



ELSEVIER

Contents lists available at ScienceDirect

Computers & Education

journal homepage: <http://www.elsevier.com/locate/compedu>

Teacher professional identity development through digital stories

Deoksoon Kim^{a,*}, Yinru Long^{b,c}, Yi Zhao^{b,d}, Shuyue Zhou^{e,f}, Jeremy Alexander^g

^a *Teaching, Curriculum, and Society, Lynch School of Education & Human Development, Boston College, 140 Commonwealth Avenue, Chestnut Hill, MA, 02467, USA*

^b *Harvard Graduate School of Education, 13 Appian Way, Cambridge, MA, 02138, USA*

^c *Master of Education, Prevention Science and Practice, USA*

^d *Master of Education, Human Development and Psychology, USA*

^e *Teachers College, Columbia University, 525 West 120th Street, New York, NY, 10027, USA*

^f *Master of Education, Design and Development of Digital Games, USA*

^g *Lynch School of Education & Human Development, Boston College, Teaching, Curriculum, and Society, 140 Commonwealth Avenue, Chestnut Hill, MA, 02467, USA*

ARTICLE INFO

Keywords:

Digital stories

Teachers

Teacher professional identity

Identity development

ABSTRACT

Digital stories are powerful instructional tools that allow students to communicate complex concepts and emotions through both linguistic and nonlinguistic modes. A digital story is a 3–6 min multimodal video through which students can engage in critical reflection about their experiences, participate actively in the learning process, and give voice to their identities. This study analyzes two digital stories created by teacher education students in a graduate course; using a new framework that draws on Systemic Functional Linguistics, we demonstrate how these beginning teachers used digital storytelling to shape their professional identities. The results show how valuable digital stories can be in fostering reflection and teachers' development as professionals. The paper also introduces and illustrates an innovative systemic functional linguistic approach to analyzing digital stories as complex multimodal objects.

1. Introduction

Digital storytelling has been used for multiple purposes in schools and has received largely positive feedback from teachers and students (Kim & Jia, *In press*; Kim & Li, 2020; Lambert, 2002). The availability of technology and advanced, low-cost, user-friendly multimedia editing software make digital stories a powerful tool that can communicate concepts, emotions, and feelings through textual, visual, and auditory modes. A Digital Story (DS), a 3–6 min multimodal video, can engage students in critical reflection about their own experiences, facilitate their active participation in the learning process, and help them give voice to their identities (Robin, 2006). In this article, we describe how digital storytelling (DST) allowed early career educators to narrate their professional identity development.

Most studies of DST and teacher development have focused on how DST can facilitate teachers' reflective learning during the first few years of teaching. Digital storytelling has been shown to enhance reflection and creativity, which can help pre-service teachers explore and reconcile their professional identities (Marín & Challinor, 2018). Digital stories can also help prepare pre-service teachers

* Corresponding author.

E-mail addresses: deoksoon.kim@bc.edu (D. Kim), yinyinrulong@gmail.com (Y. Long), zoezhao673@gmail.com (Y. Zhao), zhousi@bc.edu (S. Zhou), Jeremy.alexander@bc.edu (J. Alexander).

<https://doi.org/10.1016/j.compedu.2020.104040>

Received 25 March 2020; Received in revised form 26 August 2020; Accepted 4 October 2020

Available online 20 October 2020

0360-1315/© 2020 Elsevier Ltd. All rights reserved.

to teach in various subject matters and can facilitate digital literacy (Kotluk & Kocakaya, 2016; Røkenes, 2016; Starčić, Cotic, Solomonides, & Volk, 2016). Digital stories can foster empathy and can break down demographic barriers between teachers and students (Reyes & Brinegar, 2016), and they can facilitate English language learners' identity formation (Kim & Jia, *In press*; Kim & Li, 2020). Despite this previous research on the promise of DST, we do not know *how* digital storytelling can facilitate reflective learning and teacher professional identity development, especially as pre-service teachers start to transition from students to teachers (Steadman, Kayi-Aydar, & Vogel, 2018).

In addition, few have analyzed digital stories with a sufficiently systematic framework. In this study, we adopt the "grammar of visual design" developed by Kress and van Leeuwen to study multimedia semiotics. Kress and van Leeuwen describe three layers of meaning-making in images: *representational/ideational*, *interactive/interpersonal*, and *compositional/textual*. Building on this, Unsworth (2001) proposes a Systematic Functional Linguistic approach that we adapt to study how educators and students use digital stories to facilitate reflection and identity development. We complement this with Serafini's (2015a; 2015b) *sociocultural approach*, adding an ideological component to the analysis. This analytical framework allows us to capture how multimodal signs communicate content and feeling, allowing educators to reflect on their experiences and develop their professional identities.

The present study analyzes two digital stories created by teacher education students in a graduate course. Through a close analysis of the digital stories, we illuminate how pre-service and first-year teachers use digital storytelling to shape their professional identities. We address the following three research questions:

1. How do students in a teacher preparation program engage with digital stories?
2. How do teachers develop their teacher professional identities while creating their digital stories?
3. How can the "visual grammar" described in systemic functional linguistics illuminate teachers' voices and reflection in multimodal digital stories?

2. Literature review

2.1. Teachers' professional identity and digital storytelling

Professional identity centrally includes "the attitudes, values, knowledge, beliefs, and skills that are shared with others within that profession" (Beddoe, 2013, p. 27). Professional identity is emergent and involves ongoing self-interpretation. For prospective teachers, the perception of themselves as professionals influences their behaviors, effectiveness, and well-being (Rus, Tomša, Rebege, & Apostol, 2013). Self-reflection is a crucial skill for developing a professional identity (Marín, Tur, & Challinor, 2018). Through reflection and communication with others, pre-service teachers construct a consistent narrative and understanding of their feelings and positions (Marín et al., 2018; Miehls & Moffatt, 2000).

One effective way to reflect on experiences and explore ideas is through storytelling (Skouge & Rao, 2009). Storytelling has become multimodal, and DST has emerged as a new way to tell stories (Tendero, 2006). DST facilitates teachers' reflection and opportunities to develop identities. Boud, Keogh, and Walker (1985) describe how DST can help prospective teachers become reflective practitioners. Kearney (2009) finds that prospective teachers can create "deeper analyses of their experience and appraisal of their learning" in digital stories, which in turn become objects for reflection (p. 4).

