'Tech FTW!!!' Ninth Graders, Romeo and Juliet, *and Digital Technologies*

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Abstract

This article describes an action research study in which ninth graders composed digital responses to their study of Shakespeare's *Romeo and Juliet*. Their collaborative digital projects included e-zines, presentations, digital videos and photostories. Although meeting face to face in and outside of class, the students also used Ning (a social networking site) to share their products and to communicate about them throughout the unit. The paper will focus on what their communications reveal about the students' participation and understanding during the composing process, including thinking, representing, actively engaged, creating, knowing, and social - summed up in the acronym TRACKS.

Technology integration to enhance learning in K-12 schools and university education programs has been advocated for some time now; for example, The International Society for Technology in Education (ISTE) was founded in 1979 as an "association for educators and education leaders engaged in improving learning and teaching by advancing the effective use of technology in PK–12 and teacher education" (ISTE, 2012, para. 1). Both teachers and preservice teachers are deemed to need experiences with digital technologies to ensure technical and pedagogical knowledge (Harris, Mishra, & Koehler, 2009; Rowley, Dysard, & Arnold, 2005; Wiske, Franz, & Breit, 2005), particularly at a time when technological literacy's connections with 21st century learning are being emphasized (Lowther, Inan, & Ross, 2012; Prensky, 2012;). In Canada, C21 Canadians for 21st Century Learning and Innovation argue "ICT-rich learning environments are prerequisite to 21st century models of learning" (C21, 2012, p. 6). This context provided the motivation and theoretical background for a collaborative research initiative between an intermediate schoolteacher and a university researcher (the author, hereafter "I"). The teacher wanted to increase the use of digital technologies as composition and representation tools in her Shakespeare study. I wanted to provide preservice teachers with opportunities to interact with intermediate students as they experienced technology integration in their English Language Arts program, and to observe the use of a social networking site as a collaborative learning space. We would all have opportunities to examine "how best to teach and learn literacy by capitalizing on young people's literate practices" (McClay, 2006, p. 183). As classroom inquirers, both the teacher and I wondered what would happen when we offered our students the Ning social networking site as a space for collaborative group planning and interaction. The spontaneous posting by one young man, "Tech FTW!!!" (Technology for the Win!), summarized for me the ninth graders' reaction to the Ning social networking site and the opportunity to use

digital technologies in ways they devised themselves, within the very open parameters of the assignment.

Methodology and Conceptual Frameworks

Action research takes many forms, including teacher or classroom inquiry (Cochran-Smith & Lytle, 1993; Dana & Yendol-Silva, 2003), participatory action research/PAR (Cammarota & Romero, 2010), youth participatory action research/Y-PAR (Irizarry, 2009), and what might be called educational action research in which university researchers partner with teachers in a form of professional development (Newton & Burgess, 2008; Noffke, 1997; Parsons, McRae, & Taylor, 2006). Criticisms of this form of action research point to its possible top-down nature rather than empowerment (Anderson, Herr, & Nihlen, 1994). Nonetheless, collaborative research between teachers and their university counterparts, with negotiation of roles and relationship ongoing and responsive to changing contexts, as in our case, can be a very productive enterprise (Bello, 2006; McClay, 2006).

The action research collaboration described in this article took place in spring 2009, and was repeated in 2010. As is often the case with action research, our study was constantly shifting to fit the changing circumstances of both partners. What began as a plan with both the teacher and I as collaborating teacher researchers (Cochran-Smith & Lytle, 1999) gradually changed to a context in which I facilitated the technology introduction in the teacher's classroom and carried out most of the research activities. In our collaboration, the teacher hoped to learn what happened when she incorporated digital technologies in her English class; I hoped to involve the preservice teachers in my six-week spring 2009 education course *Writing in Intermediate and Secondary School* (nineteen students) as online mentors to the 9th graders (53 students in two classes), using the social networking site Ning as their site of social interaction. My action research plan was to study my efforts to provide preservice teachers with opportunities to experience technology integration in literacy teaching and learning and thus develop technological pedagogical and content knowledge (TPACK) (Mishra & Koehler, 2006). Mishra and Koelher (2003) argue that preservice teachers should develop knowledge of the inter-relationship among these knowledge sets and, in particular, learn to become designers of educational technology experiences for their students, effectively integrating digital technologies to solve pedagogical challenges. Both the teacher and I were cognizant of the iterative action research cycle: plan, act, observe, reflect, plan, act, and so on (Alberta Teachers Association, 2000); we implemented its overlapping components, using field notes and students' Ning postings as our data. As in the case of this article, I have subsequently used these data, particularly the archived Ning postings, to inform understanding of youths' new literacies in school.

