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Mediators of Inequity: Online Literate Activity in Two Eighth Grade English Language Arts Classes

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Abstract

This comparative case study, framed by Cultural Historical Activity Theory and sociocultural understandings of literacy, investigated students' online literate activity in two eighth grade English Language Arts classes taught by the same teacher – one with a scripted literacy curriculum and the other without. During a year-long research project, we used ethnographic methods to explore the nature of middle school students' literate activity in each of these classes, with particular attention to the mediators evident as students engaged in online literate activity. Specifically, this article addresses the following research question: What mediators were evident within and across each of the classes and how did these mediators influence students' online literate activity? In addressing this question, we illustrate how particular configurations of mediators – even those operating within the context of the same school and same teacher – significantly influenced the nature of students' online literate activity and the literate identities available to students. This study reinforces the importance of attending to the influence of offline mediators in school settings. Without such attention, students' formal education is likely to be transferred online rather than transformed online.

Introduction

There are hopes that the use of online learning technologies will promote broader definitions of literacy in schools that will benefit all students; there are also fears that online learning technologies will reinforce narrow definitions of literacy and further increase inequity. Both these hopes and fears are legitimate (Warschauer & Ware, 2008). While online learning environments may offer transformative potential, even the most innovative are neither created nor used within a vacuum. Instead, a broad range of mediators influences their design and implementation (Kaptelinin & Nardi, 2006). The term mediators used here refers to the notion that when individuals and groups engage in activity they do so with cultural means – tools and signs, as well as rules, community, and divisions of labor (Engeström, 1987; Leont'ev, 1981; Vygotsky, 1978). In schools these mediators may include—but are not limited to—educational policies, learning ideologies, curricular materials, classroom discourses, and learner identities, as well as online programs – and their embedded tools and ideologies. Consequently, any full examination of students' online activity should also attend to the mediators operating within specific school settings.

The purpose of this comparative case study was to investigate students' online literate activity in two eighth grade English Language Arts classes that were taught by the same teacher. In one class, because students were regarded as below grade level according to standardized test results, the teacher was required by district mandate to administer a scripted literacy program to her students. In the other class, because students had scored on or above grade level according to standardized test results, the teacher had no such requirement from the district, and possessed much greater freedom to decide how to organize literacy instruction for her students. During a year-long research project, we explored the nature of students' literate activity in each of these classes, with particular attention to the mediators evident as students engaged in online literate activity. Specifically, this article addresses the following research question:

What mediators were evident within and across each of the classes and how did these mediators influence students' online literate activity?

In addressing this question, we illustrate how particular configurations of mediators – even those operating within the context of the same school and same teacher – significantly

influenced the nature of students' online literate activity and the literate identities available to students.

Theoretical Framing

This research is framed within sociocultural theories of learning and literacy. In particular, we draw on Cultural Historical Activity Theory (CHAT) and sociocultural understandings of Literacy.

Cultural Historical Activity Theory

CHAT posits the historically, culturally, and socially interconnected nature of activity and the mutually constitutive nature of mind and society. Consequently, researching from a CHAT perspective compels scholars to employ methods of inquiry that illuminate the complex network of mediating factors inherent within activity. CHAT has been identified as a valuable framework for literacy scholarship (Gutiérrez, Morales, & Martinez, 2009; Lee & Smagorinsky, 2000; Prior, 1998), for studies of classroom activity (Gutiérrez, 1993; Leander, 2002; Moll, Amanti, Neff, & Gonzalez, 1992; Russell, 1997), and within the field of Human-Computer Interaction (Bødker, 1990; Kaptelinin & Nardi, 2006). Rather than serving as a strongly predictive theory, CHAT provides a series of perspectives on human activity and a set of conceptual tools for describing that activity (Nardi, 1996). Central to CHAT, and particularly relevant to this study, is the tenet that human activity is mediated by cultural tools and signs. That is, humans do not act on the world directly; instead, mediators always come between humans and the object of their activity. Building on the work of Russian psychologists who explored the tool-mediated activity of individuals (e.g., Leont'ev, 1981; Vygotsky, 1978), Engeström (1987) expanded the notion of mediation to take account of factors operating at the societal level. He developed the construct of an activity system to provide a way to simultaneously consider the various mediators evident as humans engaged in activity. Figure 1 depicts Engeström's expanded activity system.

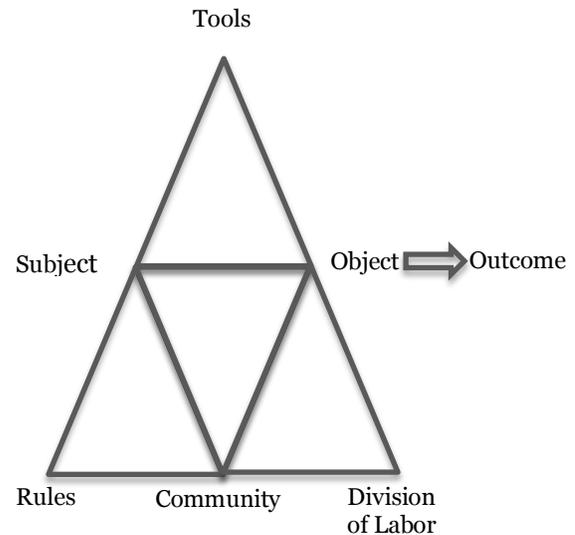


Figure 1. Activity system, adapted from Engeström (1987).

The top triangle shows Vygotsky's basic idea of mediation from the perspective of the individual. To this, Engeström (1987) added rules, community, and divisions of labor to account for the social nature of mediation. As Engeström (1987) intended, this theoretical model provides the basis for a methodological approach, which we employ in this study. We investigated students' online activity as an ecology – or activity system – comprised of subjects acting with mediators (i.e., tools, rules, community, and divisions of labor). Our investigation then, looked both within and beyond the online programs used by students. For example, we considered a wide range of mediators that influenced students' online activity, including the ideologies of literacy and learning embedded within the online programs, the assignment guidelines provided by the teacher, the school rules that shaped students' behavior, and the accountability context of the school.