Furthermore, DST facilitates the formation of how prospective teachers "view, reflect, compose, and imagine versions of the teaching 'self'" (Tendero, 2006, p. 175). Envisioning oneself in DST as a professional teacher can facilitate the development of professional identities (Davis, Sydnor, Daley, & Coggin, 2017). Looking at first-year teachers, Marín et al. (2018) found that DST was a "suitable didactical strategy to enhance the construction of the professional identity of the TE students" (p. 407). Collectively, these studies demonstrate that DST can be a useful tool in helping pre-service and early career teachers become self-reflective and develop their professional identities.

2.2. Teacher's voices and feelings in digital storytelling

DST allows synthesis of teachers' learning experiences, reflections, and recollections (Kearney, 2009). Starčić et al. (2016) describe how in DST teachers can record moments in their careers and organize pictures, choose music, and edit videos. This facilitates both meaning-making and communication. Kocaman-Karoglu (2016) finds that pre-service teachers perceive DST as "an attractive way to share ideas and feelings," and it facilitates prospective teachers' emotional expression. Digital storytelling also facilitates teachers' exploration of their own voices. Pre-service teachers report that DST is a more interesting way than traditional storytelling for self-expression (Robin, 2008). Along with helping develop professional identities, then, DST allows pre-service teachers to reflect on and articulate their own voices.

2.3. An analytical framework for digital stories

Since digital stories are complex multimodal ways of communicating, we needed a method of analyzing and understanding what authors are communicating. We combined Unsworth's (2001) systematic functional approach with Serafini (2015a; 2015b) ideological perspective to analyze the digital stories we collected.

Unsworth (2001) describes three "functions." The first is the *Representational/Ideational* perspective, which facilitates understanding of what happened, who participated, where the event was, and other represented information. In our analysis we focus on

actions, events, and personal portrayals in the digital stories. The second is the *Interpersonal/Interactive* perspective, which focuses on the relationships between the viewer and the content, as well as between the author and characters in the story. We implemented this perspective through a focus on factors such as characterization, attitudes, and emotional content. The third is the *Compositional/Textual* perspective, describing the way in which information is organized. From this perspective, we analyze sign distribution and placement, framing, and proportions.

Serafini (2010) also proposes an *ideological analytical perspective*, assessing “sociocultural, historical, and political contexts of the production and reception of texts” (Serafini, 2015a, p. 414). This perspective looks beyond relationships within texts themselves and extends into the background contexts of the images, sounds, and ideas used. Considering texts as sociocultural artifacts, Serafini argues that digital stories are “sites of production, sites of reception, critical lenses (gender, race and power), and representations and stereotypes” (Serafini, 2015a, p. 414). This allows us to link the meaning-making semiotic elements, like images and texts, to social contexts (New London Group, 2000).

3. Methodology

3.1. Context

This research uses qualitative case study methods (Starman, 2013). The study took place in an elective teacher education course in a U.S. research university in spring 2018. The course helped participants master various emerging technologies, create technology-enhanced curriculum and lesson plans, and provide better learning experiences. There were 12 students, both undergraduate and graduate. Three were already teachers, and the rest were either pre-service teachers or exploring the possibility. The instructor expected students’ active participation.

The final project was to create a digital story along with two written reflections. The digital stories connected to the course content, their teaching philosophy, and their experiences teaching. Students combined audio, visuals, and word-based text into cohesive, 5-min videos about their own practices and development. Ongoing support was offered to the students, through a workshop on WeVideo software, help with video production, and feedback on early drafts.

3.2. Participants

We used a purposive sampling method (Merriam, 1998) to select two of the 12 students in the course. Kara and Mark were chosen because the content of their digital stories focused on their professional identities as teachers. Kara, a 23-year-old Caucasian female student, was a first-year teacher in a 2nd-grade class. Her digital story discussed her experiences with the “Bridge Unit” she designed and conducted. Mark, a 23-year-old male student, was a pre-service teacher. His digital story described conquering stage fright in both acting and teaching and compared his theater experience to his teaching (Table 1).

3.3. Data collection

This qualitative case study involved five sources of data (see Table 2): 1) observations and field notes, 2) students’ reflections, 3) semi-structured interviews with the students, 4) written reflections from the students, 5) and the digital stories.

3.4. Data analysis

We started with within-case analysis and then compared data across participants. We analyzed two sets of data: (1) qualitative data, which included observations, reflections, and interview data, and (2) the digital stories. We transcribed the data and used two kinds of coding methods for the qualitative and digital storytelling data. We generated codes based on extant literature and used open coding to identify themes. For the digital storytelling data, the researchers used the visual grammar framework described above.

3.4.1. Qualitative data analysis

In order to analyze the qualitative data collected, the researchers generated a list of themes in the literature related to professional identity development and digital storytelling. We analyzed data inductively (Lincoln & Guba, 1985). Adopting a constant comparative method (Strauss & Corbin, 1990), we implemented “open coding,” “the process of breaking down, examining, comparing, conceptualizing, and categorizing data” (p. 116); axial coding, “a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories” (p. 96); and “selective coding,” “the process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development” (p. 116). After coding, themes emerged. These included teachers’ voices in the classroom, teachers’ challenges,

Table 1
Participants.

Participant	Status	Gender	Digital Story Title	Digital Story Theme
Kara	First-year Teacher	Female	Bridge Unit:	1st-year Teacher
Mark	Pre-service teacher; fifth-year student	Male	To Teach or Not to Teach: Conquering Stage Fright	Professional identity exploration

Table 2
Data collection.

Data Collection Method	Description
Observations & fieldnotes	The observations and fieldnotes were collected by one of the researchers, who also served as the instructor for the course. She observed the class closely and took field notes after every class. The 3-credit-hour course was offered to graduate students in their teacher education program.
Students' reflections	Participants completed essay-based personal reflections as homework, in which they documented their experiences twice during the semester.
Interviews	Two separate semi-structured interviews were conducted with the participants after the course was finished. Each interview lasted 45–60 min. The interviews focused on (a) the participants' professional identity development, (b) attitudes and experiences with technologies in the classroom, and (c) the digital story project. The researchers transcribed and coded both interviews to highlight specific themes that emerged.
Artifacts	The digital stories served as a significant piece of data. These were the final projects students turned in at the end of the semester. Each student created a 5 min digital story on a topic of his or her choice.

Table 3
A new analytical framework for digital storytelling.

