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Researchers advocate for the need to utilize technologies that exist in our society and to model for students how to use them effectively for academic purposes so that students are prepared to be 21st-century learners (Cardullo, Zygouris-Coe, & Wilson, 2014; Leu et al., 2011). More specifically, Leu and colleagues (2011) assert that literacy is deictic due to the changing dynamic of how we communicate, and educators should rethink what it means to be literate and how we utilize technologies in the classroom. At the same time, concerns are expressed at the amount of screen time today's students experience (Margalit, 2016) which leaves teachers in a bit of a confusing position regarding how to use technology in their classrooms.

This article describes one approach orchestrated to integrate 21st-century literacy and language arts skills in a project incorporating technology. The week-long summer camp was marketed as a fun way for middle school students to become "movie makers," yet important literacy understandings were embedded and assessed to comprehend the knowledge of story elements the participants developed over the week. The project afforded the middle school students with an opportunity to explore different applications (apps), websites, and related equipment as they brought their own stories to life. As their final product, each student created an iMovie. Students had the opportunity to work independently or with a peer/group of peers to learn about, produce, create, and share a movie using *iMovie* software. Through the process, they created

scripts, backgrounds, and dynamic storylines as they incorporated literacy and technology principles. The process of creating an iMovie using various apps piqued students' interest in the project, yet the underlying need to apply learning of story elements (e.g., setting, scripting, and characterization) was the major goal of the project. More concisely, students were immersed in learning through mini lessons about literacy and technology throughout this engaging week-long workshop. The aim of the research, then, was to determine how the use of technology, multimodal experiences, and the utilization of iPads while creating an iMovie helped to cultivate students' understandings of how to incorporate all of these elements into a high-quality story.

The research question guiding this study was "How are middle school students' understandings of story elements cultivated through the creation of an iMovie project?" We employed a qualitative research design to collect data to answer this question (Patton, 2002) and used an exploratory approach to understand students' engagement and understanding of the literacy concept of story structure.

Related Literature

New Media Consortium (2005) describes literacy as a set of abilities and skills where aural, visual, and digital literacy overlap. These include: a) the ability to understand the power of images and sounds to recognize and use that power, b) to manipulate and transform digital media, c) to distribute them persuasively, and d) to easily adapt them to new forms. (p. 8)

This is especially important as educators consider students' "new media literacies," which are a set of cultural competencies that young people need to participate in the new media landscape. These competencies enable them to join our participatory culture where there is a reliance on creating and sharing one's creations and where there is a social connectedness (Jenkins, Purushotma, Weigel, Clinton, & Robinson, 2009). These skills can also be developed in the classroom using high-interest digital games and activities (Howell, Butler, & Reinking, 2017). Mobile devices, in particular, can focus the social, communicative, and collaborative aspects of learning experiences, and they can usefully complement contemporary pedagogical approaches like social constructivism (Cochrane & Bateman, 2010). Tablets such as iPads are perceived by students, teachers, and researchers as intrinsically engaging (Backer, 2010; Jones & Issroff, 2007), but evidence of improved learning outcomes is still limited.

With the increased use of technology, it is apparent that students' literacy involves more than one mode to create meaning. They need to also experience, represent, construct, create, and explore it without constraints. Students need to have experiences that are productive, multimodal, open-ended, pleasurable, and connected (Rowsell & Wohlwend, 2016). Hutchison, Woodward, and Colwell (2016) identified that, in recent years, students are using more digital tools in the classroom and are consumers of media, yet they are not adept at creating artifacts. Yet, when teachers strategically select practical, high-quality digital tools and pair them with meaningful reading and writing tasks, students build knowledge about literacy and with the associated digital tools (Fitzgerald, 2018).

Furthermore, when teachers integrate varying and multiple modalities into their classrooms, they are creating more inclusive classrooms (Capello & Hollingsworth, 2008). Composing in different modes engages students in learning content and develops their literary analysis skills (Dalton, 2012; Grisham & Wolsey, 2006), an important aptitude in navigating our global world. Similarly, by "remixing" traditional instruction with multimodal texts and new literacies, educators can foster active, engaged, and motivated learners (Lapp, Moss, & Rowsell, 2012).

