger social, cultural or political conversation or issue, was a smashing success. The students in my first-year writing class completely surpassed my expectations for this assignment, and because I used it as the first major project of the course, I was able to foreground the research process in a way that seemed to them more non-threatening, open-ended and frankly, fun. Based on my own classroom practice and experience, I am now a confirmed believer in the power of digital storytelling to transform students' relationship to literacy, research and intellectual exploration writ large.

Author 3's story

As a teacher at high school who oversees student enrollment for the dual credit program, I initially became a member of this endeavor in the planning stages. My work as a sort of "teaching assistant" for Author 1 involves helping students adjust to the rigor of college coursework, as well as setting up their field experiences and classroom observations. When I was first introduced to digital storytelling, I thought of it as merely a slideshow presentation and was amazed to later learn of its deeper implications and possibilities for transformation and growth. Digital storytelling creates spaces for incredible student–teacher rapport and empathetic listening, at times even moving listeners to tears by the incredibly heartfelt stories that emerge in the course of digital storytelling. Digital storytelling also creates a bond between me and my students unlike any other pedagogy in my previous 20 years of teaching.

In the experience I have had in Author 1's class, I have learned that stories are deep and meaningful, and that the telling of stories can be remarkably therapeutic for students. Previously, each of the Tomorrow's Teachers students had been enrolled in my science classes; even though I thought I knew them well, this was nothing compared to how much closer we became after watching their digital stories.

In the following section, we turn our focus to the story of Zilia, a pseudonymous student who found the courage to share her digital story with a wider audience – an experience that would change her life forever. We present this brief anecdote as proof of the transformative power of digital storytelling both in and out of the classroom.

Zilia's story

Digital stories are amazing, and some of them are especially eye-opening. One such story was Zilia's. Zilia had been mostly raised by her grandmother, as her parents had been in and out of jail on drug trafficking charges for most of her short life. Zilia's digital story revealed how her mother's absence impacted her as a child. Because she was widely perceived by teachers and classmates as a "good student," Zilia was able to stay below the radar and escape the attention of teachers and school administrators. The effect was that teachers never knew how much Zilia struggled personally and in her home life.

Growing up, even though she felt fortunate to have a grandmother who cared for her, as Zilia explains in her digital story, Zilia shouldered the emotional burden of not being able to keep her mother free from drugs. She was finally able to open up about her experiences to Author 3 and her English teacher as she was in the process of developing her digital story, and these two teachers in turn nominated Zilia for a county-wide "Turn-Around Award." A celebratory awards breakfast was held for all of the nominated students from each of the five county schools, their families and other local dignitaries. Most of the students in their acceptance speeches thanked teachers and families, but Zilia testified to the many challenges in her life. She spoke about the importance for teachers to understand it is not always possible to be aware of students' home lives. Zilia, whom Author 3 had known for two years and who barely spoke in class – let alone reveal any of her life struggles – was now able to share her life story with more than a hundred strangers.

Everyone at the breakfast had been moved to tears by Zilia's story. The city mayor congratulated Zilia and commended her courage. From this speaking engagement, two school corporations asked her to speak to their teachers on the first day of school to explain her life and to emphasize how important it is for teachers to understand their students' struggles. Zilia was also approached by the local newspaper, which later printed her story centering on students' abilities to succeed against all odds.

Zilia's goals are to become an elementary teacher and then an administrator to help students who are going through difficult challenges just as she experienced. She has received multiple employment offers from school corporations inviting her to teach once she obtains her degree. Perhaps the most incredible part of Zilia's story is that her ability to tell others began with a digital story that allowed Zilia to share her experiences and blossom from being a very quiet, shy young woman to a future teacher and leader who is ready to take on the world.