Approach/ Dimensions	Segments	Video Clips/Images	Audio/Sound	Voice Over/Narration
Representational/ Ideational	How did it happen? Where did it happen? Who was involved? What objects were involved? <ul style="list-style-type: none"> • Sequence, place, participants, and objects • Narrative: transactional, non-transactional, actional, reactional, verbal, and mental • Conceptual: classificational, analytic, symbolic 	What elements of the video clips/images are used to tell the story?	What audio/sound is incorporated into the story?	What types of voice over/narration are used to tell the story?
Interactional/ Interpersonal	What are the relationships between "viewers and what is viewed"? What is the relationship among participants in the story and the author? <ul style="list-style-type: none"> • focalization (contact, observe), social distance (intimate/personal, social, impersonal), Attitudes (subjectivity-involvement, detachment, viewer power, equality, representation power, objectivity-action oriented, knowledge oriented) 	How are video clips/images used to show interactive/interpersonal relations and relations between the author and participants in the story?	How are audio/sound used to show interactive/interpersonal relations and relations between the author and participants in the story?	How does the author compose voice over/narration to build relationships?
Compositional/ Textual	What is the main story? How does the author tell the story? How does the author assemble the story? <ul style="list-style-type: none"> • Information value (centered, circular, triptych, center-margin, mediator, given-new, ideal-real) • Salience (Maximum salience, minimum salience) • Framing (Maximum disconnection, maximum connection) • Narrative structure • Narrative tension • Cross-modality (video clips/images, music/sound, and voice over/narration) 	How does the author assemble the story? How are video clips/images coordinated?	How does the author incorporate music/sound into the story?	How does the author narrate the story to make points?
Sociocultural/ Ideological	Who is the author? What is the author's social, cultural, and political position? What is social context during the composition of the story? <ul style="list-style-type: none"> • Sites of production • Sites of reception • Critical lens • Representations and stereotypes 	What video clips/images does the author use to express his/her intention?	What music/sound does the author use for this particular story?	How does the author narrate the story? What kind of tone of voice does the author use?

professional identity, opinions about technology, experience with and attitudes toward DST, and benefits of DST. During open coding, we refined the codes. After compiling the codes for each case, we compared the codes and themes identified across the two cases and evaluated the differences and similarities.

3.4.2. Digital storytelling data analysis

We developed a new framework based on Systemic Functional Linguistics to analyze the stories, as described earlier, focusing on representational/ideational, interactive/interpersonal, textual/compositional, and ideological dimensions. Our study is not linguistic, so we do not focus on the details of linguistic forms. Nonetheless, the linguistic meta-language is useful for understanding how the beginning teachers used DST toward professional identity development. Table 3 summarizes the key questions raised in the various elements of the framework.

We analyze the video, audio and narration. We ask how these interact with one another to help communicate a coherent message. From a *representational/ideational* perspective, we asked questions such as: How did it happen? Where did it happen? Who was involved? How did elements of the video, audio and narration communicate these things? From an *interactional/interpersonal* perspective, we asked: What are the relationships among participants in the story? We also examined relationships between the author and characters in the story. For example, as illustrated below, we examined whether a character in an image is looking directly into the camera, giving the impression of looking directly at the viewer (Kress & Van Leeuwen, 1996). From a *compositional/textual* perspective, we asked: What is the main story? How does the author assemble the story into a whole? From a *sociocultural/ideological* perspective, we asked: What is the author's social, cultural, and political position? We examined sites of production, sites of reception, representations, and stereotypes. The article applies this framework to the stories from Kara and Mark, examining each of the perspectives in turn.

The process of applying the new analytical framework is: 1) choose 5–7 screen shots of key moments from the story; 2) create the digital story transcription, focusing on images/films, audio, including voice over and music, and texts; 3) analyze transcriptions using the framework which is comprised of a) *representational/ideational*, b) *interactional/interpersonal*, c) *compositional/textual*, and d) *sociocultural approaches*.

4. Findings

Both participants created well-crafted digital stories. Kara's story explored a "Bridge Unit" she designed and implemented. She communicated how this successful unit empowered her as a teacher. Mark's story explored the choice between working in theater and being a teacher. His story revealed overlaps and compatibility between the two roles. This section analyzes the teachers' experiences with digital stories and explores their use of multimodal stories to express their voices and develop professional identities.

4.1. Teachers' experiences with digital stories

Both teachers felt positively about digital storytelling, and they were optimistic about technology in schools. Although they faced challenges while making digital stories, they had fun and planned to use digital storytelling in their teaching.

Kara and Mark saw significant potential for educational technology. Even though Mark had not used educational technology much, he felt that teachers "underestimate how tech savvy [students] are." Kara was already "a huge proponent of technology," and she had incorporated technologies into her teaching. She had also adopted social media communication with parents. She kept a class Instagram profile where she would post photos and videos daily for parents. She described it as "a mini digital storytelling every day." In her full digital story, she incorporated images of her students using technology, particularly the *Seesaw* app. At the end of the digital story, she articulated an aspiration to "enhance the curriculum using technology in intentional ways."

Both participants enjoyed creating digital stories and productively engaged the challenges. While the "editing process was actually kind of enjoyable," Mark claimed, determining the story's contents could be challenging. Creating the narrative structure took substantial reflection. Kara said: "I enjoyed the technology, fitting in the music and this and that, that's ... an interest of mine." She suggested that "the process wasn't difficult, but I definitely put in the time and effort to make it what it was ... the structure of narrative made me think 'okay did I do things in a logical order, did I do it in a kind of timely enough order.'" She needed to "think about what kind of dialogue [she] wanted to go along with it as [she] was sharing." Creating the digital story made her stop and think about her teaching. Mark faced the "interesting challenge" of deciding "how to make sure everything was streamlined and made sense and there weren't gaps and there was no confusion." Because Mark had two narratives, one about his experience in theater and one about being a teacher, he had to "ground [himself] and figure out exactly what message [he] was trying to get across ... and figuring out which narrative threads were most important there. [His] challenge was finding a way to balance the two ... without distracting the viewer or overwhelming [the audience]."

The process of creating the digital story was rewarding in two important ways. First, it facilitated teacher professional identity development. Mark suggested that "it really did force [him] to look at this kind of dichotomy [between theater and teaching as possible careers] and figure out what it meant." Second, it facilitated communication. Kara noted that "I've been able to share my project, that digital story video with other colleagues, and friends and all. Just kind of share what we were doing It has met with a positive response from faculty, parents and administrators." By sharing her digital story, Kara connected with an engineer in California and invited her to be a guest speaker. Kara said "I think it also helped me reach out to other people by just being informed about what we were doing. I was able to make that connection with her I think that a picture or video is worth 1000 words and especially with my speech along with the video, and the kids' smiles and the progression. It's just a great way to explain [the bridge unit] in 4 min or less."

These positive experiences with digital storytelling made both participants want to create more digital stories. Mark said that “I myself would like to use it in the classroom,” and Kara had already “made other creations on WeVideo since I think that having some sort of video to capture the experiences is beneficial. I like the idea of digital storytelling; I think it works well for me.” She also mentioned that WeVideo was easy to use and captured classroom experiences effectively.