Researchers have created a developing theory for educational technology in teaching, termed the *TPACK*, which goes beyond technological, pedagogical, and content knowledge (Mishra & Koehler, 2006). The framework overlaps the concepts for a more precise depiction of how to teach with technology. The theory redefines what it means to teach a particular content with knowledge of best teaching practices associated with that content and with knowledge of the best technological approaches to teach that content. The basic premise of this theory is to allow teachers and students opportunities to explore technologies in authentic contexts that enhance technology integration in classrooms and better prepares students for the 21st century. This framework has led to many practical implications for teachers, including Harris and Hofer's (2009) recommendations for curriculum-based technology integration. This framework serves as our guide for integrating technology with the intention of embedding literacy instruction. In conducting this study, we used the lens of the TPACK framework and its focus on authentic teaching using technological, pedagogical, and content knowledge seamlessly through instruction. We posit that student learning can be enhanced by focusing on the teaching and effective instruction needed to marry technology and content instruction. We aimed to understand the viability of integrating the technology associated with digital movie making into literacy instruction. Research has already demonstrated that students' understanding of communication and storytelling is enhanced by movie making (Lamas, Pender, & Keskpaik, 2015; Sun, Wang, & Liku, 2017). Since integrating technology into literacy curriculum

has positive learning outcomes when the emphasis is on transformative learning (e.g., problem solving and knowledge acquisition; see Cviko, McKenney, & Voogt, 2013; Linebarger & Vaala, 2010; Zheng, Warschauer, & Farkas, 2013), this research seeks to explore how using appropriate technologies to create an iMovie helps students grasp the use of literacy strategies and the elements necessary in telling a high-quality story as defined by the rubric.

Methodology

This study sought to understand middle school students' knowledge of story elements and how those understandings developed through the creation of their iMovies. A qualitative research design was utilized to collect data to answer that research question (Patton, 2002). The researchers presenting this work also served as the creators and facilitators of the summer camp. Both individuals are involved with literacy instruction—one as a course instructor for undergraduate literacy methods coursework and the other as an undergraduate preservice teacher entering her senior year of college.

Participants

All 15 participants selected for this study were from the group of students who participated in the week-long summer camp. The students explored various apps and websites through different lessons and activities during the camp. At the beginning of the week, the students were given an overview of the project and were presented with the digital tools available. Each student was provided with an iPad to use for the week with various apps for filming and editing loaded onto the devices. The non-exhaustive list of apps available to the students is found in Table 1. Students had an opportunity to explore all of the apps to decide which ones would provide them with the best features for their film.

Table 1

Apps for Summer Camp

App Categories	Apps
Organization/Activity Apps	*Lino It*
	Story Wheel
	QR Code Reader
	Puppet Pals
	Tellagami
	Celtz
Special Effects/Movie Making Apps	*Stop Motion*
	iMovie
	Extras for iMovie
	Action Movie FX
	Go Animate
	Directr
	SloPro
	Vizmato
Literacy Apps	*Writer's Hat*
	Story Patch
	StoryKit
	Storyjumper

Data Sources

Anecdotal records, artifact analysis, and a pre-/post-assessment were the methods of data collection used, which were consistent with the qualitative research design (Merriam, 2002). The data collection and analyses aimed to understand how the students' understandings of story elements were cultivated through their experiences and through their final creations. Anecdotal records and photos were taken during different classroom activities for which the students were using apps and websites. The researchers collected various work samples throughout the week and also used the students' final iMovies to analyze the students' understandings, using a researcher-created rubric. The researchers also used both a pre- and post-assessment to demonstrate any literacy understandings at the onset of the camp compared to their knowledge at the completion of the camp, looking for any possible growth.

Data Analysis

The researchers analyzed the data across multiple sources in an ongoing and systematic manner to identify categories and patterns of how the students' understandings of story elements developed through participation in the iMovie project. Data concerning the research question were triangulated from anecdotal records and through artifact analysis. Data analysis consisted of coding and categorizing according to Miles and Huberman's (1994) qualitative data analysis scheme. Student datasets were analyzed, and the results were compared to identify commonalities and differences. The two authors coded all data independently and highlighted patterns, and then they collaborated to check for validity. Descriptive statistics were used for the pre- and post-assessment items to analyze the students' responses and look for patterns in their understandings. The evidence was collected and analyzed to understand whether experiences with technology helped to shape students' conceptions of story elements.