How are we to account for this transformation? While it would be an overstatement to give all the credit to the power of digital stories, Zilia's account stands as an anecdotal affirmation of how the practice of literacy and sharing stories, whatever the modality, can lead to personal growth and awareness. In the next section, our review of the relevant literature, we examine both the theoretical and practical background of digital storytelling to suggest how this literacy practice can lead to just these kinds of transformations. As we hope to show, Zilia's experience with digital storytelling, while certainly notable, is not altogether unique; students from a variety of backgrounds can benefit mightily from sharing their crucial events and life experiences with a wider audience through the power of digital stories.

Literature review

Literacy

Literacy is the use of speaking, writing and other cultural practices to create meaning (Barton, 2001; Heath, 1983; Kern, 2000). Literacy is not merely a skill, but a dynamic process that moves across various communities, discourses and cultures. As Pahl and Rowsell (2010, p. 3) state, literacy "involves many different scripts, and it can exist in many different languages and settings." For Mendoza-Denton (2008), literacy involves more than language, as there is a "richness of practices" (p. 3) and these practices are intimately and inextricably tied to language. For the sake of this article and its implications for reflective digital narrative practices, we conceptualize literacy as artifactual (Pahl and Rowsell, 2010). For instance, Author 1 first asked students to think of important objects or artifacts from their lives – ones that had been connected to highly significant or crucial events from their lives. Each student was then asked to bring in their artifact to class. The artifacts became entry

points or bridges to their stories, as students were asked to think and write about their artifacts and the connections to crucial events in their lives. In these ways, the artifacts were also mediators of students' stories and in some instances, even found their way into students' digital stories as photographs. A common practice in first-year writing pedagogy is to use familiar artifacts as writing prompts to spur students' creative processes and get them writing about ordinary objects from new and different perspectives. This practice is no different.

The nature of digital storytelling and its uses of images, text, scripting, sound and other facets help to mediate symbolism and convey meanings. Literacy, which has also been construed as a *sociocultural practice* whereby the individual is able to interact with others in social spaces, is also an idea that we posit in this article (Bakhtin, 1981; García and Gaddes, 2012; Heath, 1983; Scribner, 1984; Vygotsky, 1997). Students' interactions as presenters, audience members and peer reviewers of their digital stories allowed for writing and expressing their digital stories, reading others' stories and then peer-reviewing peers' stories. In this process, students were able to convey challenging ideas like values, relationships and objects to each other. Also, it is from the fertile ground of these interactions and sharing of ideas that crucial events begin to emerge.

Digital practices

At its core, digital storytelling is a composing practice that combines the affordances of digital texts, such as images, music, video, voiceover, animated transitions and social media elements, with traditional narrative techniques to enable students to tell compelling stories. Because they are "born digital," so to speak, these stories can be shared effortlessly with audiences all over the world, and students' imaginations are fired by the possibilities for collaborative composing and learning that digital practices bring to the foreground of virtually any course or curriculum. Digital stories also engage students directly in the social nature of composing and meaning-making (Matthews-DeNatale, 2008). The act of composing digital stories prompts students to reflect on what they know and to examine their own assumptions and ideas about the world, an example of "metacognition," which are quite often part and parcel to the kinds of learning outcomes college instructors develop for their own classes, regardless of discipline or area of study.

Indeed, digital storytelling is a pedagogical practice that can be used to highlight the way that all disciplines tell stories about themselves and their objects of analysis. Bryan Alexander (2020), higher education futurist and curator of the Modern Language Association's "Storytelling" entry for the organization's *Digital Pedagogy in the Humanities* project, emphasizes the interdisciplinary core at the center of storytelling:

> Analyzing narratives is, after all, a core function of literary criticism. Interpreting historical narratives is also a major aspect of historiography. We can track stories across most of the other humanities fields, since anthropology, music, communication, classical studies, archaeology, ethnography, philosophy, and performance studies all select, represent, examine, and respond to stories through their respective methodological lenses. (Para. 1)

Digital storytelling provides students with an introduction to one of humanity's oldest forms of cultural communication: the making, sharing and re-making (or re-mixing) of stories, while at the same time emphasizing the way that stories persist across all domains of human knowledge and experience. Digital storytelling can profitably be used in the first-year writing classroom as a way to introduce students to the research process – that is, not as a paint-by-numbers approach to gathering sources and synthesizing information, but as a

way of allowing the stories of others to influence and shape the story that the student herself wants to tell.