4.2. Developing professional identities with digital stories

In this section we analyze how Kara and Mark developed teacher identities through digital storytelling. They were similar in some ways, but they were at different stages of their professional development. Kara was a first-year teacher who faced many real-life classroom challenges, while Mark was a preservice teacher struggling over whether to become a teacher.

4.2.1. Kara – using digital storytelling to demonstrate her identity to others

Kara’s professional identity development involved a conflict between more traditional expectations and her desire to serve students by adding interconnectivity and re-organizing the curriculum. She mentioned this goal at the beginning of her digital story, and it was also woven throughout the project.

Digital storytelling provides an opportunity for reflection and learning from others. Kara’s story her developing confidence and capacity as a teacher. She emphasized the importance of reflection for growth, and the story facilitated reflection on her “teaching philosophy in greater depth.” In significant part, she intended to demonstrate her competence and success to her parents. Digital storytelling allowed her to turn internal reflection into a presentation for others, including her parents, as well as friends and colleagues. The feedback she received from classmates, her principal, and her parents facilitated the development of Kara’s professional identity during a difficult transition year.

In addition to soliciting useful feedback, sharing the story involved collaboration that allowed her to make connections. For Kara, this involved inspiring others and exchanging ideas. This exchange also helped establish relationships with other teachers, which led to an increased sense of belonging. As a result, she mentioned “collaboration with others” as something she would strive to do more. For a first-year teacher, sharing a digital story can help build professional identity by facilitating connections with other teachers and improving confidence.

4.2.2. Mark - resolving identity conflicts through digital storytelling

Mark loved both theater and education. Like Kara, he started his story with his own interests and experiences. He began by quoting Shakespeare on theater and describing his performance as an actor when he was ten years old. He included a video clip of him acting to emphasize the importance of theater in his life and identity. The rest of his story recounted a journey in which he realized similarities between teaching and acting and reconciled these two identities.

Initially, Mark struggled to reconcile his love for theater with his desire to become a teacher. This created difficulties crafting a narrative and forced him to clarify his ideas about the profession he would pursue. Through storytelling he articulated his “inner voice” and resolved his “internal conflict” by narrating a solution.

Through his digital story, Mark presented his internal struggle using multimodal representations. He felt that feedback from classmates was important, to hear what others thought about his idea of integrating theater and education. In the two screenshots in [Image 1](#), Mark is first seen performing a play on stage. In the second image, Mark has used photoshop to place himself in a classroom setting as a teacher. The first Mark is on a theater stage, and the second image places Mark, by analogy, on a classroom teaching stage. The sequence of the two images indicates a possible resolution of the conflict between his two identities, working towards an integrated professional identity as a teacher who treats the classroom partly like a stage.

4.3. Using the new digital storytelling analytical framework

The students’ digital stories differed, one describing a curriculum unit and the other an identity conflict. There were also similarities. Kara and Mark’s stories were both told in chronological order and contained multiple characters, including the authors. They

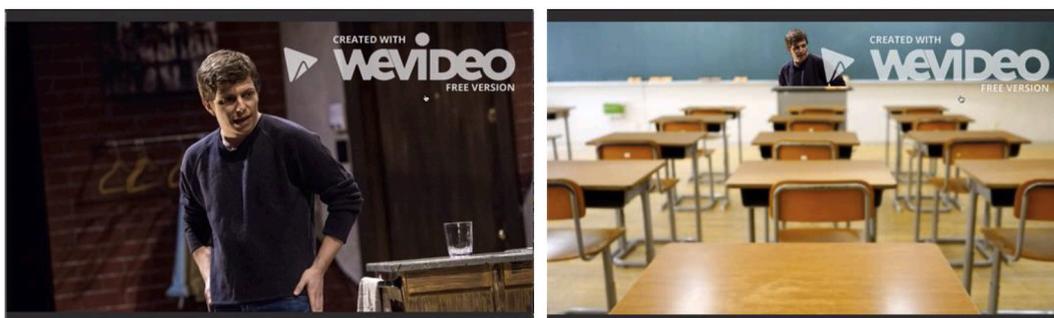


Image 1. Mark’s Digital Story entitled “To Teach or Not to Teach: Conquering Stage Fright”.

represented in-class and out-of-class experiences. Both stories ended with reflection on professional identities. In order to explore the use of voice, reflection, and emotion in more depth, we draw on the analytic framework described above and explore representational, interpersonal, textual, and ideological dimensions. We do not do a detailed discourse analysis as a linguist might. Instead, we give examples of how each story employed multimodal signs to communicate its central messages in each of the four dimensions.

4.3.1. Representational/ideational perspective

The *representational/ideational* perspective focuses on the events and objects in the texts, including the characters represented. Kara and Mark's digital stories foregrounded the authors' desire to make a difference in education. The first line in Kara's digital story, for example, stated that she really wanted to make an impact on children as a first-year second-grade teacher. The narrators wanted to build a connection with their audiences by engaging them in a quest to make a difference for young people and by introducing various aspects about themselves as prospective or beginning teachers who were on their way to accomplishing this. The interplay of subsequent episodes was similar in both digital stories. The authors provided detailed accounts of how they moved forward with their teaching and ended with conclusions that summarized the events narrated and offered future directions for their professional lives as teachers.

The images in the stories helped accomplish this representation. Kara incorporated her classroom yearbook photo, various photos of bridges, and images of her classroom. Mark also used photos of himself acting and in classrooms, in chronological order, as well as a couple of short video clips to make the story feel real. The scenes in Mark's and Kara's digital stories were not limited just to classrooms, but also included other places such as an innovation center, Boston Common, and a theater stage. As a beginning teacher, Kara's digital story mostly portrayed her students and colleagues at school (see [Image 2](#)). Mark represented his previous experiences in the theater and teaching (see [Image 3](#)).

The language in both digital stories was in the past tense, in both active and passive voice. However, the use of personal pronouns was very different due to the life experiences of the authors and the purpose of their narratives. Kara, who spent most of her time with students in her class, tended to use plurals such as "we" and "they," saying, for example, "over winter break, *they* were asked" and "to prepare for *our* second grade bridge challenge" She only used "I" in the beginning, when she was introducing the purpose of the project, and at the end when she was summarizing lessons learned. In contrast, Mark used the singular "I" throughout the entire project, focusing the representational content of the story on himself. Towards the end, he transitioned to using "you," when communicating to the audience what he learned. Kara and Mark also both used "as you see" in their narratives, inviting the audience into their projects and sharing their points of view with the audience.