Sociocultural Understandings of Literacy

Traditionally, in schools, literacy has been defined in somewhat simple terms as the ability to read and (less frequently) to write. Defined in this way, this ability, located in the minds of individuals, involves decoding when reading and encoding when writing in order to be able to apply the correct meaning to text (Gee, 2004). From this perspective, reading and writing are

seen to involve a sequence of skills and behaviors that can be isolated into discrete components; the role of the teacher becomes to identify a child's deficits in these skills and behaviors and apply best practices to teach them. When students do not display proficiency in these skills and behaviors (typically according to standardized tests results), they are then regarded as struggling learners who are in need of remediation and subjected to intensified skills based instruction.

A broad range of scholarship from sociocultural perspectives, however, challenges this narrow definition of literacy and the related deficit views of learners. In contrast to traditional views, which present literacy as autonomous, individual, and neutral, scholarship from sociocultural perspectives, illuminates the social, cultural, and deeply ideological – as well as multiple – nature of literacies (Barton, Hamilton, & Ivanic, 2000; Heath, 1983; Scribner & Cole, 1981; Street, 1984). While sociocultural perspectives have engendered various theories of literacy, fundamental to all of these perspectives – and central to this study – is an understanding of literacy as socially-contextualized meaning-making practices (Halliday, 1994; Perry, 2012). That is, literacy – or rather literacies – exist as ways of making meaning within the context of social, cultural, political, and historical practices; an important corollary is that literacies do not exist outside of those practices.

Positing literacies as socially-contextualized meaning-making practices has led scholars operating from sociocultural perspectives to theorize literacy in much broader terms than those proposed by traditional definitions of literacy in schools. Our own definition of literacy draws on several sociocultural perspectives: Literacies are hybrid semiotic meaning-making practices intrinsically interwoven with individuals, institutions, communities, and their actions, identities, and power relations – past, present, and future – and mediated through cultural tools. (Freire, 1970; Halliday, 1994; Heath, 1983; New London Group, 1996; Street, 1984). Unpacking this definition, we draw attention to several key sociocultural understandings about literacy pertinent to this study of online literate activity. In particular, we highlight the multimodal nature of literacies and the intrinsic connection among literacies and

cultural tools; and the relations among literacies, identities, agency, and power.

Given that literacies are meaning-making practices, and that meaning can be conveyed using multiple sign systems, it follows that literacies are semiotic in nature. While from this view literacies have always been semiotic, the dominance of new cultural tools, most notably the Internet and its embedded and rapidly evolving technologies, have advanced the imperative of theorizing the semiotic nature of literacy, particularly in the ways that digital tools afford meaning making using multiple modalities (Kress, 2010; New London Group, 1996). Perhaps even more significant, new technologies are constantly giving rise to new social practices. Knobel and Lankshear (2007) propose that we distinguish between the new “technical stuff” and the new “ethos stuff.” While the new “technical stuff” (hardware, technical tools, and programs) tends to get a lot of attention, the new “ethos stuff” (changing conceptions of practices in terms of participation, production, and publication) are often neglected; as a consequence, in educational settings, traditional narrow views of literacy may be transferred into new technical spaces (Vojak, Kline, Cope, McCarthy, & Kalantzis, 2011). Sociocultural perspectives demand more complex theorizing of new technologies in schools. In particular, consideration must be given to the tools embedded within and used alongside these spaces; as well as the social practices that these spaces enable or curtail.

Theorizing literacies as social practices also provide the imperative for scholars to employ a critical lens to illuminate the intimate connections among literacies and issues of power, agency, and identity. Sociocultural perspectives demonstrate the ways that literacy practices are shaped by power relationships and these relationships regulate who has access to certain practices, and whose practices are valued or marginalized (Barton et al., 2000; Street, 1984). Foundational to critical literacy theory is the work of Freire (1970), who drew attention to the problematic “banking model” that dominates teaching. This model, which assumes the transmission of knowledge, positions learners as passive receivers whose role is to accept dominant ideas and inequitable social structures without question. In contrast, Freire (1970)

proposed an approach to literacy involving “reading the word” and “reading the world.” As students “read the world” and become aware of the systems of oppressions within their experience, their own words are used to teach literacy skills. Fundamental to this approach is situating literacy instruction within a broader agenda for social reform.

The much broader conception of literacy illuminated by sociocultural perspectives, highlights the need for changing literacy instructional practices in our educational institutions - both online and offline. For example, broader definitions can frame how literacy is tied to a wide range of linguistically, semiotically, and culturally diverse social practices, and attend to how literacy instruction might expand or restrict students’ agency and literate identities, and their understanding of broader power relations. In seeking to broaden the ways in which literacy is considered in schools, several models and concepts have been developed by scholars operating from sociocultural perspectives. For example, Freebody and Luke (1990) propose a four-resource model of reading, including the ability to decode text; the ability to comprehend text; the ability to use text in functional ways to accomplish tasks; and the ability to read and analyze text critically, recognizing that texts are constructed and ideological. Others have developed critical pedagogy specifically designed to engage students in taking critical stances to illuminate issues of power and inequity (Vasquez, 2014). In addition, the concept of Funds of Knowledge – “those historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being” (Moll et al., 1992, p. 133), – which places great value on the historical and cultural knowledge gained from families and communities, has provided researchers and educators with powerful ways to counter deficit assumptions that are most frequently applied to students from marginalized communities.

Literature Review

Our review of related scholarship centers around three topics: digitally-mediated literate practices, situated studies of literate activity, and accountability and instruction. Together this scholarship reinforces a central point taken-up

in the theoretical framing of this research: Literate activity is shaped not only by individuals but also by the mediators that are a constituent part of that literate activity. More simply, context matters and cannot be separated from literate activity.

Digitally-Mediated Literacy Practices

Scholarship involving digitally-mediated literacy practices highlights the social and cultural practices that participants engage in when using digital technologies and the literate identities that participants take on in digital spaces. Many of these studies take place in out-of-school spaces, including examinations of fan fiction communities (e.g., Black, 2009; Chandler-Olcott & Mahar, 2003; Lammers, 2016), instant messaging (e.g., Lam, 2009; Lewis & Fabos, 2005), multimodal composing (e.g., Hull & Nelson, 2005; Turner, 2011), online journaling (Guzzetti & Gamboa, 2005), social networking (Chen, 2013; Gleason, 2016; McLean, 2010) and gaming practices (e.g., Johnson, 2008; Marsh, 2011). These studies emphasize the notion of literacy as multiple, performative, flexible, and tied to social practice and identity construction.