In our action plan in 2009, two preservice teachers were randomly assigned to each group of five or six Grade 9 students, which the teacher selected for diversity of strengths and optimal involvement of all students. Preservice teachers' time and coursework pressures and difficulties establishing relationships through asynchronous online contact resulted in less than optimal mentoring in most cases, although a few interactions were beneficial to both mentors and mentees. In successful cases the preservice teachers prompted the ninth graders to brainstorm project ideas, affirmed their plans, provided ideas, and generally encouraged their group. Informed consent was a research issue as the preservice teachers neglected to take consent forms to the agreed-upon third party for safe-keeping until they

were released to me, the researcher, after the grades for the course were submitted. This left me with consent for the online postings of only seven education students. Several researchers have commented on the "messiness" of action research, noting that often such research does not go as planned (Cook, 2009; Dentith,Measor, & O"Malley, 2009; Guishard, 2009).

In spite of such issues, the English teacher and I worked together to explore our over-arching research question: How do digital technologies enhance English language arts teaching and learning? We agreed on several theoretical frames for our collaboration. We were interested in engaging students in new literacies learning, meaning that we would take advantage of Web 2.0 technologies and resources, that we would introduce the students to a participatory culture, that we would encourage multimodality and multiliteracies, and that there would be a distributive sense of knowledge incorporated in the endeavour. This latter idea, included in Knobel and Lankshear's (2007) description of new literacies, suggests that the teacher is not the only expert in the classroom; students construct knowledge collaboratively, share knowledge with their classmates, and, perhaps, with a wider audience through the Internet. Students also demonstrate their expertise with technology and of popular culture.

The teacher and I were also interested in twenty-first century learning (Metiri Group, 2011; Partnership for 21st Century Skills, 2011), focusing as it does (in part) on the four Cs: communication, creativity, collaboration, and critical thinking. The popular 21st century skills models incorporate development of technological skills, life and career skills, and content knowledge. These goals for learning coincide with local curriculum, such as essential graduation learnings, which include aesthetic expression, problem solving, technological competence, and communication (Atlantic Provinces Education Foundation, n. d.), and the ten general curriculum outcomes for English Language Arts (Government of Newfoundland and Labrador, 2012).

Multiliteracies (New London Group, 1996) and multimodal theory (Kress & van Leeuwen, 2001) also informed our study. Digital technologies support multiple modes of representation, with compositions combining words (linguistic mode), sounds (aural mode), images (visual mode), space (spatial mode), and movement (gestural mode) being easily created. Texts composed or designed in multiple modes or meaning-making systems (linguistic, aural, visual, gestural, and spatial) require multiliteracies as readers and writers interpret, enjoy, critique, and create complex multimodal texts. Multiliteracies theory (New London Group, 1996) suggests that we should "… broaden [our] understanding of literacy and literacy teaching and learning to include negotiating a multiplicity of discourses" (p. 61). Coiro, Knobel, Lankshear, & Leu (2008) note that interactive, non-linear, dynamic, visual, and mobile features are now common in digitally-enabled communication. Our students are expected to engage in "writing and representing," – thus multimodal composing (Government of Newfoundland and Labrador, 2012, p. 27).

As much as my teaching schedule would allow, I visited the ninth grade classroom and assisted the teacher and students as they explored various digital technologies (e.g., Photostory 3, iMovie, automated PowerPoint, Xtranormal) to represent their knowledge of Shakespeare's *Romeo and Juliet*, which they had just finished reading and studying. The teacher facilitated content and group process aspects of the project. She set the parameters of the assignment (project), determining that each group would create and display a multimodal

project, and that each student would be responsible for writing at least one blog entry about the project, reflecting on the process and/or the final product. As well, she encouraged group members to use their group space on the Ning site to share ideas and potentially-useful images and songs they found on the Internet, to provide texts for intertextual consideration and thus enhance their understanding of the play's themes and characters and to incorporate in their digital projects.