The background music was mostly soothing and relaxing. Kara used instrumental background music provided by WeVideo, because she felt that "lyrics would detract, versus this was sort of just like a little chill in the background." She also used two different pieces of music with slightly different rhythms, to suit the emotional tone of the scene being represented. Mark also used different pieces of music to create contrast between scenes and to highlight shifts in the topics that composed his story. He said: "I remember putting, using a classical piece of music at the beginning because I remember talking about the history of theater ... I use that to provide a contrast to the next clip I had because I was kind of talking about theater from a very academic, almost elitist kind of standpoint, talking about its history."

4.3.2. Interactive/interpersonal relations perspective

The *interactive/interpersonal* perspective focuses on social relationships and evaluations. It examines relationships among the author and other characters in the story, as well as presupposed relationships with the viewing audience, and it thus positions author, characters, and audience in social reality. The content of these digital stories was personal, as the authors explored the pursuit of their professional dreams and responsibilities. The stories contained video clips and photos of the authors from various distances, perspectives, and time periods. When Mark explained why he put a video clip of him as a 10-year-old boy acting on stage (see video clip 1), he said he wanted to show the audience that "this is something that was so integral to my being ... I had to establish the fact that theater wasn't just this side thing that I was doing." The author was emotionally connected with the story content and wished to communicate this feeling to the audience, enlisting them in his love of theater and his struggle with how to continue pursuing that.



Image 2. Classroom.



Image 3. Theater.

Supplementary video related to this article can be found at <https://doi.org/10.1016/j.compedu.2020.104040>

Mark used humor and stickers (e.g., the electric bulb in the middle of the screen) to attract the audience's attention and make them feel connected to him as the narrator. When he introduced himself at the beginning of the story, for example, he described himself as a boy in an "oversized trench coat and pencil-thin mustache." This clip showed a 10-year-old boy who was acting as a detective, carefully examining evidence at a crime scene.

Both teachers wanted to engage their audiences and build connections with them. Kara accomplished this through a transition from impersonal wide-angle images to intimate perspectives that portrayed a connection between students and audience. In the first part of her digital story, Kara depicted children engaged in their projects by using pictures of students staring at their own work rather than looking elsewhere. This created social distance for viewers, as students were shown working in groups with limited interaction with the teacher or the audience. Students were mostly seen from an overhead view, indicating an impersonal relationship between the audience and the main characters, placing the viewer at a distance from the actors, and creating a sense of being outside of the action (Unsworth, 2002).

Kara's voiceover with these images also distanced viewers by addressing them as outsiders looking in. For example: "*as you can see*, the second-grade students absolutely loved the day. They remained engaged throughout this entire unit." In contrast, towards the end of Kara's digital story, students were presenting their projects and Kara used pictures of students staring at the camera and making direct eye contact, as if they were presenting to the viewer (see images 4 & 5). She invited audience members to stand beside her, as it were, and share the same viewpoint. The connection between the audience and the students became stronger across the story, as students were increasingly shown up close and often used hand gestures to indicate their feelings of confidence and accomplishment. Additionally, a short video clip (clip 2) showed students engaged in the project and counting coins, giving a feeling of inviting the audience into their project. Images 4 & 5 also showed students' making direct eye contact with the audience and sharing their success by making a "V" finger sign, acting playful and showing their engagement in the project. This change in perspective across the story helped make the audience feel more connected to the characters.

Supplementary video related to this article can be found at <https://doi.org/10.1016/j.compedu.2020.104040>

In the video clip, several boys were seriously counting the coins (which symbolized cars) on the bridge, which was made of marshmallows. They counted, "ten, eleven, twelve, thirteen," and then the bridge fell down. Two students screamed "twenty!" with excitement and looked at the teacher who was holding the camera. This clip showed the dynamic nature of the experiment and students' total engagement. As they were counting, their teacher and the students invited the audience to join their project.

Perhaps because they were at different points in their professional development, the two authors offered different characterizations in their digital stories. In Kara's digital story, students played a key role as they worked through the bridge unit and provided feedback to the teacher. Her story portrayed the interaction between teacher and students, and the images mostly showed students practicing their bridge projects. On the other hand, Mark's digital story was about self-exploration and reflection. As a pre-service teacher, he did not have the same opportunity as Kara to implement his ideas in a professional setting. He was the central character in his story, and he



Image 4. Kara's bridge unit.



Image 5. Kara's bridge unit.

provided more of a digital monologue. Compared to Kara's teaching experiment, Mark's project was more intimate and focused on his personal life, although he did think about and position himself with respect to the audience, trying to engage them in his dilemma and the subsequent resolution.

4.3.3. Compositional/textual perspective

The *compositional/textual* perspective highlights the meaning that is constructed by putting together various components of the project. In what ways does author use signs to create meaning in particular segments and across the entire story? This perspective also explores how authors integrate multimodalities such as video clips/images, music/sound, and voice over/narration into a whole. This integration can be done in different ways, sometimes such that all aspects work together to communicate and tell the story. We analyzed how the two authors used multimodal signs to convey their messages in their digital stories. In this part of the analysis, we focus on the means of delivery and the juxtaposition of signs rather than on the content that was communicated. Mark and Kara assembled their stories to communicate their main ideas. Both stories used still photos and video clips as the primary means of communicating. These were largely drawn from the authors' personal experiences. Some icons and diagrams obtained from the internet, such as a bridge and book in Kara's story, were also used to explain concepts. Outside of the titles, there was very little text in these stories. The authors also used voiceover to narrate the stories.

Both authors chose to center their photos and texts in order to increase the salience of certain messages. Titles were either in a bright color or highly contrasting with the background (e.g., black and white in Kara's video). Images 6 and 7 illustrate her use of black and white text.

The font of the titles varied across the digital stories, as in images 6 & 7). Kara kept her photos and video clips in a similar ratio and format, but she used different fonts. For example, she switched fonts when she moved on to describe "Bridge Challenge Day," highlighting the culminating nature of the event. Mark, in contrast, chose to stretch his image to cover most of the screen and thus highlight his own story.

The background music in both digital stories emphasized the changes in authors' feelings and simultaneously engaged the audience. Kara and Mark both recorded their narration in firm, clear voices. The digital stories were short and concise, following a chronological order and containing an introduction at the beginning and reflections at the end.

The two teachers' stories allowed them to articulate their voices as teachers and narrate their developing teacher professional identities. Mark's digital story ended by returning to his ten-year-old self reminding the audience of Shakespeare's claim that all the world's a stage. "When I step into a classroom, I know exactly what to do. Shakespeare really was right, when he said that all the world's a stage." By communicating in this way he reinforced the connection between his acting career and his upcoming teaching career.