Less abundant – perhaps because learning in schools is still dominated by traditional definitions of literacy (Lankshear & Knobel, 2006) – are examples of situated studies of students’ digital literacy practices in K-12 classroom settings. Classroom studies tend to take place in settings where the teacher (or researcher) has a special interest in using digital tools and has the freedom to explore their use with students (Chisholm & Trent, 2013; Curwood & Cowell, 2011; Ranker, 2008). This research demonstrates how adolescents, including those who are often considered as lacking strong literacy skills in schools, use language and other semiotic resources in complex ways for a wide range of purposes. This work also highlights some of the features that are often absent from classroom literacy practices, such as an authentic audience, multimodal composing, and interest-driven activity. The out-of-school studies, however, have tended to focus on popular culture literacy practices that do not easily transfer into school settings, and the in-school studies have tended to take place in exceptional school settings where the teacher and students have access and agency to use digital tools in creative ways.

Many of these studies, therefore, do not take account of other mediators that are likely to operate within classrooms and thus are likely to overestimate the transformative potential of digital technologies in schools.

Situated Studies of Classroom Literate Activity

Other situated studies that take place in classrooms provide insights into the powerful ways that literate activity is mediated by a wide range of factors, including text, talk, and other semiotic resources (Cazden, 1988; Dyson, 1993, 1997, 2003; Gutiérrez, 1993; Lemke, 1990; Michaels, 1981; Smagorinsky & O'Donnell-Allen, 1998). Although these studies do not involve digital technologies, this work is highly relevant to this research, as it foregrounds mediators of literate activity within schools. Many of these studies focus on classroom verbal interactions between teachers and students. The most prevalent discourse pattern found within traditional classroom lessons involves the teacher initiating, the student responding, and the teacher evaluating or providing feedback. This pattern, referred to as IRE (Cazden, 1988; Mehan, 1979), IRF (Sinclair & Coulthard, 1974; Wells, 1993), or triadic dialogue (Lemke, 1985), is often associated with didactic education where particular hierarchical roles or identities are reinforced. That is, while the teacher initiates and evaluates, the student listens and responds. The teacher determines who gets to talk, what gets talked about, and what counts as a correct response; the students, on the other hand, learn that knowledge is predetermined with their role producing the desired answer that the teacher seeks. Wells (1993) complicated this view by highlighting that while the structure of the IRF pattern may remain constant across various instructional situations, the function of this pattern may change dramatically depending on the activity. Wells' (1993) point may also be applied to classroom discourse more generally, suggesting that examining the activity in which discourse is situated is vital.

Other studies, in recognition of the need to employ a much wider unit of analysis than discourse alone, have drawn explicitly on CHAT or used theories or methods compatible with CHAT to examine classroom literacy situated within activity (Dyson, 1997, 2003; Lee & Smagorinsky, 2000). Drawing on Cole and

Griffin (1983), several scholars working from this perspective highlight the importance – particularly for students from non-dominant communities – of re-mediating (transforming the mediators in students' literacy learning environments) rather than remediating (attempting to fix students' literacy "deficits"), (Alvermann, 2005; Gutiérrez et al., 2009; Luke & Elkin, 2000). From this standpoint, new digital technologies may be powerful cultural tools that support re-mediated literacy practices, but only as part of wider reforms in organizing and assessing learning in educational institutions.

Accountability and Instruction as Mediators

Given the policy context of the school in this study, scholarship that examines the impact of accountability policies on literacy instruction is also relevant. This body of research indicates how policies often considered as operating at the macro level may influence the everyday experiences of teachers and students. Significantly, these studies suggest that accountability policies are more likely to restrict the kinds of literate activity available to students from nondominant communities (McCarthy, 2008; Dooley & Assaf, 2009; Enright & Gilliland, 2011; Pease-Alvarez, Samway, & Cifka-Herrera, 2010; Solórzano, 2008).

The findings about accountability and literacy instruction are also consistent with broader research on the influence of accountability on instruction. For example, Darling-Hammond (2007) demonstrated that NCLB policies led many schools to focus on test scores, to narrow curriculum, and to concentrate on low-level skills, frequently harming the very students that these policies were most intended to help. Sunderman (2006) documented how schools serving minority populations were most likely to fail to meet AYP because of the ways in which subgroup data was calculated. McCaslin (2006) connected differing patterns of student motivation in high-poverty and affluent schools to NCLB legislation. McCarty (2009) documented the negative impact of accountability policies on Native-American students.

The present study adds to the discussion of students' literate activity in several ways. First,

this study considers the differential influence of accountability policies on two classes taught by the same teacher. Second, the study focuses on online literate activity, which is important as students are increasingly using online environments during literacy instructional time – and the assumption is often that online access will promote equitable opportunities. Third, this study not only considers the impact of accountability policies, but also shows how mediators operate together to influence students' access to different kinds of literacies and literate identities.

Research Design and Methodology

Ethnographic methods (i.e., extended engagement at the research site and multiple methods of data collection) were employed for this study to gain a holistic understanding of the activity system within which students' online engagements occurred. We also used a comparative case study design (Dyson & Genishi, 2005; Merriam, 1998; Stake, 1995, 2006), first considering each class separately and then making comparisons across the two classes.

Participants and Setting

This research was conducted at Reed Junior High School, located in a small urban setting in the Midwestern United States. Approximately 500 sixth through eighth grade students attend the school, which has a racially diverse population with 100% of students identified as low income. The district mobility rate is 22%. As a result of the school's consistent failure to meet Adequate Yearly Progress (AYP), the district had mandated a scripted literacy curriculum; this mandate, however, was only for students working below grade-level according to standardized tests.