Procedure

The summer camp took place over the course of one week during the summer of 2017. The week consisted of activities that prepared the middle school students for the creation of an iMovie demonstrating what they learned (Table 2).

The abridged agenda displays a brief overview of the week's activities. For instance, on the afternoon of the first day of the camp, one of the lessons focused on genre. After a brief period of teaching, the group contributed to a matrix located in GoogleDocs, brainstorming their ideas about different characteristics of genres. Students accessed short movie clips using QR codes and compared the movies to the characteristics outlined in the matrix. Clips from movies such as *Karate Kid*, *Back to the Future*, and *The Diary of Anne Frank* were presented to the students. Following this activity, students had an opportunity to go into their movie notebooks to record any ideas that resonated with them and to identify the genre they might want to pursue for their short films. The lesson focused on *theme* occurred on the second day during which popular songs were explored to discuss how a theme can be identified, again offering the students time to reflect about what theme they might want to consider.

Most of the lessons presented at the beginning of the week were related to story elements and the characteristics necessary to tell a good story; however, many of these lessons utilized technology with specific apps on the iPads. The technology-related lessons and exploration occurred throughout the week, but the specific lessons about filming, effects, and editing were conducted toward the middle of the week. It was important that the students knew what story they wanted to tell before they determined what effects and details they wanted to include in their movies. For instance, one of the later lessons included a detailed description of how to use *Action Movie FX*, an app designed to enable users to add action elements like an airplane crash, a tornado, or an alien intruder. Students were introduced to different apps that enabled them to create avatars, animated characters, explosions, and other film-making fun, which they could add to their movies. The time for each lesson or activity ranged from 20 minutes to an hour, simulating the time teachers might have in classrooms.

To assess the students, a pre-assessment was given to

Table 2

Agenda for the Week

Day of the Week	Agenda for the Week
Monday	Pre-assessment Introduce iPads and *iMovie* Introduce styles of films that can be created What makes a good story: discussion and read-aloud Genre discussion: Choose which genre to create Character study: traits, emotions, and actions
Tuesday	Characterization App introductions Setting discussion One Button Studio (green screen) practice Introduce and discuss filming angles Types of conflict: Choose which type of conflict to use Plot development Story boarding App exploration: Choose which apps to use Students begin to script; teacher conferences Group share
Wednesday	Students create a "To do" list Background information about film Scripting/Conferencing Field trip: *Wonder Woman* at the movie theatre Debrief about movie/story elements Filming/scripting
Thursday	Group share Filming Film editing
Friday	Post-assessment Film editing Video screening of all movies with parents

them on Monday to determine what they already knew about literacy and story elements. On Friday, students were asked to take the same assessment, which enabled us to see if there was any growth in the students' understandings. We also included two questions about the students' comfort and use of technology using a 7-point rating scale. A copy of the post-assessment is located in the Appendix. The goal was to ascertain whether there were any shifts occurring over the week, after the time spent exploring numerous apps and websites. Overall, the pre-/post-assessments helped us to understand the students' learning as well as their perceptions of technology used both inside and outside of school.

Students were offered a choice of what kind of film they wanted to create. They were all asked to at least use iMovie to thread the components of the 2- to 5-minute movies together because the software allowed students to create a title screen, transitions, add music/subtitles, and add credits. The students could create a regular iMovie, a stop motion film, or an animated film. Two of the students requested the opportunity to create a "Draw My Life" movie, a popular type of video on YouTube, where students use a whiteboard, marker, and photos/ images to illustrate their lives. Since the camp was designed around the opportunity to utilize an understanding of literacy elements, we obliged the two students. Whether the students were working independently or working with peers, many of the students utilized "friends" from the camp (whom they all just met that week) for live action filming or voice-over assistance. They were able to use their own creativity as they used stop motion, a green screen, 360-video, and other resources to tell a story worthy of sharing with an audience.