Kara said in her story that "collaborating with others and thinking about ways in which to enhance the curriculum using technology and intentional ways is something I'm striving to do as professional." This indicated how she was developing confidence.



Images 6. Kara's digital story.



Images 7. Kara's digital story.

4.3.4. Socio-cultural/Ideological perspective

The *Socio-cultural/Ideological* perspective recognizes that all meaning or communication takes place within a particular sociocultural context. This aspect focuses attention on the way projects are determined by and interact with the social world. For example, two common themes that were raised in both digital stories were technology and teacher education. Kara asked her students to use a camera to record the bridges they observed outside of school during their winter break. She let students use cameras, iPads, and Sea Saw Apps to record bridges they saw as well as ones they created. Mark shared his story by showing photos and video clips of himself in his digital story. Often technology is used in education to open up broader platforms and allow educators to receive resources, design curriculum, and spread their knowledge. After completing this project, Kara was planning to use digital storytelling in her own class and she subsequently introduced this technology to her students.

The theme of teacher education also appeared in both digital stories. Kara built her confidence as a first-year teacher who reinforced her conviction that she can make an impact on students. Mark, a male preservice teacher, shared his personal story in order to encourage prospective educators and actors to overcome stage fright and other difficulties. The digital stories marked their professional development as teachers as well as the changes in their identities, feelings, and voices. The interconnection between technology and teacher education was vital to both students.

5. Discussion & implications

The goal of this study was to analyze two digital stories by attending to representational, interpersonal, textual, ideological dimensions, and to investigate pre-service and first-year teachers' professional identity development that can take place through the creation of digital stories. In order to accomplish the first goal, we applied a multimodal analytic framework that incorporates work from [Kress and Van Leeuwen \(2001\)](#), [Unsworth \(2003\)](#) and [Serafini \(2011a; 2011b\)](#). In order to accomplish the second goal, we have illustrated how two beginning teachers articulated their professional identities through digital stories. [Dewey \(1933\)](#) emphasizes the importance of reflection for teachers. The current study illustrates one promising route to promoting teacher reflection, showing how digital storytelling can help young teachers share emotions, become more self-reflective, and perhaps transform their professional identities ([Kocaman-Karoglu, 2016](#); [Tur, Challinor, & Marín, 2016](#)). This study fills a gap in the research literature on digital storytelling, offering a systematic analysis of how digital stories can help us more effectively prepare young educators.

5.1. Teachers' feelings and experience

As shown in previous research, the two teachers in the current study generally had positive attitudes towards the use of technology and digital storytelling, and they benefited from the process of creating their own digital stories ([Kearney, 2009](#)). They found digital storytelling to be an effective way to communicate complex messages, compared to traditional words and text. "I am a huge proponent of technology," Kara said; "I think that a picture or video is worth 1000 words."

This study describes the role digital stories can play in the development of young teachers' voices and self-confidence. Through personal reflection and the processing of important events, pre-service teacher Mark and first-year teacher Kara articulated their voices and built confidence that they could make a difference as educators. In addition, the sharing of their digital stories allowed them to communicate with larger audiences ([Kocaman-Karoglu, 2016](#)), and this communication also contributed to their professional development. The study suggests that teachers and students can develop confidence and articulate their voices through digital storytelling.

One challenge identified in previous research and experienced by both teachers in this study was the hard work required to create a consistent narrative using multimodal texts. They believed that digital stories are powerful tools, but they also found that it can be a demanding task for authors to tell a coherent story in only 3–5 min ([Skouge & Rao, 2009](#)). While both Kara and Mark were successful, they did need time and focused attention to tell their stories in a way that would connect to audiences.

5.2. Teachers' professional identity development

This study advances the field by documenting in detail how digital storytelling can facilitate prospective teachers' professional identity development. While previous studies have mainly focused on pre-service teachers, our cases illustrate differences between pre-service and first-year teachers. While pre-service teachers rely heavily on their previous personal experiences, beginning teachers face conflicts between their educational ideals and actual school practices, as well as the fear of being marginalized in professional settings and the conflicts between personal and professional positions (Bulut Albaba, 2017; Wenger, 1999).

The story creation process that we observed exemplifies the process of "transformative learning," as described by Skouge and Rao (2009). It began with Kara and Mark identifying meaningful experiences that shaped their professional beliefs and their sense of purpose as educators. This reflection reinforced the significance of their work. It also helped them develop a consistent multimodal presentation that could both serve as an "imagined version of the teaching self" and make sense to others (Skouge & Rao, 2009; Tendero, 2006, p. 175). As Mark described, the digital story process served as "a vessel for the exploration" and integration of personal desires and professional teaching. It is a process of hearing an internal voice and recognizing one's purpose in a teaching career. Kara articulated this when she explained that, through this process, she "realized how much [she] grew from student teacher to actual teacher."

Our study also showed that reflective sharing and communication after the completion of the digital story can be important to the development of teacher professional identity. Previous studies have described the importance of mentorship for early career teachers, as it serves to bridge the transition from pre-service to in-service teaching (Hellsten, Prytula, Ebanks, & Lai, 2009; Izadinia, 2015). Young teachers are able to network with professionals in a learning community, better prepare themselves for daily challenges, and become reflective practitioners (Michael, 2014). In this study both participants identified digital storytelling as a way of collecting feedback, both positive and negative, from classmates, colleagues, and supervisors. For Mark the comments did not come from senior professionals, but from his peers in class. This was nonetheless a valuable way for him to prepare for the real-life challenges to come. Kara and Mark were able to modify their own perceptions and reevaluate their professional identities, in response to others' reactions to their digital stories.

Thus this study shows how digital storytelling can facilitate the development of teacher professional identity by facilitating reflection and communication throughout the creation process. Digital storytelling projects enabled these beginning and preservice teachers to receive feedback from peers and mentors at school and fostered a process of reflection and identity development early in their careers.

5.3. A new analytical framework for digital storytelling

The analytic framework in this study, which built on and modified Unsworth's systemic functional approach and Serafini's ideological perspective, advances the field and provides a comprehensive tool for educators and researchers to analyze the semiotic elements in digital stories within social contexts (New London Group, 2000). By exploring the four dimensions in our analysis of digital stories, we have been able to explore layers of meaning in the stories and further investigate what and how Kara and Mark were communicating.