Specifically, data for this study was collected from two of Ms. Anderson's eighth grade language arts classes: one with a scripted program and one without a scripted program. Ms. Anderson, who was white and middle class in her fourth year of teaching, taught each of these language art classes for two 40-minute periods each day. The number of students within each of these classes fluctuated between 24 and 30 throughout the year, as some students moved between classes and other students moved in or

out of the district. The study site comprised both physical and virtual spaces. The physical spaces were two classrooms: Ms. Anderson's room and the 8th grade computer laboratory. The virtual spaces were different for each class, as discussed below.



Figure 2. Classroom spaces.

We purposefully selected this school and teacher because of the unusual opportunity to observe two classes – one with a scripted program and one without a scripted program – taught by the same teacher.

The class with a scripted curriculum. This class was composed of students who, according to Aimsweb testing, had been designated as reading below grade-level. Table 1 shows students with permissions from whom data were collected.

Table 1.
Students in the Class with a Scripted Curriculum

Name	Gender	Race/Ethnicity
Aisha	Female	Multiracial
Anna	Female	White
Ayana	Female	Black
Dinari	Male	Black
Imani	Female	Black
Kimberley	Female	White
Laqueta	Female	Black
Maisha	Female	Black
Mark	Male	White
Mateo	Male	Latino
Nataniel	Male	Latino
Rafael	Male	Latino
Roberto	Male	Latino
Shaquana	Female	Multiracial
Tanisha	Female	Black
Tatiana	Female	Black
Tavon	Male	Black

Ms. Anderson was provided with a curriculum mandated by the district. The curriculum, *Voyager Sopris Learning's Passport Reading Journeys*, was an intervention program designed for struggling readers. *Journeys* included a teacher's manual, a student anthology, and student workbooks.

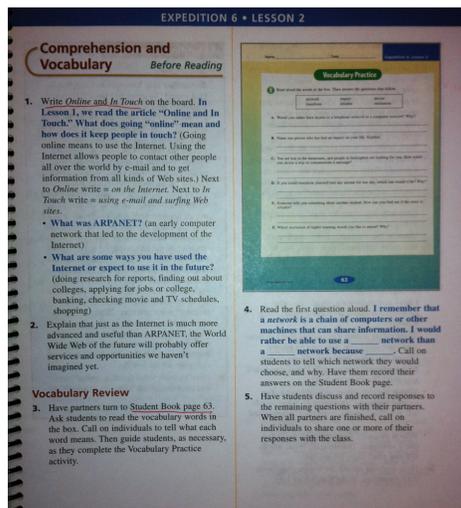


Figure 3. Student workbook.

Additionally, Voyager Sopris Learning's online program, *SOLO* (Strategic Online Learning Opportunities), was provided to support the

offline curriculum. In a one-minute video (<https://vimeo.com/59871430>), Voyager Learning introduces SOLO in the following way:

Comprehension strategies explicitly taught and practiced in the classroom culminate in a motivating online environment. Animated teen hosts carefully guide students down an automated skill path. Expedition themes introduced by the DVDs are captured in the daily lessons and continue in the SOLO reading passages. These passages are offered at three levels of difficulty or lexile ranges. SOLO is entirely web-based and requires no special software or hardware, just Internet access. In SOLO skills taught and practiced are based on a strategic reading set derived from the work of researchers in Collaborative Strategic Reading. Each new strategy is introduced and applied systematically.



Figure 4. Expedition map displayed on screen.

Throughout the academic year, when students in this class visited the computer laboratory – typically once or twice within a two-week period – it was almost exclusively to access this program.

The class without a scripted curriculum. This class was composed of students who, according to Aimsweb testing, had been designated as reading at or above grade-level. Table 2 shows students with permissions from whom data were collected.

Table 2.
Students in the Class without a Scripted Curriculum

Name	Gender	Race/Ethnicity
Amy	Female	White
Azmera	Female	Black
Ben	Male	White
Brian	Male	White
Charles	Male	White
Dayton	Male	Black
Darren	Male	White
Helen	Female	White
James	Male	White
Jason	Male	White
Jazara	Male	Black
Lúcia	Female	Latina
Miguel	Male	Latino
Nancy	Female	White
Patricia	Female	White
Rosaline	Female	Latina
Susan	Female	White
Zion	Male	Black

Ms. Anderson was not provided with a curriculum for these students and was able to choose the materials and learning activities used. Work in this class was dominated by activities such as independent reading, inquiry book projects, and journal writing. When students in this class visited the computer laboratory – in blocks of two or three days across a week, interspersed with extended periods with no computer lab use – it was almost exclusively to use *Scholar*. *Scholar*, as explained on the website <https://cgscholar.com/>, “is a digital learning platform that supports students’ academic mastery of writing and transforms the patterns of interaction in learning.” The online environment is based on seven key learning principles, as shown in Figure 5.



Figure 5. Principles of new learning and assessment.

The language used within the Scholar environment (e.g., creator, collaborator, publisher, community) is deliberately different from the language traditionally employed in schools. This language – and the design of this online space in general – is intended to connect students to the outside world of publishing, and to provide more opportunities for lateral (peer-to-peer) learning.

At the onset of this study, Ms. Anderson had expressed interest in using the online writing program with both classes. Our original intention was to compare the use of this writing program in the two classes. However, because of the demands of the mandated scripted curriculum, Ms. Anderson only used the writing program with the class without a scripted curriculum. For this reason, this study compares the use of two different online environments: The *SOLO* reading program in the class with the scripted curriculum and the *Scholar* writing program in the class without the scripted curriculum.

Data Collection

Data collection for this study took place across a school year between September and May. Table 3 provides an overview of the data collected.

Table 3.
Overview of Data Collected

Observations	Class with the scripted curriculum (24) Class without the scripted curriculum (26) (Class observations were between 45 and 90 minutes)
Interviews & Surveys	Interviews with Ms. Anderson (4) and survey (1) Interviews with focal students (4) and surveys (4) (Interviews were approximately 30 minutes)
Artifacts	Students' work artifacts Curriculum and instructional materials Teacher's initiating texts Local newspaper articles School web pages Promotional and support materials for the online environments

As we recorded classroom activity and collected other data, we used Engeström's (1987) construction of an activity system as a heuristic. This construct prompted us to consider the various tools, rules, and divisions of labor involved in classroom activity, as well as the different actors, objects, and outcomes. Faced with a large volume of data, we found Prior's (2004) tracing methodology particularly helpful as a means of focusing attention on artifacts and their relationship to the context. For example, we examined students' online writing artifacts and traced them to other documents, including assignment guidelines, review criteria, and graphic organizers used offline.