Brief history of digital storytelling

Starting in the early 1990s, as the practical value of computers for teaching and learning gradually came into focus, enterprising teachers and researchers began exploring both the pedagogical affordances and the creative capabilities provided by digital tools such as word processors, audio/video and later hypertext and the Web. The Center for Digital Storytelling – itself an offshoot of a community theatre project in the early 1990s – was founded in San Francisco in 1998 and later renamed "StoryCenter" when it moved to Berkeley, California in 2015 (Alexander, 2020).

Participants in StoryCenter's three-day workshops learn basic skills for composing with digital tools, but the overwhelming emphasis for newbie digital storytellers, even in our own post-digital age of TikTok videos and Snapchat filters, continues to be on the timeless elements of effective storytelling. Joe Lambert's (2010) *Digital Storytelling Cookbook* outlines the seven steps of effective storytelling that workshop participants follow as they develop their digital stories:

(1) finding and clarifying stories ("Owning Your Insights");
(2) focusing on the meaning of the story ("Owning Your Emotions");
(3) zeroing in on the right moment (or "scene") in the story to tell ("Finding the Moment");
(4) choosing effective visuals ("Seeing Your Story");
(5) developing the aural components of the story ("Hearing Your Story");
(6) organizing the various elements into a coherent and compelling narrative ("Assembling Your Story"); and
(7) sharing the story with others ("Sharing Your Story") (Lambert, 2010).

The use of digital tools comes relatively late in the storybuilding process, and digital affordances are treated as enhancements, but never as replacements, for the construction of compelling stories. Even with a world of digital tools to choose from, the basic elements of storytelling are still front and center.

Recent examples of digital stories abound on the Web. The Modern Language Association's aforementioned *Digital Pedagogy in the Humanities* site contains links to several examples of digital stories, as does the main StoryCenter website. Colleges and universities around the country maintain curated websites with links to digital stories, like this one from Macalester College that showcases the digital stories of first-generation college students, or this one from Coe College at the University of Houston. While digital storytelling has come a long way from its beginnings in the early 1990s, the many affordances they provide are still captivating students everywhere and at all skill levels. Digital storytelling promotes viewing writing as a process of invention, planning, building, sharing and revision; it highlights the ways that orality and literacy function together to create meaning; it encourages students to think first and foremost of real, authentic audiences for their stories; and it teaches students how to be self-reflective. Perhaps most importantly, digital storytelling engages students in a process of intellectual discovery, particularly when they are asked to connect their stories to larger societal, cultural and political problems.

As Jonathan Gottschall (2013) notes in the book of the same name, humans are "storytelling animals." Tapping into and exploiting this natural tendency to live in and through stories is engendered by a well-crafted curriculum that foregrounds the use of digital storytelling in learning to develop critical literacies. As technological advances inevitably continue to unfold, affordances such as wearable devices and ubiquitous computing will likely become the new terrain on which digital storytelling takes place (Blevins, 2018). Already, as Sarah Warren-Riley (2017) notes, the always-on nature of social media and the ubiquity of smartphones in our students' lives (and in our own) have contributed mightily to a "blurring of the definition of digital storytelling in general" (p. 116). Warren-Riley (2017, p. 116) asks, provocatively:

> [A]re Snapchat Stories digital stories? Can we consider the posts made on Facebook a form of narrating our everyday stories? What about the short burst submissions documenting daily dramas on fmylife.com?

We currently exist in a technological moment in which, for most ordinary people, a more or less firm distinction between the digital and the non-digital (or analog) is still possible; however, the ground beneath our feet is rapidly shifting, as theorists of the so-called "post-digital" have suggested (Cramer, 2015). We are no longer enthralled by our digital devices and what they can do, in other words, and we are already at an inflection point where the lines between digital and analog have become blurred.