Consenting student participants (both ninth graders and preservice teachers) agreed to give us access to their Ning postings as the primary data for the study. This article describes the results of analysis of data retrieved from the Ning site. I met with the teacher to discuss findings during summer 2009 and following months, but personal circumstances prevented her from continuing an active researcher role. However, she did confirm my interpretations and further contextualized students' postings based on her knowledge of the students and classroom events. We repeated this process in spring 2010, though this time we did not involve preservice teachers as online mentors. The teacher retired at the end of that school year.

My analysis of the Ning postings for this paper focused on the question: What do students say about their digital work? Secondly, I asked: How do students view the creative process? What evidence do we have of students' involvement in the fours Cs (communication, creativity, collaboration and critical thinking) and of content learning? The data in this study consisted of Ning postings in two successive years, each year involving two classes of 9th graders. Informed parental and student consents allowed us to archive the digital data in the Ning site by copying all postings (those subject to informed consent) to word processing documents for analysis. I subsequently organized data into sub-documents along thematic lines (categories). Codes included knowledge of the play, technology, group work, intertextual connections, as well as additional themes discussed below.

Using the Ning site

The *Romeo and Juliet* study in both years came toward the end of the school year. For just over four weeks the students worked quite independently, in their groups and individually, on their digital products, using the Ning site for communicating within and between groups, as well as for casual conversation. The latter personal communications took place mostly on the 'wall,' a space for status updates and responses. During the unit each student was expected to do at least one blog posting about the play, his or her group's digital project, or his or her learning. Computers were available and well used in the classroom before and after school and at recess and lunchtime, during scheduled computer lab time, and at home (personal or family computers).

Ning, at the time a free Web 2.0 resource, is a social networking site with privacy options managed by the user, who invites members through conventional email. Its features (see Figure 1) included blogs; individual member pages with profile, avatar (self representation), and a 'wall' for status updates and friends' comments; an open forum discussion board with threaded postings; group spaces with restricted membership for threaded discussion; photo gallery (slideshow of all images posted to the Ning site); video gallery of posted and downloaded videos, real time chat; on-site e-mail capability; and events calendar. Potential management functions included approval (censoring) of postings, a function the teacher and I did not choose to use, and overall site design (appearance)

potential. Data used in this analysis were posted to a variety of sections of the Ning site: walls, forum, blogs, and group threaded discussions. Each member had a profile page that included a replaceable image or avatar, a wall for social interaction, a link to email within the site, and a display of recent postings throughout the site. The member page could be redesigned or the original design selected by the site creator could be retained on the member page. Because the site did not charge a fee at the time of this use, advertizing was displayed in one section of the screen. The students seemed able to ignore and not attend to these ads. We heard or read no discussion of them at all.

Figure 1. Ning homepage for project. This image describes the affordances and layout of our Ning screen.

A threaded conversation

To give readers a sense of data in their posted form, I am displaying a threaded conversation, copied from the Ning forum. I have assigned pseudonyms to the students, but I have left their postings intact.[1] I should note that conversations such as these were not assigned; they arose spontaneously throughout the project, written, as can be observed, any

[1] Permission was granted in writing by both the students themselves and their parents/caregivers for the researcher to archive and publish students' work. Pseudonyms are used to identify students' comments throughout this paper.

time of the day or night, during school hours or at home. The posting begins with the student's title, followed by the name of the author and the time of writing, the posting, and then the response postings (comments) by classmates in either of the two Grade 9 classes.

Posted by Catherine on June 4, 2009 at 9:07am.