To determine how the students applied their understanding of story elements, we developed a 4-point analytic rubric to assess the quality and learning that was evident in the completed movies (see Table 3). The students participating in the camp never saw the rubric because this project was designed to be an opportunity to use their creativity, not to judge their skill. For this reason, all movies were assessed following the camp.

Table 3

4-point analytic rubric to assess the quality and learning of story elements.

Criterion	4	3	2	1
Content and Theme	Content is clearly relevant to story and theme; message is distinctly clear.	Content has some relevance to story and theme; message is clear with some confusing points.	Content has little relevance to story and theme; message is not clear.	Content has no relevance to story and theme; there is no message.
Story Conflict	There is an easily identifiable conflict that remains clear throughout the movie; the story conflict stays relevant.	There is an identifiable conflict although it may not be clear throughout the movie; stays fairly relevant.	Conflict has little relevance and does not make sense. Not completely clear throughout the movie; little to no relevance.	Conflict has no relevance and/or there is no conflict evident.
Plot Development	The story is very well organized with an evident beginning, middle, and end. There is a good rising action, climax, and falling action that helps add dimension and understanding to the plot.	The story is organized with a beginning, middle, and end. There is a rising action, climax, and falling action identifiable.	The story is not organized well, and it is difficult to follow. One or more of the following essential elements of plot development is/are not evident: rising action, climax, and falling action.	There is no clear plot nor sequential events that add to the understanding of the story.

Characters	The iMovie clearly depicts the characters and setting; the main characters have identifiable features and evolve or remain constant over the video (consistent with the storyline).	The iMovie depicts the characters and setting but may not be entirely clear; the main characters may not have identifiable features OR do not stay constant over the video.	The characters and setting are difficult to identify and the characters do not remain consistent over the course of the video.	The characters and setting are not identifiable.
Visual Elements of iMovie	There is clear evidence of different and multiple visual elements (including images, text, video, etc.). The use of visual elements is meaningful and presented in a cohesive manner, helping to support content.	There is evidence of visual elements, including images and/or text and video. The use of the visual elements is presented in a cohesive manner but does not consistently support the content.	There is evidence of only one kind of visual element. The visual elements may be presented in a way that is confusing or detracts from the story being told.	The presentation of the video, text, and/or images is confusing and is not understandable.
Audio (Music and Dialogue)	The dialogue is meaningful and helps add richness to the plot and theme. Music is consistent with mood and theme; consistency in presentation throughout.	The dialogue helps add to the plot and theme. Music may not be consistent with mood and theme; not a consistent presentation in audio elements.	There is limited use of auditory elements in iMovie; does not add to the understanding of the movie, mood, or the overall theme.	Any auditory elements detract from the mood, overall theme, and understanding of the iMovie.

Findings

Findings from the study revealed that the students not only learned about the steps for making an iMovie, they also (re)learned story elements and their role in telling a high-quality story. Using the analysis from the pre-/post-assessments, the notes from the week's activities, and the completed iMovies, the researchers discovered how the students' understandings and application of story elements were shaped through participation in a non-literacy focused task. The students generated important 21st-century understandings that they will inevitably be able to use in future projects and classes. The analysis from the pre-/post-assessments uncovered the "change" in understandings that occurred from the

start to finish of the week while providing participants an opportunity to have an experience that was productive, multimodal, open-ended, pleasurable, and connected (Rowsell & Wohlwend, 2016).

The pre-/post-assessments asked a wide range of questions, including one asking them to rate their comfort level with technology, and other open-ended questions asking them about specific story elements. For instance, one of the open-ended questions asked the students about their understanding of setting. Only four out of 15 students were able to generate any response that related to setting at the onset of the week. Using the post-assessment, it was determined that eight students

were able to correctly state terms like *time*, *place*, *when*, and *where* to identify setting. Similarly, only three students mentioned what makes a good character on the pre-assessment, using terms like *good personality* and *backstory*. By the end of the week, all 15 students mentioned some aspect of what makes a good character, and they used specific terms to describe them saying things like *round*, *dynamic*, *change over time*, and *needing a rich description*.