What will this mean for digital literacy and digital storytelling in the future? If the digital becomes, as we think it will, simply the water in which we all swim, then what does this mean for the teaching of digital storytelling? We believe that the post-digital will only heighten and intensify the need for students to be able to nimbly and persuasively express themselves, share their stories and connect those stories to the social, cultural and political world around them in compelling ways; the most recent research on digital literacies seems to bear this out. For example, noting that personal narratives often lack rich sensory detail, due in part to the writer's close proximity to their own experiences, John Misak's (2018) work focuses on using virtual reality (VR) as a way to help students immerse their readers in the narrative, the "being there" that is an essential component of effective writing across nearly all genres (p. 40). Similarly, Brenta Blevins' (2018) recent work on augmented reality (AR) challenges students to analyze the various "layers" of textuality that comprise digital texts and textuality in general. First and foremost, she is concerned to show how emerging technologies, such as AR, VR and wearables, participate in centuries' old techniques of storytelling and immersion, while also foregrounding for students how the acts of reading and writing can be "something other than the usual linear, sequential representations brought about by the progressive ordering of pages as linear text on numbered pages" (Blevins, 2018, p. 26).

Crucial event narratives

We first define crucial events (Harris, 1989) as highly significant events within individuals' lives that have caused lives to shift in some significant way. These events are ones which were the focus for our students' digital stories. Initially, Author 1 storied her own experiences as a teacher in a large urban setting, in which she taught her high school English students about crucial events and how embedded artifacts – objects or tokens in one's life – could be connected to highly significant or crucial events. Author 1 invited her high school students to bring in artifacts from their individual spaces of home and community, and from these artifacts and artifact-talk, stories emerged and students wrote them down.

For our Tomorrow's Teachers, crucial events of joy and trauma were used as starting points, and from these emerged beautiful and compelling stories that testified to lives layered with various social issues, struggles and resilience. We purposefully name these stories that emerged "crucial event narratives," as they were corded to the crucial events or shifts in students' lives. Crucial events that emerged as springboards to students' storytelling did not always directly connect to their desires to become teachers. However, the digital storytelling provided a base of digital work from which students could understand how this kind of project could be used in their own future classrooms to create rapport and community with their students. We believe that this project has the potential to not only inform pedagogical processes and practices for pre-teacher education programs, but also inform K-12 educational learning that engages students in peer-to-peer critical thinking. This is because students in this study were a somewhat unique population: first, they were high school students who were involved in pre-teacher education; second, they were learning not only how to create digital stories, but also how to provide feedback to peers as future teachers; and third, these students were provided with the opportunity to participate in a digital storytelling project, with the idea that they could then reflect on how it could be used in their own future classrooms as an original type of assignment.

Conceptual framework

For our study, we used the social constructivist theory (Vygotsky, 1978) that locates learning as a socially constructed practice in which individuals actively take part as meaning makers and knowledge contributors. This framework fit our purpose, which was to understand how pre-teacher education candidates analyzed, understood and made meaning from their classmates' digital stories using the seven elements of digital storytelling (Dreon *et al.*, 2011). Students were collaboratively learning from one another as digital story authors presenting their life experiences through digital technologies, and as critics who thoughtfully considered their peers' stories as they were presented for critique. Social constructivist theory aided us as a conceptual foundation, and as the study evolved and we began analyzing students' critiques and responses, an experiential theory of response guided us in understanding how students were "able to identify or empathize with speakers" (Beach, 1993, pp. 60–61).

Study design

Grounded theory is a research design that allows for theoretical chords of knowledge to emerge directly from the data, and not for "knowing an objective external reality" (Charmaz, 2008, p. 401). We sought to understand how students would respond to their peers, and the data that emerged allowed us to understand different phrasings peers used, the questions they posed to understand their peers' stories and the reasons for the use of different kinds of digital storytelling elements and how students used them to write and construct the stories. Ultimately, grounded theory design fit our research inquiry of how pre-teacher education candidates analyzed, critiqued and made sense of their peers' digital stories.