Subject: compared to reading the play

> *This project is allowing us to use so many aspects of the digital world to recreate Rome and Juliet. Its so cool how many things can be compared and related to.Music especially! so many songs can be realated to love and loss. There are some really cool ideas people have for their projects. I'm really impressed by the black and white photography project, its really intelligent the way they thought about the tones of the play and other expressions of the play (i.e movies, old and new). I've looked at some of their pictures and they are so well thought out, I've found so much hidden meaning in them. I really like this project because i get to see how other people think and learn more about my thinking. Representing Romeo and Juliet in other forms is hard, but creative and fun. Even though reading the play was fun in itself, being able to play and manipulte it using technologie that we know best really helped me understand the play more.*

Comment by Jacob on June 4, 2009 at 9:08am

> *TECH FTW!!!*

Comment by Jacob on June 4, 2009 at 9:13am

> *I agree. I also think we should have a much larger oppurtunity to do these kinds of projects in school, they're so much fun! you get to connect thoughts with so many other people, and get closer to your friends.*

Comment by Catherine on June 4, 2009 at 9:25am

> *agreeed ! we are so familiar with the computer too, so its good to use what we know best to put together digital projects, i find they are alot more creative with the technological world.*

Comment by Carl on June 4, 2009 at 9:27am

> *I agree also in this day in age we basically teach our parents, teachers and other older people how to use computers and we use them every day. Why not use it for projects like this ? We can relate and use this more because we use computers and technologies every day we don't wright essay's everyday :P*

Comment by Anne on June 4, 2009 at 10:12am

> *I completely agree with jacob...we should be allowed to do more projects like this in school, considering we live in a world that practically depends on technology.*

Findings and Interpretations

There are many points to note and theorize in the above conversation; here are a few themes that will form the basis of this article:

1. Students' language register and inattention to conventions of spelling and grammar;
2. Students' interest in popular cultural texts and their relation to the play;
3. Students' thoughts on using digital technologies in schools and on the digital divide between in-school and out-of-school communication and writing;
4. Students' ability to analyze and comment on one another's digital projects and postings;
5. Students' metacognitive understanding of their own thinking and learning processes, including creativity.

The richness of the data collected in this project is illustrated in the extended quotation "compared to reading the play" above from the Ning site. Students were thoughtful and sophisticated in their comments on their learning and composing processes. They demonstrate the constructivist possibilities of the digital space, building on each other's ideas and contributing new points as they construct an understanding of the play and of their learning and schooling. In the next section of this paper, I will discuss the points noted, contextualizing and supplementing them with references to and quotations from other postings archived in this research.

Internet Language: 'Cool with the Tool'

As is common in digital communication, rules and conventions of writing are not important to the communicators in this threaded conversation (Crystal, 2005). Although this is not a synchronous chat environment, the students have applied the conventions of instant messaging or texting, in that they responded quickly and did not correct typos or other errors as they normally would do in assignments for their English teacher, who described her students as mostly capable of writing without errors. Throughout the digital site they used emoticons like :D (laughing) and :P (tongue hanging out) to indicate their appreciation of one another's composition or comment.

Theory of new literacies incorporates new linguistic conventions to suit the demands of both social practices and new digital devices (Street, 1998). Screen size, on-the-go communication, software word limits, data costs, time, and even the desire for informality (asserting an out-of-school identity) give rise to new orthographic, lexical, graphic, grammatical and discourse features of Internet language, which Crystal (2005) argues "foster…new kinds of creativity through language" and "increas[e] language's expressive range at the informal end of the spectrum" (p. 2). Crystal acknowledges that educators have the task of explaining the "fresh relationship between nonstandard and Standard English" (p. 2), but asserts that blogs, for example, may benefit from and evolve within the "creative energy" (p. 3) of the digital space.

Researchers Plester, Wood, and Bell (2008) argue that there is "no compelling evidence that texting damages Standard English in preteens, and considerable evidence that facility with text language is associated with higher achievement in school literacy measures" (p. 143). There is also evidence that "teens have eagerly embraced [digital] written communication with their peers" (Lenhart, Arafeh, Smith, & Macgill, 2008, p. ii). In addition, educators might remember that "the medium is the message" (McLuhan, 1964, p.

7), shaping the meaning made with it and of it. In the case of the threaded discussion displayed above, the "netspeak" (Crystal, 2001, p. 17) or "digitalk" (Turner, 2010) used by the students reflects the conversational style of the medium, the friendly relationship among the students, the informality of this stage of the project, and individuals' desire to be 'cool' with the technology. As Crystal (2001) notes, "the utterances display much of the urgency and energetic force which is characteristic of face-to-face conversation" (p. 32).