The pre-/post-assessments included a question asking students to identify the four types of conflict. On the pre-assessment, only three students were able to identify any types of conflict, but no one was able to name all four types. On the post-assessment, nine of the students named all four types of conflict. Finally, there was a question related to what contributes to plot development on both assessments. Most of the responses on the pre-assessment were either not related or broad, saying things like *characters*, *conflict*, and *climax*. The responses were dramatically enhanced in the post-assessment. For example, students used terms and phrases like *a strong beginning, middle, and end* and *rising action, falling action, climax, and resolution*. Figure 1 below demonstrates the shift from the students' understandings at the beginning of the week to the end of the week for each of the story elements. The chart shows the percentages of the students' correctly responding to the open-ended questions in the two assessments.
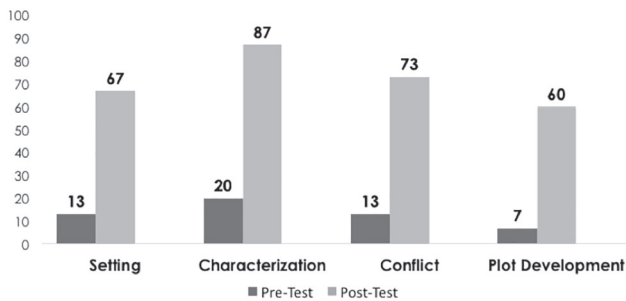

Figure 1. Percentage of students responding correctly to pre-/post-assessment questions about story elements.

Although activities and lessons were planned to address the story elements, we were careful to relate the information back to the students' movies, so they could authentically apply the information to their planned artifacts. The findings support other researchers' work who found that video creation is a meaningful way to engage students in learning because it combines technology with school-based reading and writing experiences (Lamas et al., 2015; Spires, Hervey, Morris, & Stelpflug, 2012; Sun et al., 2017).

The findings from the pre-assessment indicated that the majority of the students hoped to learn how to make a movie through the week-long camp. At the completion of the camp, the analysis of the post-assessment responses indicated that the majority of the students said what they enjoyed most was filming the iMovies. When asked what they believed to be the most valuable thing they learned over the week, the answers varied but included (1) how to make a stop motion/iMovie, (2) what makes a good character, (3) the parts of a good story, and (4) the importance of plot development.

One of the most significant responses was when the students were asked to identify whether they would want to do something like this in school. Every student except one responded that they would love to do something like this project in school. The only student who responded negatively said, "No, because the teachers would make it boring." This camp provided an opportunity for important literacy and technology learning to occur in a nontraditional environment over the summer, something that could be easily simulated in schools. Children learn best when they are active contributors who are engaged in a meaningful activity that is socially interactive (Chi, 2009).

When asked about the students' comfort in using technology outside of school, the mean score was a 5.21 on the pre-assessment and a 6.36 on the post-assessment (on a 7-point scale). All but three students' ratings increased from the beginning to the end of the camp, with the others' ratings merely staying constant. This indicates that the students felt (even a little) more comfortable using technology for personal use after completing the week-long summer camp. One of the

questions on the pre-assessment asked the students to rate their comfort level using technology and apps *in* school on a 1 to 7 rating scale. The mean score was a 5.0. The post-assessment revealed a mean score of 6.38. Figure 2 displays the differences in mean scores from the two assessments using technology inside and outside of school.
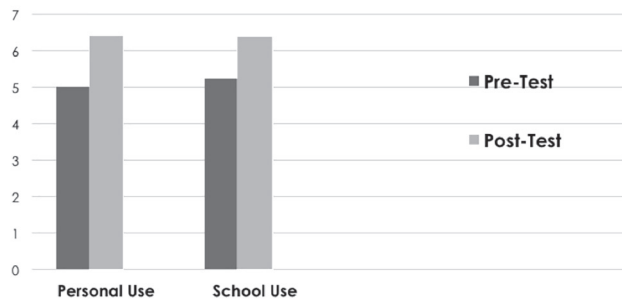

Figure 2. Student responses related to their comfort level using technology in and outside of school.