Data Analysis and Synthesis

Central to our analytical process was the construct of an activity system (Engeström, 1987) and Prior's (2004) tracing methodology. Data analysis took place in four overlapping phases.

Phase One. The first phase began as soon as data collection commenced and continued throughout. As we made observational notes and collected artifacts, we

attempted to notice and name the various components of the activity system that were evident. Whenever possible we used emic terms drawn directly from the data. Instead of open-coding, we used components of the activity system to guide preliminary coding. For example, we placed focal students in the subject position and then attempted to consider the objects and outcomes of their activity. We also noticed and named different mediators that were part of their activity: tools (e.g., "student workbook," "essay contest outline," "WIN main idea strategy"), rules (e.g., "work silently," "computer lab priority access for reading interventions), and divisions of labor (IRE discourse patterns, peer-to-peer feedback). In addition, we considered community members to be both those who were present within the classroom (peers, teacher, researcher) and those who were absent but evident (district administration, companies developing the computer programs, policy makers).

Phase Two. In the second phase of analysis, we used Prior's (2004) tracing methodology to analyze the many types of relevant data collected. We considered students' online literate artifacts as a starting point. We then traced from students' online artifacts to other texts and discourses evident within the activity system. For example, we began with a student's first draft in the online writing program, and then traced this text backwards to discover the initiating texts involved in its construction (e.g., planning sheets, review criteria, teacher's assignment guidelines) and forwards to consider the peer comments and changes made in the text before the final draft (See Halverson & Magnifico, 2013).

Phase Three. In phase three, we synthesized the data and built visual representations of students' online activity systems for each of the classes (see Figure 6 in Appendix A). Again, we used Engeström's model as a heuristic to illuminate the most salient mediators. As we built these visual representations, we focused on the online artifacts and the related mediators identified in phase two. These visual representations helped us to develop a better understanding of the mediators (tools, rules, and divisions of labor) involved in students' online work products. The activity system model below provides a synthesis of the findings of students' online literate activity

in the two classes. This model depicts the central mediators evident in the two classes as well as the community members both physically present within the room and those outside the classroom who fundamentally influenced classroom activity. The major distinctions between the two classes are shown by the blue text (class with the scripted curriculum) and red text (class without the scripted curriculum).

Phase Four. In the first three phases, we conducted our analysis separately for each of the classes. In phase four, however, we examined the synthesized activity systems from each of the two classes and did a cross-class comparison (Stake, 2006). We employed the activity system as a heuristic, looking across the two classes to compare the different tools that they used, the rules that governed their activity, and the divisions of labor that were visible.

Findings and Discussion

In both classes, a broad range of mediators significantly influenced online literate activity. These mediators and the ways they influenced students' online literate activity are discussed around three central themes – ideologies embedded within the online environments; offline initiating texts; and the influence of the accountability policy framework.

Ideologies Embedded within the Online Environments

Both the online reading program used by the class with the scripted curriculum and the online writing program used by the class without the scripted curriculum were marketed as novel technologies: advanced online learning environments that espoused less teacher-centered and more independent student activity. Within both of these online environments, however, it was possible to identify embedded ideologies of literacy, learning, and learners that have deep historical roots. Below, we describe these online environments and then discuss the embedded ideologies.

The online environment in the class with the scripted literacy curriculum. When students visited the computer laboratory, they used an online application that accompanied the scripted reading curriculum mandated for these students,

SOLO. This program was organized into units or “expeditions” (e.g., Forensics, Space, Computers, Money), which paralleled those in the offline curriculum. Students sat alone at a computer and were guided by an animated teen host. (See Figure 7).

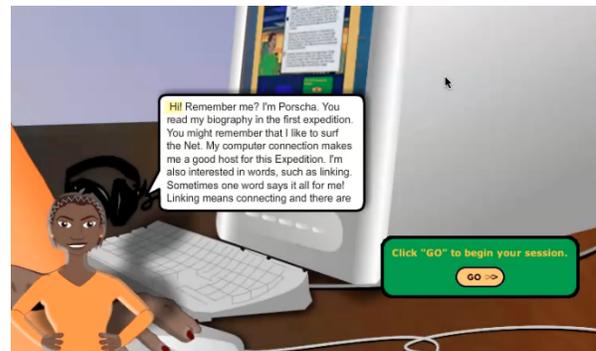


Figure 7. An animated teen host introduces the computers expedition.

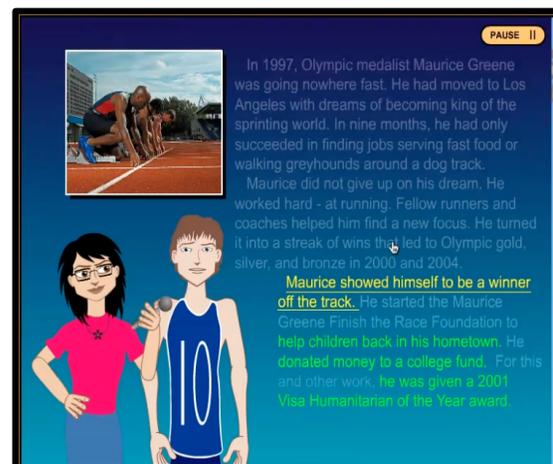
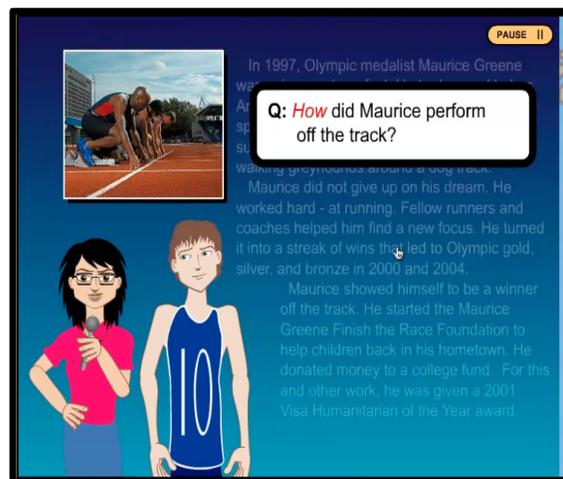


Figure 8. Screen captures from the questioning strategy video.