Methods

Our study, which we were not able to complete as an empirical inquiry because of COVID-19, evolved instead into one that included reviewing and analyzing high school pre-teacher education students' digital stories, digital storytelling planning guides and peer responses. We focused on students' digital stories and peer reviews from two cohorts from two academic years: 2018–2019 and 2019–2020. To accomplish these modified methodological practices, we used digital methods of data collection. For the digital

storytelling planning guides, students had already uploaded these into our Canvas course, so we were able to retrieve these easily. Prior to the onset of COVID-19, Author 1 had asked students to find a pair partner who would be their audience and reviewer (and vice versa). During the semester, which became a solely online teaching and learning space, Author 1 held weekly Zoom classes with each class and used Zoom breakout rooms to allow students to work together on presenting their individual digital stories. We also used Canvas for submitting peer reviews.

We used simple color coding to first identify the seven elements of digital storytelling (Dreon *et al.*, 2011) in the data (digital storytelling guides and peer response papers) and from these, divided the work of coding among ourselves, separating the two years of student cohorts. The 2018–2019 cohort contained 16 cases of digital stories, and the 2019–2020 cohort contained 15 cases of digital stories. From the coded words and phrases that emerged and were connected to the overall categories of the seven elements of digital storytelling (i.e. gift of your voice, accompanying soundtrack, point of view, dramatic question, emotional content, economy of story and story pacing), initially, we used *in vivo* codes, or codes of students' (authors' and peer reviewers') direct language and then used second-layer coding of focused codes to summarize and then interpret the *in vivo* codes. Similar themes among peer reviews were then used to create categories for findings.

Analyzing student peer reviews

In this section, we discuss the seven digital storytelling elements (Dreon *et al.*, 2011) and how student peer reviewers' responses related to the different elements. First, we closely coded student peer reviews using *in vivo*. We then used focused codes to encapsulate the meanings from the presenters' and peer reviewers' words and phrases. Lastly, we developed emerging categories through which various themes came to light.

Digital storytelling elements

The digital storytelling guide (see "Process" sub-section) was our starting point to analyzing and reflecting upon students' reviews of their peers' digital stories. It allowed for students' critical observations and allowed us a bridge to their peers' responses (Tables 1–7, "Seven Elements of Digital Storytelling In Vivo Codes").

Comments like "You get a front row ticket to her thoughts," "It was beautiful and helped me understand the heartbreak that E_____ went through" and "She portrayed how she felt in words through descriptions and mentions to her feelings therefore strengthening her expression," along with other words and phrases enriched the peer reviews and allowed the different themes to emerge, as demonstrated in the table above.

In this section, we summarize findings from our analyses of students' peer reviews, comparing the data from each student cohort (2018–2019 and 2019–2020) in the form of students' qualitative comments in relation to the digital storytelling elements of emotional content, dramatic question, music, point of view, gift of voice, economy of the story and pacing.

For the element of emotional content, understanding was the primary emergent category for the 2018–2019 cohort, while point of view and purpose emerged from the 2019–2020 cohort's comments. Both cohorts' student comments shared the category of authenticity. There were no suggestions from either cohort relating to digital stories' improvement of emotional content.