The four different perspectives each provide separable yet interrelated dimensions of the digital story. The title of Mark's video was "To Teach or Not to Teach: Conquering Stage Fright" (see Image 8), and it can serve as an example of these relationships. From the *compositional/textual* perspective, Mark places the text in the center of the screen and shows its importance by giving it maximum salience. From a *representational/ideational* perspective, we can see that Shakespeare is an important thread that represents the journey that Mark has been through in integrating his theatrical identity and professional teaching identity. When analyzing this slide from the *sociocultural/ideological* perspective, we can understand the deeper meaning of the connection Mark makes with Shakespeare's Hamlet. Hamlet's line "To be or not to be" represents an important choice made by Hamlet when facing his own destiny, and "To Teach or Not to Teach" foregrounds the personal choice that Mark made in choosing to become a teacher. In this way, the analytical framework proposed by the current study has the ability to reveal levels of meaning in digital stories (see Image 9).

By analyzing several *representational/ideational* components, which we categorized into interplay, scene, language, and background music, this study gained insight into the intentions and emotions in the stories. The structures of the two digital stories were similar, in



Image 8. The title of Mark's digital story.



Image 9. Actor vs. Teacher.

that both authors started with their own interests and expectations, then explained how these might conflict with traditional teaching duties and expectations. The main stories focused on finding ways to integrate the components and form a professional identity. Both authors described their experiences in chronological order with soothing and relaxing background music.

The *interpersonal/interactive* perspective is about the relationship between the viewer and the author, as well as other social types represented by characters in the story. Both stories incorporated photos of the authors from different distances and perspectives, with some more intimate than others. Unsworth (2002) describes only the relationship between the viewer and what is viewed. In order to understand interpersonal relations more deeply, we also analyzed relations between the author and participants in the study. For example, Mark started with stories from his childhood and talked about the influence theater had on different aspects of his life. In the end, he made a connection between his interests in theater and his professional interest in teaching. Kara, on the other hand, specifically focused on the curriculum unit she implemented in her class. She also described her relation with co-teachers, mentioning how collaboration was meaningful. She showed her pride toward her students and heartfelt emotion while describing them.

Although we did not do a detailed linguistic analysis, we have illustrated how choices about particular verbal and nonverbal signs communicated important messages (Eggins, 2004). The two teachers carefully selected words, images, and music to articulate themes and position themselves. For example, Kara invited the audience into the classroom by using images of the second graders' making direct eye contact. Mark used the pronoun "I" throughout the study, until the end when he used "you" to invite the audience into the end of his digital story. The teachers carefully chose pronouns to create distance or involvement at appropriate moments.

Both authors evoked many emotions in their digital stories, and they tried to convey feelings to the audience through, for example, voice-over and photos that created direct eye contact. However, the stories created different interpersonal relationships. In Kara's story, the key relationship was between herself and the students, whereas for Mark it was between the two identities within himself.

From the *compositional/textual perspective*, we explored how the authors distributed and conveyed information. Mark's digital story placed his own image in the center of the screen, showing that he was the focus, throughout the story. Mark also book-ended his digital story with a clip of him acting at 10 years old. This helped him narrate how he transitioned across his life and created connections across these developmental periods. In Kara's story, she used images of herself with her students, evoking a sense of a collaborative process with others. Kara also incorporated a short video of clip of second graders counting coins (cars) on the bridge, communicating the excitement of their learning – through the "yes" from one student and the direct gaze at the camera which invited the audience into the classroom (see Clip 2).

The *ideological perspective* extends the interpretation to include "sociocultural, historical, and political contexts of the production and reception of texts" (Serafini, 2015a, p. 414). This perspective looks beyond relationships within the multimodal texts and extends our interpretation to the background contexts behind elements of the story. In Mark's video, he showed how he integrated his theater identity into his teaching identity, as he realized teaching is also performing (Image 9) Kara said, when showing a picture with her all-male students (Image 10), "as a first-year, second grade teacher, I really want to make my impact." In the picture, Kara only takes up a small space on the screen, as she stands on the right side of the group. She implicitly positions herself as a female newcomer in this all-boys school, and yet she created her own lesson plan and successfully finished her project, receiving positive feedback from students, parents, and administrators. The current study has allowed us to expand our analysis beyond the digital storytelling itself and explore sociocultural issues related to teacher identity.

This study provides important insights into the productive use of digital storytelling in teacher education courses. For teacher educators, the study provides evidence that digital storytelling can help facilitate beginning teachers' reflection on their personal experiences and teaching practices. As Tur et al. (2016) have pointed out, feelings and personal beliefs about teaching influence the formation of teacher identity. The use of digital storytelling as a pedagogical tool in teacher education programs can incorporate and foster reflection on the feelings and beliefs of student teachers in a more multidimensional way than traditional teacher education. Furthermore, our analytical framework for digital stories that combines Unsworth (2001) and Serafini's (2015a) visual grammar can become a useful framework for researchers to interpret digital stories, as well as their connections with authors' personal experiences and social contexts. By themselves using this approach to digital story analysis, pre-service teachers can also refer to the framework when designing digital story curriculum and gain greater insight into the composition process.



Image 10. My class.

6. Conclusions

Digital storytelling can help beginning teachers develop their professional identities and gain positive feelings about their profession. The creation of digital stories moves from internal reflection to presentation and sharing. It is useful for pre-service teachers who may not yet have a clear sense of their professional identities, and beginning teachers who may experience identity conflicts, to have a reflection period prior to the actual creation of their projects. Using written reflection and peer conversation can help participants compose a consistent narrative that expresses their ideas and make it easier to create a coherent digital story.

The process of presentation and sharing is equally important in the formation and modification of teacher professional identity. Digital storytelling is a means of presentation not only to oneself but also to others. The creation process itself, along with the final product, are great opportunities for authors to share their values and communicate with peers, colleagues, supervisors, and parents. This communication process can not only help beginning teachers find their voice, but can also help pre-service teachers identify their passions as they grow. The presentation process helps build up teachers' confidence and sense of accomplishment. Feedback, even negative feedback, can help preservice and beginning teachers modify their teacher identities based on the comments from an audience and develop a more sophisticated position in the professional world.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.compedu.2020.104040>.

Credit author statement

Deoksoon Kim, Conceptualization, Methodology, Data curation, Investigation, Writing-Reviewing and Editing, Writing-Review & Editing, Supervision. Yinru Long, Investigation, Writing- Original draft preparation. Yi Zhao, Investigation, Writing- Original draft preparation. Shuyue Zhou, Investigation, Writing- Original draft preparation. Jeremy Alexander: Writing-Review & Editing.