As students progressed through a unit, they watched and listened to animated presentations, which focused on a particular reading strategy. For instance, the presentation on questioning involved a brief movie showing an animation of Olympic medalist Maurice Greene running around a track, followed by three paragraphs about his life. The animated host provided questions based around the 5Ws (who, what, where, when, and why) and H (how) and then answers to these questions were highlighted in the text. (See Figure 8).

After the presentation, students practiced the strategy with a different text extract. This practice involved reading a paragraph then answering multiple choice questions, such as “What is the most important who or what in the paragraph?” or “What is the best main idea statement for the paragraph?” When students selected an option, they were provided with automated feedback such as “Super!” “I’m very proud of you,” “Congratulations,” or “Give it another try” as displayed in Figure 9.

Volcanic Eruptions

Earthquakes are also caused by volcanic **eruptions**. Sometimes one of the earth's moving plates is forced deep into the earth, and it begins to melt. This **molten** rock, or "magma," is forced upward. The magma breaks the earth's surface in an **explosion** of rock and gas. This is called a volcanic eruption. This eruption **could** cause an earthquake.

The worst volcanic eruption was **Krakatoa**. This volcano was located on an island in the **Indian Ocean**. When it erupted in 1883, it nearly blew the island apart. **Thirty-six** thousand people died. **Massive** earthquakes occurred hundreds of miles away, killing thousands more.

Death of Two Cities

Volcanic eruptions and earthquakes have destroyed complete cities. More than 1,500 years ago, **Mount Vesuvius** exploded. This volcano in southern **Italy** killed more than 20,000 people. Most of them lived in the nearby cities of **Pompeii** and **Herculaneum**. Earthquakes were felt hundreds of miles away.

Nature is beautiful, but it can also be dangerous. Scientists continue to study the earth. They also monitor, or watch, volcanoes and earthquakes. **Sometimes**, they may be able to predict these events.

Read the highlighted paragraph.

Which of the following is the best question about the main idea of the paragraph?

- What is a volcanic eruption?
- What is magma?
- What is an earthquake?
- What is the connection between earthquakes and volcanic eruptions?

Congratulations!

Continue

Figure 9. Text passage with multiple choice question, student answer, and automated response.

Occasionally, students were presented with a small textbox to type a response as in Figure 10. After, clicking “Submit Answer,” students were provided with a generic positive response, such as, “You’re really getting the hang of this.” This was the only opportunity that students had for writing in this environment.

A Computer in Your Head?

by Dr. Eric H. Chudler

What has billions of **connections** and works on energy? If you guessed the human brain, you're correct! The human brain lets you do many things. If you guessed the computer, you are also correct! Computers help you do many of the same things. Some people say the brain and the computer are a lot alike.

Energy

Computers and brains need energy. A computer gets its energy from **electricity**. Electricity helps the computer work. A brain gets energy from food. Vitamins and minerals give the brain what it needs to work.

Let two brainstorm ideas in the text boxes below.

Submit Answer

Who would have thought that computers would change our world so much? You can find a lot of information on the Net just as you can in books. A computer helps you organize the information and your reading skills help you see the organization of the text. Everything is linked together - computers, the Net, and

Figure 10. An example of the use of text boxes for student response.

This practice was followed by a testing session. The testing session was almost identical in nature to the practice session but no automated feedback was provided. In addition, within a session, a student was also timed reading a text extract and provided with words per minute reading speed as shown in Figure 11.

EXPEDITION 5: Uncontrollable Forces

Nature's Violent Side

By Patricia Barnes-Svarney

The beauty of nature can be seen all around us. But in the blink of an eye, this beauty can disappear. Nature can become **destructive**. It can cause widespread death and **destruction**. People can be killed. Buildings can be demolished. Let's examine this violent side of nature.

Earthquakes

Most people take the earth for granted. But **occasionally**, without warning, the ground begins to shake. It starts gently. Then, it becomes more and more violent until roads crack, bridges fall, and buildings **collapse**. This is one of nature's **deadliest** surprises: an earthquake.

Earthquakes have always **existed**. Early people had a **fanciful** explanation for them. They blamed the **tremors** on animals or monsters beneath the earth. Scientists now know that earthquakes are caused by movement in the earth's crust. The earth's rocky outer crust is made up of many separate pieces called plates. These plates are constantly moving. Sometimes they rub against each other along earth **fractures**. These cracks in the earth are called faults. Over time the strain builds up. Finally, the faults **rupture**, or break open, at their weakest spots. When they rupture, they cause

Click "DONE" to stop the timer. Click "RESTART" if you need to start over.

RESTART DONE

Now, here's another way to work on your reading game. This kind of practice will improve your fluency score. You'll read faster - or at a better speed - and you'll be able to show that you understand what you read. You practice reading with fluency every

REPLAY

You've done a great job!

You read 137 words per minute. That's great!

Click "NEXT" to continue.

NEXT

Figure 11. Timed reading passage and computer response.

Our examination of this online reading program and the opportunities it afforded students revealed ideologies of literacy that closely resembled an autonomous model (Street, 1984). Literacy was presented as a series of skills isolated from social practice; an impoverished view of literacy was evident. Reading was reduced to the application of simple strategies to isolated texts, and reading success was measured by multiple choice questions and reading speed. In terms of the four-resource model of reading (Freebody, 1992; Freebody & Luke, 1990), only the first two (i.e., the ability to decode text and the ability to comprehend text) were visible in this online environment. Reading speed was used as a proxy for fluency and meaning was regarded as derived entirely from the text rather than from an interaction between the reader and the text. The other two competencies of the four-resource model (i.e., the ability to use text in functional ways to accomplish tasks and the ability to read and analyze texts critically, recognizing that texts are constructed and ideological) were not considered, except in that test taking is a functional task that students must learn in order to succeed within school. Opportunities for students to write in this online environment were rare and always tied to assigned readings; these students had no opportunities to create or compose online.