With many different spaces for writing in most online social networking and learning sites, teachers and students may concur on the degree of formality and correctness expected in each, keeping in mind the discourses and practices associated with particular technologies, purposes and audiences. My sense is that 'walls' (the personal space for status updates and friends' postings) and threaded discussions (like the one above used for group planning, learning and collaborating) benefit from the informality and lack of rules. The conversation was energetic, spontaneous, and learning focused – thus not to be discouraged. Crossing that divide between in-school and out-of-school literacies means compromises in the cultural practices of each; I hope the following arguments will illustrate the importance of such give and take.

Connecting with Popular Culture

Teachers of English Language Arts are often urged, especially when teaching the classics, to 'make it relevant.' It is interesting to note that the ninth graders liked *Romeo and Juliet* as a play. Catherine said: "reading the play was fun in itself." Carl shared: "The line that the prince said 'we are a slave to patience' that just kind of stuck in my head and i don't know if thats exactly what he said." Comments about enjoying and being affected by the play were common in the Ning site.

Students also noted the play's relevance to their lives and to the media culture in which they immerse themselves. In the data conversation reproduced above, Catherine noted: "so many songs can be realated to love and loss." Blogs from the 2010 classes also showed they listened to (and read) song lyrics attentively during the unit, as the following conversation reveals. Barbara commented on Bridget's video and posting, Michael Jackson: I Just Can't Stop Loving You (with lyrics): "I love this song! I am so glad we are using it for our project! It fits Romeo and Juliet so well!" Barbara replied, "Yes I know, the lyrics go great with the story of Romeo and Juliet, the song may be one of the most suitting that I have ever heard!"

In the 2009 class, Lalia posted several blogs on the similarities she noted between popular films and the play. She wrote her lengthy comparisons about *Pocahantas*, Casanova (Romeo), and *New Moon* (the novel). A classmate responded with a comparison with *Sweeney Todd*. In the 2010 class, one group created the digital movie *Romeo & Juliet vs Edward & Bella*, writing "This is our final product. To show our understanding of the play, we used the theme of Twilight. It worked very well and we didn't have any trouble finding pictures. We hope you like it!"

Several groups each year used images and songs to create digital movies retelling the *Romeo and Juliet* story. Examples included Tarzan, Calgary-Edmonton hockey rivalry, comics, and manga style. Charles explained the thinking behind his groups' digital movie:

> "Using superhero characters such as, Batman and Robin, Spiderman and Superman, we have attempted to present a theme of vengance and revenge that will appeal to younger audiences. We wanted to be unique with our format and show that the topic of Romeo and Juliet is not only comprehendable for teens but for younger generations as well. We are currently debating on our music choices and how we will make our theme of vengance and revenge clear."

Making these sorts of intertextual connections (Romano, 2000) between current popular media and *Romeo and Juliet* meant not only that the students revisited and carefully considered Shakespeare's play but also that they critiqued popular culture. Lalia, who made the Romeo-Casanova comparison, wanted to make the point that "Everything Was Romeo's Fault!!!!!!!!!" She makes her case in 961 words that include an analysis of the story and the ways Romeo is like Casanova - "Great on the outside, and seems sweet, but on the inside he's a (word I'm not gonna say on a school project website)!!!!!!!!!!!"

Another student, Candice, made the comparison of *Romeo and Juliet* to *Sweeney Todd*: "I believe that Sweeney Todd is so much like Romeo and Juliet. There are lots of parts & characters in the movie Sweeney Todd that remind me of Romeo and Juliet." Halley responded: "Wow! It's so true how Sweeney Todd and Romeo and Juliet are alike. I never saw that before. But the fact that the characters, events and a lot of other things are freakishly alike is really odd." Later she realizes, "I secretly think that Sweeney Todd was based a little on Romeo and Juliet." There were seven responses to the blog posting about similarities between the two, with Carl contributing: "I've never seen Sweeney Todd before but i find it great how you related this to Romeo and Juliet and that even the characters are similar to some of the characters in Romeo and Juliet, maybe Sweeney Todd was partially based on Romeo and Juliet?"