The element of the dramatic question evidenced the importance of audience and speaker connection. For the 2018–2019 cohort, students noted feelings as being important to the audience's understanding of the digital story. For the 2019–2020 cohort, the presenter's

2018–2019 cohort	2019–2020 cohort
Authenticity: "You get a front row ticket to her thoughts."	View, purpose and authenticity: "The story was purposeful - not just surface-level" "The point of view demonstrates authentic emotions; authentic sadness in his story"
Understanding: "It was beautiful and helped me understand the heartbreak that E_____ went through." Happiness, sadness (feelings): "She had very dark, dull colors in the background and then they changed once the story started getting happy." Faith, forgiveness, empathy, honesty, sympathy and resilience (values): "The bright yellow background helps portray her bright feelings toward her faith." "Her presentation was about the death of a family member, an uncle, I have an experience with as well." "I'm proud of where I am from and how far I've come since then." [Digital story presenter comment]	

Table 1.
Emotional content

2018–2019 cohort	2019–2020 cohort
Hope, encouragement and community (feelings): "My hope is to encourage other people to share their story as well." [Digital story presenter comment] Audience connection: "I really felt her story reach me, even though I know nothing about farming. It inspired me to take chances and really face my fears."	Presenter's perspective as a bridge to the audience: "A_____ did a great job of making it interesting while being honest and true." Presenter's perspective as testifying: "The ability to share it shows how far you've come"

Table 2.
Dramatic question

2018–2019 cohort	2019–2020 cohort
Helping to tell the story: "The song, I felt, was a perfect match for the story being told." "It [the music] was beautiful and helped me understand the heartbreak H_____ went through."	Music as mediator or grounding element: "One strength is the choice of music, as it sets the tone well" "The music was instrumental, so there were no lyrics that could distract the audience from the text on the slide"

Table 3.
Music

perspective helped to connect the audience with the presenter and testified to their story. Suggestions from both cohorts made the storyline more prominent. The 2018–2019 cohort suggested using reflection to do this. The 2019–2020 cohort suggested using a variation of voice, modulation and stronger volume for the voiceover, while speaking clearly and including others' perspectives in the digital storytelling.

For the element of music, cohort 2018–2019 noted that this element, as a mediator, helped to tell the story. Only the 2018–2019 cohort offered suggestions and students' comments noted that adding musical tracks for stories that lacked these would be helpful.

Point of view, as an element in 2018–2019 student peer reviews, concentrated heavily on being a way for the audience to connect to the digital story. There were no 2019–2020

2018–2019 cohort	2019–2020 cohort
Connection to audience (engagement and transparency): "I am really happy that she was so open with us about this aspect of her life." "You did a good job of keeping it short enough to keep the viewer engaged but also to tell your story thoroughly."	None

Table 4. Point of view impact a story

2018–2019 cohort	2019–2020 cohort
Feeling the emotion: "She has such an amazing voice when she is telling about the very first slide. I could honestly feel the emotion." Engagement: "The voiceover was a good idea to tell the story." (Self-review) "She portrayed how she felt in words through descriptions and mentions to her feelings therefore strengthening her expression" "Another strength is you get a "front row ticket" to her thoughts."	Feeling, emotion and clarity: "Tone, I could feel the sadness in your voice, and I had goosebumps", ". . .when your voice quivered, it really made it more real and added more emotion to the story" "You could tell he was really emotional telling the story. His emotions added to the story and got his point across."

Table 5. Voice

2018–2019 cohort	2019–2020 cohort
Flow: "The timing was organized. The whole video flowed well to me."	None

Table 6. Pacing of story

2018–2019 cohort	2019–2020 cohort
Wanting more: "Mainly more descriptions, include certain parts that were examples of situations, and personal attachments such as personal moments"	Well thought-out: "It was a lengthy presentation and well thought out"

Table 7. Economy of story

comments related to this element. There were also no suggestions for improvement related to this element from either cohort.

The element of voice, which related to the digital storyteller's voiceover, had the same emerging categories of feeling and emotions for both student cohorts. The 2018–2019 cohort specifically noted that the element of voice provided audience engagement, while the 2019–2020 cohort noted that the voiceover mediated the storyteller's feelings. Neither cohort evidenced a cohesive emerging theme. However, comments of suggestion related to adding voiceovers for those stories that were lacking, adding different words or phrases to strengthen the storyteller's presence and to strengthen the voiceover for tone, volume and richness (eradicating monotone).