The design of the program with its embedded ideologies, positioned learners and teachers in very particular ways. A strong resemblance to Freire's (1970) "banking" model was evident. In the online environment, the animation is Freire's "narrating subject" and the students remain the "listening objects:" the animation knows everything and students know nothing. In these practice and testing sessions, a common classroom discourse pattern was evident: IRE, where the teacher initiates, the student responds, and the teacher evaluates (Mehan, 1979). Here, however, the animated teen host substituted for the teacher. The literacy learning application initiated, usually by asking a question, the student responded, and then the application evaluated the student's response. The pattern was similar to IRE discourse common in classrooms, where there is usually an expected response from students; students' responses online, however, were even more restricted, as they were typically limited to multiple-choice answers, with the occasional use of a small box for the student's response. The

application was positioned as the knowledge provider and evaluator and the student as a passive receiver.

The program was also built on particular assumptions about learners. The company that made it (and the accompanying classroom curriculum) labeled it as a "literacy solution." This "literacy solution," which was intended for "struggling learners," positioned students as deficient and in need of fixing. The idea that students who fail in school do so because of their own individual deficiencies is deeply entrenched in ideologies of schooling (Valencia, 1997). This idea continues to perpetuate the use of simple solutions to address complex issues. Students in this environment were not given the opportunity to draw on their own linguistic competencies, they were not allowed peer-to-peer interaction, and they were not challenged to create. Instead, their instruction was based on an ideology of remediation that emphasizes the technical dimensions of literacy divorced from social practice (Gutiérrez et al., 2009). While online spaces are increasingly regarded as places where students can work collaboratively for real audiences and purposes, this online space did not afford students these opportunities.

The online environment in the class without the scripted curriculum. In the class without the scripted curriculum when students visited the computer laboratory – in blocks of two or three class sessions across a week, interspersed with extended periods with no computer lab use – it was almost exclusively to use an online writing program, *Scholar*. The students in this class all used *Scholar* to work on three projects over the course of the academic year – A Veterans of Foreign Wars (VFW) essay contest, a science fiction story, and an argumentative essay. Students' online activity focused on writing. Students spent the majority of their time in *Scholar* typing drafts of their writing projects in the Creator part of the program where they were provided with a space to type on the left of the screen using the teachers' review criteria on the right. (See Figure 12).

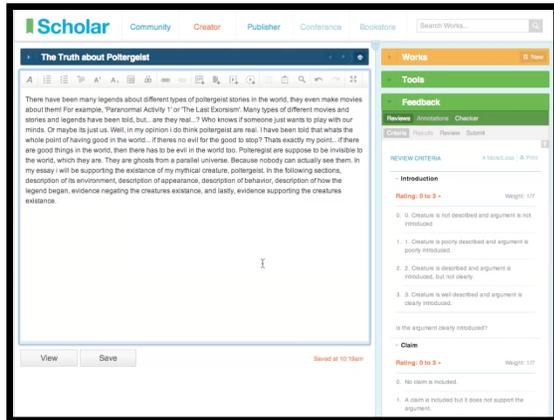


Figure 12. Screen capture showing the creator space with student writing on the left and the teacher's review criteria on the right.

Students also spent time in *Scholar* providing peer feedback. They read two or three peer essays and gave feedback using criteria provided by the teacher. For the VFW essay, as seen in Figure 13, the following three criteria were provided: Format, Content, Spelling and Grammar.

Students' peer comments for the VFW essay were typically short, non-specific, and positive, such as "it looks great," and "its (sic) awesome." However, some students did occasionally provide longer comments that gave compliments, drew attention to specific parts of the work, and gave directions for improvement. In addition, students were able to provide feedback using an annotation tool (See Figures 14 and 15 in Appendix B). This was not used as frequently but students did give some feedback using this tool.

After providing peer feedback, students spent time making textual changes and occasionally adding images. Students' revisions typically involved word level changes and the addition of more descriptive text. (See Figure 16 in Appendix C).

Within the design of the online writing environment, different assumptions about the role of students (and the teacher) and the nature of literacy and learning were visible. In this space the language of the environment – "Scholar," "Creator," "Contributor," "Community" – suggested that users were part of a collaborative academic group. The program

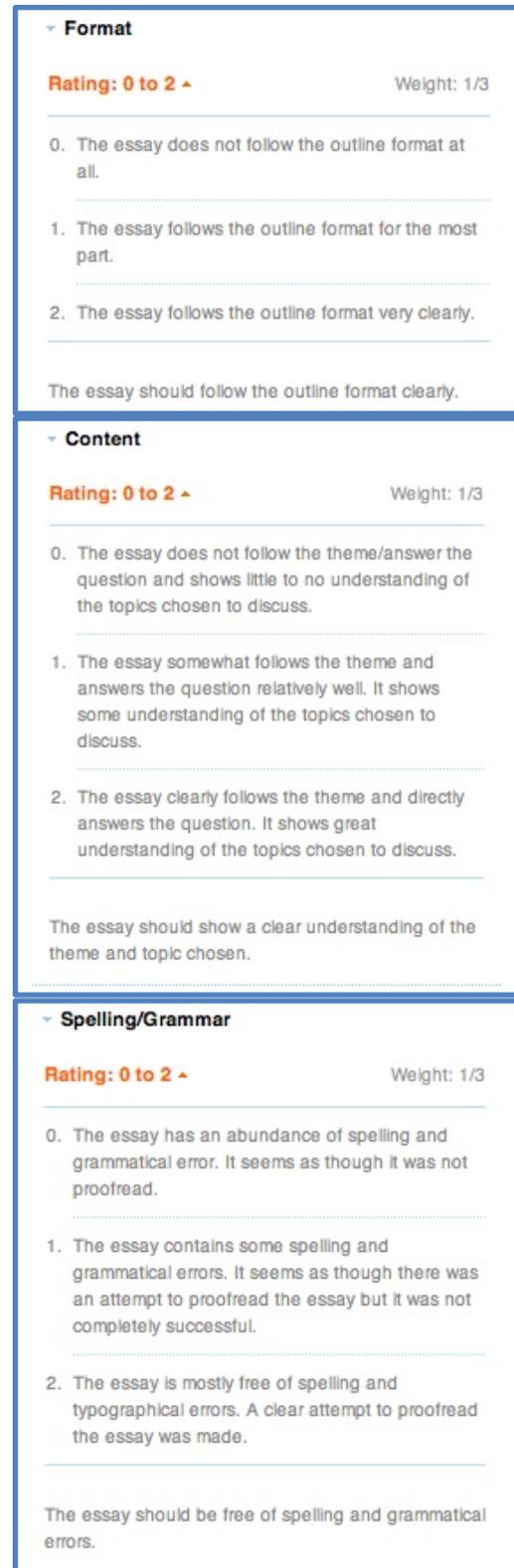


Figure 13. Review criteria provided by the teacher for the VFW essay.