I find it interesting that the students are making meaning about the play and Shakespeare's perennial influence on writers who follow after. Teachers and textbooks can make such comments, but through these conversations students are drawing their own conclusions and coming to their own understandings. The students also connected with popular culture as producers and designers as well as readers/consumers. They drew from popular media to create their digital products, searching the Internet for images, music, songs, themes, and stories to compose their texts. In this sense, they use available designs and meanings "to construct new meanings and representations of the world" (Black, 2009-10, p. 76).

Advocates of 21st century skills include media literacy as an important skill, noting learners should analyze media and create media products to:

- "Understand both how and why media messages are constructed, and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media
- Understand and utilize the most appropriate media creation tools, characteristics and conventions

- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments." (Partnership for 21st Century Skills, 2011, Media Literacy, section 349)

In this unit, students were given opportunities to accomplish these outcomes without formal teacher guidance, and we note students themselves initiated exploration of media literacy along these lines.

Several comments indicate that viewing will not entirely replace reading for adolescents: James writes: "I think this is great! You guys are giving me hope that students will continue to read and ENJOY reading. Movies are great, but books have that extra something." Jack notes, in a different conversation, "I always find that books are more descriptive than movies, so then the books are more interessting than the movie." Anne observes, "i think that movies are fun, but when you are in a creative mood, you should read! beacuase when you read, you can make up and picture most of the detail yourself and in your own creative way. movies kind of ruin that aspect for me, think of Harry Potter." Again, the conversation, carried out over several days, illustrates the importance of opportunities for free-wheeling discussion on the Ning site. Challenging common beliefs about reading practices, especially among adolescent boys, the ninth graders unintentionally contributed to a classroom culture of reading alongside the media-dominated culture that we expect them to enjoy.

Technology in School and Out

Many of the blog postings and group discussion threads addressed relationships with technology in general and sometimes frustrations with school computers and unfamiliar digital software. A comment about another group's project by Jayne is revelatory of the computer situation in the school: "Haha , nice guys .. :P I am not sure if it has music, i wouldnt know because i am on a school computer with no sound :P But its AWESOME =)

Despite our expectation that ninth grade students are all digital natives, many students expressed their lack of computer skills. Jayne explained: "I found this project especially difficult because I am pretty much technology anept. In saying this, I would also like to say that my group worked very well together and we all put alot of effort into making our project the best it could be!"

Sometimes the end result was not perfect, as several postings revealed, and this conversation illustrates:

Camilla responds to a group project: "haha i know! Sadly I couldn't open yours because it wouldn't work! :'(Hopefully my computer will actually open it sometime because knowing you guys your project is awesome! :D" And Bridget responds, "hahahaha thanks!! A lot of people couldn't open it so it's not your computer:p"

The technology teacher-expert in the school, and the teacher and I were sometimes able to help students troubleshoot technical glitches in their digital compositions. Importantly, the students learned to troubleshoot for themselves outside of school times and to help one another, sharing expertise so that, in the end, most projects were successfully displayed in the Ning site.

Others expressed their ease with computer technology; Carl said:

> "I agree also in this day in age we basically teach our parents, teachers and other older people how to use computers and we use them every day. Why not use it for

projects like this ? We can relate and use this more because we use computers and technologies every day we don't wright essay's everyday :P"

Catherine argued that creating digital projects helped with understandings of the play: "being able to play and manipulte it using technologie that we know best really helped me understand the play more."

Arlene similarly noted:

"This project in my opinion, was much better then a regular paper and glue project in the long run. Anyone that knows me, knows that i am most definatly not good with technology! This project has helped in so many different ways, the way that mrs.B and the people at mun came up with this unique way of learning about the play and technology at the same time, is very clever to me. I have to admit that i got very frustrated at times, i also wondered why we use technology at all? A backboard and crayons seems so much more simple, and then i realized that the point of this project was not to be simple but to learn new things and figure things out, pretty much on our own."

Whether or not adolescents are adept with a wide variety of digital technologies, a myriad of experts and scholarly organizations argue that ICTs must have a place in curriculum and departments of education mandate its inclusion (Council of Education Ministers, Canada, 2000; Australian Council for Computers in Education, 2011; U. S. Department of Education, 2010). Schools, like the one attended by these students, are pleased to support integration of digital technologies, recognizing the importance of knowledge of ICT in students' futures and the value of ICT in supporting teaching and learning. In the end, the students acquired the knowledge and skills to compose and display a multimodal digital text – a video, a digital movie, a slide show with audio, or an e-zine.