This comfort was shaped by experience in using iPads for filming, the apps used throughout the week, exploration of the One Button Studio green screen, and their proficiency with the editing programs. This experience allowed the students to use apps and other digital resources to create an artifact utilizing their literacy understandings, helping to contribute to the growing participatory culture (Jenkins et al., 2009).

Using the researcher-developed rubric, each of the students' iMovies was rated to understand the application of students' literacy learning throughout the week. Overall, the results revealed that the mean score of the 15 students was 21.75 (out of a total 24 points). A number of variables contributed to the mean. For instance, the students who created the "Draw My Life" movies received lower scores (i.e., 20/24) because the iMovies were lacking in story conflict and plot development since they were a type of autobiography. Another student group spent too much time working on their animations/student-created drawings and consequently did not have enough time to work on and enhance their script. The students' overall conflict was well portrayed but was missing a clear understanding of the content,

plot development, characters, and visual and audio elements. One of the stop motion movies scored a perfect 24 points for her demonstration of all story elements and digital effects. Another group of students created an action iMovie, which scored 23.5 out of 24. Overall, the students succeeded in creating movies using the literary elements (re)introduced to them throughout the week.

In the next section, we will show how the students' films demonstrated their learning from the week. Some of the learning included (1) how to use the effects of camera angles to enhance their movies, (2) how adding music enhances their plot and story line, (3) a (re) learning of the four types of conflict, and (4) how to develop well-constructed characters for the theme and plot.

The completed movies were a representation of the learning that took place throughout the week, illustrating their insight and understanding. They also demonstrated how combining traditional instruction with multimodal experiences can produce engaged learners capable of applying their learning, aligning with the work of other researchers who advocate how educators need to rethink instruction to help create motivated learners (Fitzgerald, 2018; Lapp et al., 2012).

Examples of Student iMovies

Although the researcher-created rubric was one way to measure the students' application of story elements, the analysis of the iMovies also demonstrated important exemplifications of their knowledge of both technology and literacy. We took screen shots of a few of the iMovies to illuminate some of those understandings. Figure 3 highlights one of the "Draw My Life" movies, which was adapted using images, photos, text, *and* illustrations. The figure is a screenshot from the student's film in which she filmed herself (using an iPad positioned above her head) taping photographs from self-identified important moments of her life into a blank scrapbook. She used editing software to speed up the video to match her voice-over describing how these life events shaped who she is as a person. Although it

was not the typical story we envisioned the students creating, this student was able to meaningfully tell *her* story by including a beginning, middle, and end. She constructed a script and used multiple "takes" to tell her story in a way that captured what she wanted the audience to know about her, her family, her friends, and her life.

Figure 3. Screenshot from a "Draw My Life" iMovie.

Her understanding of theme, characterization, visual elements, and audio features was demonstrated through her iMovie, and she received full credit on the rubric for those components. For instance, she demonstrated a clear message throughout the movie, and her "character" developed throughout the movie. What was lacking was her use of conflict and the development of plot (i.e., no rising or falling action); the autobiographical nature of her story hindered her ability to accurately include these elements.

Another student told his spy adventure using characterization and setting to exemplify what was happening. Since these were such short films, students needed to be creative to provide the detail and context for the audience to understand exactly what was occurring. In particular, this student used the map feature in *iMovie* to show the different destinations that his character was traveling to and from throughout the movie. Figure 4 shows one of the instances he used the map feature to tell his dynamic story, illustrating how the main character was travelling from Florida to Sydney, Australia, to attempt to capture the villain in the film.

Figure 4. Map feature in iMovie.

This student received an almost perfect score on the rubric because of his application of story elements. For example, he had an identifiable conflict that remained constant. This was an action/adventure film that began with a dialogue between Brandon Cross and the Director of the CIA asking him to seek out the villain Wallabee Jones to retrieve the secret launch codes Wallabee had stolen. The film included a fight scene with several henchmen, an airplane crash, and a climactic scene with the launch codes and back-up missiles. The characters had identifiable features that evolved throughout the movie. The map illustrated the way he was able to include appropriate visual elements to his iMovie, yet he executed many other instances of incorporating multimedia elements, including the use of a green screen and music that aligned with the theme of the short film.