References

- Beddoe, L. (2013). Health social work: Professional identity and knowledge. *Qualitative Social Work*, 12(1), 24–30. <https://doi.org/10.1177/1473325011415455>
- Boud, D., Keogh, R., & Walker, D. (1985). *What is reflection in learning. Reflection: Turning experience into learning*.
- Bulut Albaba, M. (2017). Teacher learning during transition from pre-service to novice EFL teacher: A longitudinal case study. *Novitas-Research on Youth and Language*, 11(2), 142–154.
- Davis, T. R., Sydnor, J., Daley, S., & Coggin, L. (2017). Purposeful tensions: Lessons learned from metaphors in teacher candidates' digital stories. *The Teacher Educator*, 52(4), 291–307.
- Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, New York: D.C. Heath and company [etc.].
- Eggs, S. (2004). *An introduction to systemic functional linguistics*. London: Continuum.
- Hellsten, L., Prytula, M., Ebanks, A., & Lai, H. (2009). Teacher induction: Exploring beginning teacher mentorship. *Canadian Journal of Education*, 32(4), 703–733.
- Izadinia, M. (2015). A closer look at the role of mentor teachers in shaping preservice teachers' professional identity. *Teaching and Teacher Education*, 52(C), 1–10.
- Kearney, M. (2009). Investigating digital storytelling and portfolios in teacher education. In *EdMedia+ innovate learning* (pp. 1987–1996). Association for the Advancement of Computing in Education (AACE).
- Kim, D., & Jia, F. (In press). "Ever wondered what Schizophrenia was?" Trilingual students' digital storytelling about mental disorders. *Journal of Curriculum Studies Research*.
- Kim, D., & Li, M. (2020). Digital storytelling: Multimodality, project reflection, and identity. *Journal of Computers in Education*. <https://doi.org/10.1007/s40692-020-00170-9>
- Kocaman-Karoglu, A. (2016). Personal voices in higher education: A digital storytelling experience for pre-service teachers. *Education and Information Technologies*, 21(5), 1153–1168.
- Kotluk, N., & Kocakaya, S. (2016). Researching and evaluating digital storytelling as a distance education tool in physics instruction: An application with pre-service physics teachers. *The Turkish Online Journal of Distance Education*, 17(1), 87–99.
- Kress, G. R., & Van Leeuwen, T. (1996). *Reading images: The grammar of visual design*. Psychology Press.
- Kress, G. R., & Van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of contemporary communication*. London: Arnold Publishers.
- Lambert, J. (2002). *Digital storytelling: Capturing lives, creating community*. Berkeley, CA: Digital Diner Press.

- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. London: Sage.
- Marín, V. I., Tur, G., & Challinor, J. (2018). An interdisciplinary approach to the development of professional identity through digital storytelling in health and social care and teacher education. *Social Work Education*, 37(3), 396–412.
- Merriam, S. B. (1998). In Revised and Expanded (Ed.), *Qualitative research and case study applications in education*. Sansome St, San Francisco, CA 94104: Jossey-Bass Publishers, 350.
- Michael, B. G. (2014). *Meeting the needs of beginning teachers: An exploratory case study of mentorship efficacy*. Doctoral dissertation. University of Phoenix.
- Miehls, D., & Moffatt, K. (2000). Constructing social work identity based on the reflexive self. *British Journal of Social Work*, 30(3), 339–348.
- New London Group. (2000). *Multiliteracies: Literacy learning and the design of social futures*.
- Reyes, C., & Brinegar, K. (2016). Lessons learned: Using the literacy histories of education students to foster empathy. *Teaching and Teacher Education*, 59, 327–337.
- Robin, B. (2006). The educational uses of digital storytelling. In *Society for information technology & teacher education international conference* (pp. 709–716). Association for the Advancement of Computing in Education (AACE).
- Robin, B. R. (2008). Digital storytelling: A powerful technology tool for the 21st century classroom. *Theory into practice*, 47(3), 220–228.
- Røkenes, F. M. (2016). Digital storytelling in teacher education: A meaningful way of integrating ICT in ESL teaching. *Acta Didactica Norge*, 10(2), 311–328.
- Rus, C. L., Tomşa, A. R., Rebeaga, O. L., & Apostol, L. (2013). Teachers' professional identity: A content analysis. *Procedia-Social and Behavioral Sciences*, 78, 315–319.
- Serafini, F. (2010). Reading multimodal texts: Perceptual, structural and ideological perspectives. *Children's Literature in Education*, 41, 85–104. <https://doi.org/10.1007/s10583-010-9100-5>
- Serafini, F. (2011a). Expanding perspectives for comprehending visual images in multimodal texts. *Journal of Adolescent & Adult Literacy*, 54(5), 342–350.
- Serafini, F. (2011b). Expanding the four resources model: Reading visual and multi-modal texts. *Pedagogies: International Journal*, 7(2), 150–164.
- Serafini, F. (2015a). Multimodal literacy: From theories to practices. *Language Arts*, 92(6), 412–423.
- Serafini, F. (2015b). Paths to interpretation: Developing students' interpretive repertoires. Retrieved from <https://pdfs.semanticscholar.org/0a40/a8133fc783c9a52f4a8dd63fecb1f82b901b.pdf?ga=2.167596599.869584093.1583522162-1179970567.1582494950>.
- Skouge, J. R., & Rao, K. (2009). Digital storytelling in teacher education: Creating transformations through narrative. *Educational Perspectives*, 42, 54–60.
- Starčič, A. I., Cotić, M., Solomonides, I., & Volk, M. (2016). Engaging preservice primary and preprimary school teachers in digital storytelling for the teaching and learning of mathematics. *British Journal of Educational Technology*, 47(1), 29–50.
- Starman, A. B. (2013). The case study as a type of qualitative research. *Journal of Contemporary Educational Studies*, 28–43.
- Steadman, A., Kayi-Aydar, H., & Vogel, S. M. (2018). From college composition to ESL: Negotiating professional identities, new understandings, and conflicting pedagogies. *System*, 76, 38–48. <https://doi.org/10.1016/j.system.2018.04.013>
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.
- Tendero, A. (2006). Facing versions of the self: The effects of digital storytelling on English education. *Contemporary Issues in Technology and Teacher Education*, 6(2), 174–194.
- Tur, G., Challinor, J., & Marín, V. I. (2016). Digital artefacts for reflection on identity in the first year of teacher education: the teacher I want to be. *Reflecting Education*, 10(1), 4–25.
- Unsworth, L. (2001). *Teaching multiliteracies across the curriculum: Changing contexts of text and image in classroom practice*. Buckingham: Open University.
- Unsworth, L. (2003). Rethinking research and practice related to CD-ROM narratives in classroom literacy learning: Articulating conventional and computer-based literacies. *Interpretation*, 36(1), 23–28.
- Unsworth, L., & Wheeler, J. (2002). Re-valuing the role of images in reviewing picture books. *Reading*, 36(2), 68–74.
- Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity*. New York, NY: Cambridge University Press.