Interacting and Responding Digitally

An advantage of blogs and other social networking sites is peer response or feedback and other forms of interactivity, and thus a learning space in educational settings (Williams & Jacobs, 2004). Blogs offer opportunities for reflection, collaboration, voice, empowerment, analysis, interpretation, and information sharing (Oravec, 2002; Williams & Jacobs, 2004). In the teaching unit described in this action research report, students voluntarily wrote blog entries and responded to one another's blogs, which covered a wide range of topics, including those already discussed in this paper: similarities of movies to Romeo and Juliet, reading, technological abilities, the digital projects, and the digital unit as a whole. In addition, students wrote blogs about working in groups and about blogging as an activity.

One of the activities the teacher encouraged was to view one another's digital projects and to comment on them in the Ning site, where remarks could be posted on walls, as blogs, and in the threaded discussion forum. The comments were encouraging, and very importantly, helped build community within the classes, both within and between groups. This list of short comments provides a sense of the interaction:

- "Hey! I love your guys idea of the Townies vs. Baymans!! That is so funny! I can't wait to see it!"
- "Your project is hilarious I loved it!!"
- "You guys did an AMAZING job!!"

- "I really like this idea as well. Having the players wear masks is excellent and the paintball idea really modernizes the story [of *Romeo and Juliet*]."

Some of the comments were longer. Catherine, as quoted above, said: "There are some really cool ideas people have for their projects. I'm really impressed by the black and white photography project, its really intelligent the way they thought about the tones of the play and other expressions of the play." Hers was one of many comments that demonstrated appreciation and understanding of classmates' compositions.

Another example of a longer reflective comment on another group's project was posted by Janine, who wrote:

> "Hey people! Watched your video and I thought that the music in combination with the pictures worked well. Its great that you already used a rivalry 'feeling' to bring the characters from Romeo and Juliet alive. It must have also been hard to find hockey pictures where people are 'showing the love.' You picked a hard topic but in the end really came through! Good job!"

The responses demonstrate analysis of the projects, reflection on composing processes, appeal to interests and real world activities, the kinds of resources available or not easily accessed, and application of concepts learned in English class. The next section of this paper will provide further discussion on how learning was achieved and demonstrated in the Ning site.

Discussion: Thinking and Learning

As noted in the introduction to this paper, the 4 Cs of 21st century skills—creativity, collaboration, communication and critical thinking—are outcomes important in contemporary classrooms. This paper argues that providing spaces for social discourse, collaboration, interactivity and intertextuality can support creativity, critical thinking, and learning. The ninth graders we observed made these connections themselves; they recognized that their collaborative digital compositions – mashups and remixes of others' creative works from a wide variety of contexts – are creative in that they generated new knowledge about the play in the social milieu of Web 2.0 resources and the classroom. For example, the group Jangly Janitors created a photostory comprised of black and white photos found on various Internet sites, a song soundtrack, and screens displaying quotations from *Romeo and Juliet*. Their classmates commented:

> "This is great, the black and white show more emotion i think, like between good and dark, my personal take but great project, …very emotional and music's just epic."

> "Wow, this is a great project. The black and white makes it so intense and epic. I love how deep all your pictures are, you definitely read into Romeo and Juliet in ways I never would've thought of!"

The comments of the fellow students indicate their recognition that the digital movie conveyed the emotion of the play in unexpected and innovative ways and that Jangly Janitors "read into" the play through different perspectives and with divergent thinking.

Students also posted comments in response to the video created by the group named The Sandwich Has Gone Bad. This group acted and filmed scenes from the play reinterpreted from Juliet's perspective. They then edited the scenes to produce a flipbook

effect (still images presented in quick succession) in order to represent the theme of haste. Their classmates said:

> "The flipbook effect was awesome! It really makes your project stand out. Also, I love how the songs fill you in on all the details. Juliet's point of view is a great way to represent it!"
>
> "Juliet's point of view was sooo creative, the music went along to the story amazingly perfect and it was such a great project!"
>
> "OH MY GOD!!! that was freaking awesome!!!! guys that was incredible, the idea was so.. original.
>
> "i liked the way you used the flipbook effect to show how fast the play was. awesome project :)"

Fellow students' comments reveal that they understood and appreciated the group's intentions, use of special effects, and re-interpretation of the play, and that the considered the result creative – "original," standing out as different, innovative, and surprising.