Finally, one of the more unique iMovies was from a young artist who incorporated her own drawings into her film and modeled her movie from the children's show, *Blue's Clues*. Her final short film included both actors and her drawings (with voice-overs) to tell a vibrant story about animated animals. Figure 5 features a portion of her artistry in action. She effectively used music, an applause track, and the comprehensive development of her plot to bring her story to life. Her film began with a scene with her drawing in a scrapbook, and then her characters suddenly came to life. The mystery that needed to be solved through the use of "Ivan's Clues" was trying to uncover why Ivan left the world of animation. The clues led her to solve the mystery: Ivan wanted her to include his "habitat" and friends in her

scrapbook drawings. This humorous and creative story received the maximum points.

Figure 5. Animated animal element in an iMovie.

Although researchers have questioned whether evidence of learning outcomes can be demonstrated through technology integration (Backer, 2010; Jones & Issroff, 2007), this preliminary work illustrates that the students in this particular study made learning gains over the week-long camp. The students' understandings of story elements and what makes a high-quality story were exemplified through their completed iMovies. A major intent of the camp was to embed learning into fun activities through which students could produce an iMovie artifact. The analysis of the learning demonstrated through the student artifacts supported our goal of helping to add to the students' growing repertoires of literacy and 21st-century skills, consistent with the work of other researchers (Cviko et al., 2013) describing how integrating technology into literacy curriculum can have clear learning outcomes.

Discussion and Implications

To answer the initial research question, the middle school students' understandings of story elements were expanded and illustrated in creative ways through incorporating technology. The students (re)learned about (1) the importance of setting, (2) what makes a great character and how to create dynamic characters, (3) the four types of conflict, and (4) how to tell a high-quality story with a fully developed plot. Not only did they have an opportunity to utilize their previous understandings in meaningful ways, but they also learned how to incorporate appropriate technology and digital apps that helped to enhance their stories. They learned how to use a green screen, how to evaluate apps for different purposes, how to write a script, the basics of filming, and the basics of creating different types of films (i.e., stop motion and animation). Harris and Hofer (2009) recommend that teachers judiciously make deliberate decisions for educational technology use that helps to enhance content-focused learning. The combined understandings of literacy elements and technology helped to provide a solid foundation for the students to fully participate in the changing landscape of schools and the participatory culture (Jenkins et al., 2009) in which students can create and share digital artifacts.

The week gave the middle school students time to practice using different forms of multimedia and technology resources. They become participants by creating artifacts that were then shared on a private YouTube channel and disseminated to parents. The camp was created to embed literacy concepts in a fun, engaging environment using iPads and various apps. An important finding from this work is that this same kind of approach can be used in Kindergarten through 12th-grade classrooms, allowing students to produce and create digital artifacts through which they can demonstrate their proficiencies in literacy as well as in other content areas. Technology can be integrated into classrooms in a way that enriches learning experiences, gaining access to important 21st-century skills. This study demonstrates how the TPACK framework (Mishra & Koehler, 2006) can be put into practice, teaching literacy using knowledge of best teaching practices while meaningfully integrating technology. The goal of this work was to demonstrate how marrying best practices in language arts instruction with best practices in technology instruction helps students learn to apply their understanding of story elements in authentic and meaningful ways. The findings in this study illustrate how the three overlapping circles of a teacher's TPACK knowledge enhance teaching and learning in language arts. Students had the opportunity to apply their understanding of literacy devices while exploring technology in an authentic context to produce a brief, narrative iMovie.

This work is important to educators because it identifies a growing need for literacy to be entrenched in other content areas. The learning opportunities afforded by projects like these can be motivating (Lapp et al., 2012), inclusive (Capello & Hollingsworth, 2008), foster literacy learning (Fitzgerald, 2018), and transformative (Zheng et al., 2013). Our modes and resources related to instruction are changing for many reasons, but one of the more prominent reasons for change is the demand for increased technology in the classroom. Students can learn about story elements and how to create a high-quality video, and they are given the opportunity to demonstrate their growing knowledge of literacy understandings through technological approaches. This study merely presents one means of illustrating how we can add to students' developing literacy. By providing opportunities to explore mediums in authentic contexts, we are helping to prepare students for the 21st century.