The economy of story, which relates to how much of a story is told/presented, was addressed differently with each cohort. The 2018–2019 cohort noted pictures as necessary for understanding the digital story. The 2019–2020 cohort presented very few comments, and the few that were presented related to most of the digital stories being well conceptualized. Both cohorts suggested adding more details in the way of descriptions, context and background information to digital stories that were lacking these sub elements. The 2019–2020 cohort also suggested adding more pictures for those stories that did not fully transmit meaning to the audience.

Pacing, which was the last element analyzed, had the emerging themes of story flow for the 2018–2019 cohort and slide transitions for the 2019–2020 cohort. Both cohorts conceptualized the element of pacing as contributing to the overall story presence. Suggestions were made for fluctuating pace and specifically for slides' transitions to smoothly move the audience through different parts of the story.

Implications for classroom use

Sharing spaces in secondary classrooms

Digital storytelling and digital storytelling peer reviewing are crucial to secondary classrooms because they open a space for conversation about students' lives that are not often heard, much less understood or appreciated. Teachers are realizing how critical it is to know their students more personally because of social issues that are heavily embedded in students' lives, such as finding one's identity as an LGBTQ+ youth or experiencing abuse during childhood upbringing (Romero-Ivanova, 2020). Before teaching and learning can begin, burdens and challenges in students' lives must first be unpacked, understood and dealt with. When students are willing to share about their lives, they will be able to form a connection with the teacher and in turn be willing to learn from that teacher. Digital storytelling with peer reviews allows students who want to be educators to become teachers in different ways. One of these ways is through evaluating one another. This becomes an opportunity for students to evaluate and give feedback to their classmates. In general, peer reviewing also allows students to understand the material on a deeper level because they have created digital stories and then peer reviewed others' stories – this becomes a richer and more memorable experience as they practice higher-order thinking skills.

Higher education classrooms

Before one teaches narrative writing (and for this article we refer to digital storytelling as a "narrative literacy practice"), one must acknowledge their own vulnerabilities and story. Digital storytelling has allowed each of us – Author 1, Author 2 and Author 3 – to acknowledge our own stories in the contexts of perspectives and knowledge we believed we owned and knowledge that changed. Delving into the various projects, whether it has been teaching in the Tomorrow's Teachers classroom space, teaching in the domestic violence

shelter or teaching in a high school program for after-school students, has given us a deeper understanding of how crucial narratives are in the higher education classroom. From the standpoint of simply being human, stories are crucial to provide testimony to differing circumstances and life experiences. Listening to and witnessing others' stories allow us to understand experiences that are different from our own. Paolo Freire (1998, p. 108) concludes that:

> If I consider myself superior to what is different, no matter what it is, I am refusing to listen. The different becomes not an "other" worthy of any respect, but a "this" or "that" to be despised and detested. This is oppression.

Conclusion

Our hope in writing and presenting this article is that teachers and instructors at different levels, K-12 through higher education, will consider digital storytelling as a pedagogical practice to spark deeper conversations within the classroom that flow beyond the margins and borders of instructional settings out into the community and beyond. We hope that others will use opportunities for storytelling, digital, verbal, traditional writing and other ways to spark conversations and privilege students' voices and lives.

References

Alexander, B. (2020), "Storytelling", Digital pedagogy in the humanities. Modern Language Association, available at: https://digitalpedagogy.hcommons.org/

Bakhtin, M.M. (1981), *The Dialogic Imagination: Four Essays*, Holquist, M. (Ed.), trans. Caryl Emerson and Michael Holquist, University of TX Press, Austin.

Barton, D. (2001), *From Pencils to Pixels: The Stages of Literacy Technologies*, Cushman, E., Kintgen, E., Kroll, B. and Rose, M. (Eds), Bedford/St. Martin's, Boston, MA, pp. 70-84.

Beach, R. (1993), *A Teacher's Introduction to Reader-Response Theories*, National Council of Teachers of English, Urbana, IL.