The students also recognized the importance of collaboration in their education and in this project. Anne wrote in her blog about groups and the difficulties presented by them in schools:

> "But lately I've been thinking that this is what group projects are all about. Learning to work well with others, and understand that peoples differences, if put to good use, can actually enrich a project, not ruin it. In the group I was in, people put out ideas I never would have thought of. When we first started talking about the style we wanted to use, we were not working well together. There were ideas flying everywhere, and no one was giving anyone but their own's a chance. By the end of the project however, we were completely in synch, and we had learnt how to make our differences into something that might actually work! When we finished our project, we were all proud. Not only that we were done, but that we'd learnt more about our peers, and the idea of working together."

Anne realized that collaboration involves negotiating varying ideas, perspectives and personalities, but that the diversity leads to creativity and productivity. Arlene came to similar realizations about the learning process. Her comment on the "regular paper and glue project," quoted above, concludes this way:

> "We were givin only an outline of what was needed for this project, and told to fill on the blanks. The fact that they realized how each individual learns in a drfferent way amazes me, because we have been trying to tell teachers this for years! Looking at all of these different complex projects, shows me that the point was made and that even though all of these projects are different, they all make the point clear in their own way! After this experience, unfortunatly i would still have to say that i prefer the traditional project other than technology, but as i said everyone learns in a different way, and it great that we have those technological people a place to show their abilities! :)"

Arlene came to understand the importance of being challenged by the assignment and of drawing on the diverse strengths of the group members, even "those technological people" to accomplish the task. Brent expressed his realization that learning is an active process:

> "I think this whole representing project gave us a better understanding of Romeo and Juliet. Even though Shakespeare is a very confusing author/playwright, we have memorized many unique themes and every important act or scene throughout the whole piece of literature!"

The unit of collaboratively producing a digital response to *Romeo and Juliet* and of using the affordances of the Ning site to document and reflect on the composing process involved multistep processes and complexity; gave rise to self questioning, cognitive dissonance, and puzzling; provided opportunities for connecting, problem solving, and intense involvement; and required insight, interactivity and communication. The students rose to the challenges of time, technology, and teamwork to produce a series of multimodal compositions that made them proud – and to learn much about themselves, technology, and Shakespeare in the process.

Conclusion: Making TRACKS

I suggest **TRACKS** (Thinking - Representing - Actively engaged - Creating - Knowing - Social) as a potentially useful acronym for thinking about technology integration in classrooms. In this action research project we offered students technologies for displaying thinking, both in the sense of critical (higher order) thinking and critical literacy (as evidenced by students' comments on gender stereotypes and their digital representations of events from Juliet's point of view and retelling of the story with lesbian main characters). They represented their knowledge and thinking multimodally – visually, linguistically, aurally, spatially, and gesturally (through digital movies in which they played roles). Active engagement and collaboration on the part of each student were encouraged. Challenging assignments offered occasions for creativity and for developing understandings of what it means to be creative. Knowledge of academic content was confirmed. Lastly, social networking brought it all together, emphasizing the importance of communication and interactivity in learning contexts.

In their article on blogs in education, Ferdig and Trammell (2004) explain "Four Benefits of Student Blogging," which I'd like to quote to sum up the benefits of the kind of digital unit I have just described:

- "…helps students become subject-matter experts
- …increases student interest and ownership in learning
- …gives students legitimate chances to participate
- …provides opportunities for diverse perspectives, both within and outside of the classroom." (p. 4)

I think the key to accomplishing these benefits and to the success of our action research project was requiring the collaborative multimodal compositions and offering the social networking site for interactivity. Although Ning is now available only for pay, and then in a reduced format, there are other social networking sites available for teachers to set up and use privately, including Edmodo, Moodle, Elgg, and Collaborize Classroom. Each has its own features and strengths. In my view, the features most needed are blogging, sharing resources, chat/threaded discussions and individual profiles.

Tech FTW!!!

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