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Author Biographies

Dr. Chrystine C. Mitchell is an Assistant Professor at York College of Pennsylvania, working with preservice teachers to help integrate best practices in literacy instruction and assessment. Her area of research and passion is embedding digital technologies in her coursework to help prepare future teachers for the changing landscape in schools. This project was an extension of that work. She can be reached at ccm19@psu.edu.

Nicole Hessler is currently a graduate student at Penn State University studying Social Education, working toward becoming an elementary teacher. As an undergraduate student, Nikki was heavily involved in the Education Department at Penn State, Berks Campus, helping to expand educational knowledge to her peers and gain experience that would help her in the classroom. Nikki has always loved working with young children to help them learn and grow. She can be reached at nikkihessler06@gmail.com.

Appendix: Post-Assessment

Name_____ Date_____

IMovie Camp: Before You Go

1. What was your favorite part of this camp?

2. What was the most valuable thing you learned over the week?

3. Please rate your comfort level using technology (e.g., computer, iPhone, iPad, tablet, etc.) for your personal use:

1	2	3	4	5	6	7
	least comfortable				most comfortable	

4. Please rate how you feel about how you have used technology and apps in this camp:

1	2	3	4	5	6	7
	boring experience				great/fun experience	

5. What do you think makes a good story?

6. What are the elements of setting?

7. What makes a good character?

8. Can you name the four types of conflict?

1. _____

2. _____

3. _____

4. _____

9. How would you describe plot development? As the storyteller and director, what did you NEED to include?

10. What were the genres you were considering for your iMovie?

11. If you were to do this camp again in the future, what should we know or do to be able to make it a better and more fulfilling experience?

12. Would you like to do something like this in school? Why or why not?

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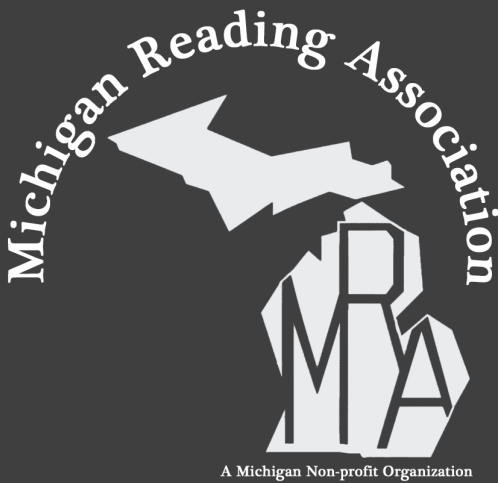
Michigan Reading Association

A Michigan Non-profit Organization

The Michigan Reading Association (MRA) is an organization of people who believe that literacy is the key to transforming people's lives. Chartered in 1956 by the International Reading Association, MRA has grown to be a leader in providing literacy resources to teachers, parents, and universities.

The mission of MRA is to promote literacy across the state of Michigan. Our association works toward this goal in several ways:

- We offer high quality professional development conferences for teachers, adult educators, administrators, and all those involved in literacy education. We also invite homeschoolers and parents to access the best in literacy profesional development.

- MRA's Michigan Reading Journal is one of the top research journals in the country and is available in both print and electronic formats.

- MRA works with local reading councils around the state to provide support and professional development to members in every region of the state.

- The organization supports international literacy efforts, such as TEACH: Teachers Educating and Creating Hope. This group is comprised of many Chaldean and some non-Chaldean teachers in the Detroit area interested in helping those displaced families with necessities and schooling needs.

- MRA puts on two conferences a year. Our Annual Conference in March brings in 1600 conferees, 150 speakers, and 100 exhibitors from across the state and country. With over 30 breakout sessions every session slot, there is always something for everyone. Our Summer Literature Conference in July offers a chance to interact with authors and illustrators more closely in a beautiful summer venue.

Membership Information

Regular Membership - $35

Retired Membership - $20

Full-time Undergraduate Student Membership - $15

As part of your membership, receive discounts to both MRA conferences.

To sign up, go to www.michiganreading.org

As a Michigan non-profit 501(c)3, we are governed by a board of volunteers who work tirelessly to promote the cause of literacy throughout the state of Michigan.