Blevins, B. (2018), "Teaching digital literacy composing concepts: focusing on the layers of augmented reality in an era of changing technology", *Computers and Composition*, Vol. 50 No. 1, pp. 21-38.

Charmaz, K. (2008), "Constructionism and the grounded theory method", *Handbook of Constructionist Research*, Vol. 1, pp. 397-412.

Cramer, F. (2015), "What is 'post-digital'", in Berry, D. and Dieter, M. (Eds), *Post-Digital Aesthetics: Art, Computation, and Design*, Palgrave MacMillan, New York, NY, pp. 12-26.

Dreon, O., Kerper, R.M. and Landis, J. (2011), "Digital storytelling: a tool for teaching and learning in the YouTube generation", *Middle School Journal*, Vol. 42 No. 5, pp. 4-10.

Freire, P. (1998), *Pedagogy of Freedom: Ethics, Democracy, and Civic Courage*, Rowman and Littlefield Publishers, Lanham, MD.

García, A. and Gaddes, A. (2012), "Weaving language and culture: Latina adolescent writers in an after-school writing project", *Reading and Writing Quarterly*, Vol. 28 No. 2, pp. 143-163.

Gist, C.D., Bianco, M. and Lynn, M. (2019), "Examining grow your own programs across the teacher development continuum: mining research on teachers of color and nontraditional educator pipelines", *Journal of Teacher Education*, Vol. 70 No. 1, pp. 13-25.

Gottschall, J. (2013), *The Storytelling Animal: How Stories Make us Human*, First Mariner, New York, NY.

Greenhow, C., Robelia, B. and Hughes, J.E. (2009), "Learning, teaching, and scholarship in a digital age: Web 2.0 and classroom research: what path should we take now?", *Educational Researcher*, Vol. 38 No. 4, pp. 246-259.

Harris, M. (1989), *Dance of the Spirit: The Seven Steps of Women's Spirituality*, Bantam Books, New York, NY.

Heath, S.B. (1983), *Ways with Words: Language, Life, and Work in Communities and Classrooms*, Cambridge University Press, Cambridge [Cambridgeshire].

Kern, R. (2000), *Literacy and Language Teaching*, Oxford University Press, Oxford.

Lambert, J. (2010), *Digital Storytelling Cookbook*, Digital Diner Press, Berkeley, CA.

Matthews-DeNatale, G. (2008), *Digital Storytelling: Tips and Resources*, ELI.

Mendoza-Denton, N. (2008), *Homegirls: Symbolic Practices in the Making of Latina Youth Styles*, Blackwell, Maiden, MA.

Miller, L.C. (2010), *Make Me a Story: Teaching Writing through Digital Storytelling*, Stenhouse, Portland, ME. "Our Story". (2020). Storycenter.org. Berkeley, CA.

Misak, J. (2018), "A (virtual) bridge not too far: teaching narrative sense of place with virtual reality", *Computers and Composition*, Vol. 50 No. 1, pp. 39-52.

Pahl, K. and Rowsell, J. (2010), *Artifactual Literacies: Every Object Tells a Story*, Teachers College Press, New York, NY.

Romero-Ivanova, C. (2020), "The sacredness of remembering and re-storying", *International Journal of Literacy, Culture, and Language Education*, Vol. 1 No. 1, pp. 4-27.

Scribner, S. (1984), "Literacy in three metaphors", *American Journal of Education*, Vol. 93 No. 1, pp. 6-21.

Vygotsky, L.S. (1978), *Mind in Society: The Development of Higher Psychological Processes*, Harvard University Press, Cambridge, MA.

Vygotsky, L.S. (1997), *The Collected Works of LS Vygotsky: Problems of the Theory and History of Psychology*, Vol. 3, Springer Science and Business Media.

Warren-Riley, S. (2017), "Digital storytelling in the age of social media", *Computers and writing proceedings, 2016-17*.

Corresponding author
Christina Louise Romero-Ivanova can be contacted at: civanova@iuk.edu