provided students with multiple channels through which to interact, such as the Review tool, the Annotation tool, and – had they had the opportunity to use it – the *Community* space. These mechanisms were designed to support learning as a “community of practice” (Lave & Wenger, 1991). Within this program, there was no built-in teacher who provided exposition. Students were faced with a blank “page” in the *Creator* workspace. The environment did not provide set answers; instead, students had to reach beyond the space – to their own psychological resources or to other information sources – to find material for composing.

A comparison of the ideologies of literacy embedded within the design of these two online environments suggests very different conceptions of literacy and learning and different roles for students working within them. Students in the class with the scripted curriculum were presented with narrow representations of literacy and assigned the role of passive receivers who move from screen to screen as directed by animated characters and prompts. In contrast, students in the class without the scripted curriculum were expected to create and collaborate. The environment that they used was far more open, and thus literate activity could be conceived of in many different ways within this space. This openness, however, made this program far more susceptible to mediators beyond the online environment, which will be discussed in the next section.

Offline Initiating Texts

In both classrooms it was evident that texts outside of the online environment initiated and shaped activity that took place online. In the class with the scripted literacy curriculum the initiating texts closely resembled those used within the offline classroom – unsurprisingly, because the offline and online materials were from the same reading program. For example, in the student workbook they were provided with information about the same reading strategies as in the online environment, including the identifying the main idea “WIN” strategy, seen in Figure 17.

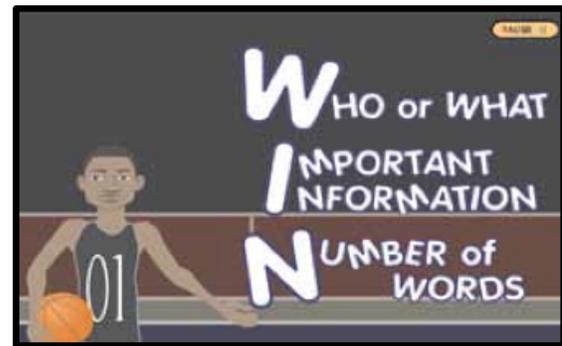
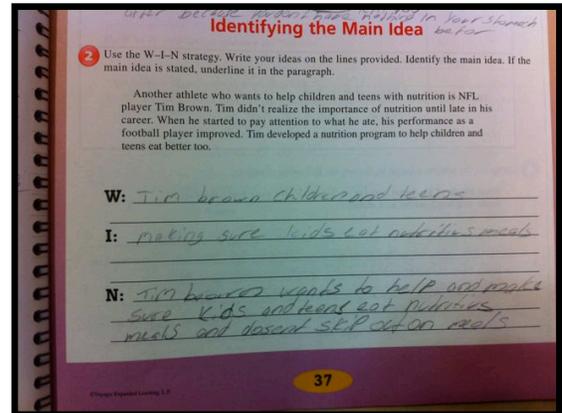


Figure 17. Win strategies from the scripted curriculum.

They were presented with text extracts to practice these strategies and with multiple choice questions to test their vocabulary and comprehension.

Notably, while writing was exclusively connected to reading response and tended to be highly structured, there was more opportunity for writing in the workbook than in the online environment. Figure 18 provides an example of the prompt and response.

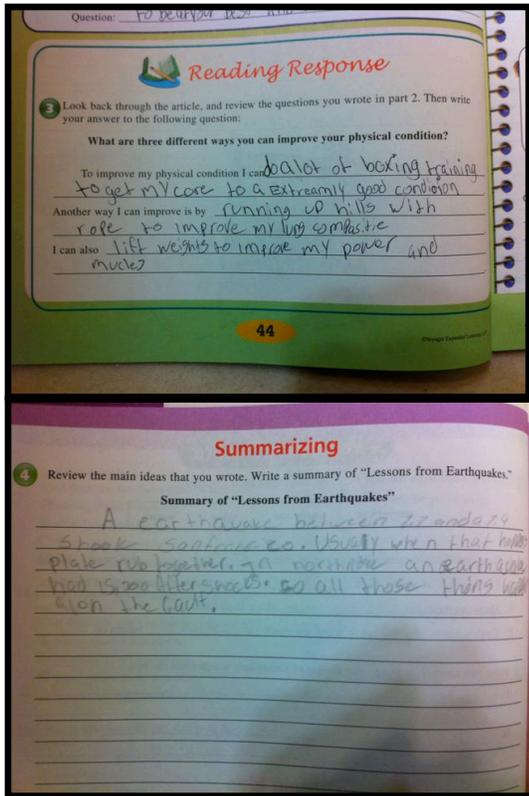


Figure 18. Reading response in workbook.

In the class without the scripted literacy curriculum, the initiating texts served as powerful mediators of students' online literate activity. These texts primarily involved graphic organizers used for planning writing and rubrics used for peer review and teacher assessment. Even before students began typing, much of the structure and content of their writing was shaped by these texts. This was true for all three assignments that students completed in the online environment. For instance, for the VFW assignment, Ms. Anderson required the students to complete two different planning sheets before working online. On the first sheet – “What would you discuss with our forefathers?” (displayed in Figure 19) the students wrote a list of possible topics, then narrowed their choice to three topics that became the ones they wrote about in the online environment.



Figure 19. Possible topics for VFW essay.

Ms. Anderson also gave each student an outline packet for the VFW essay, illustrated by Figure 20. Each of the five pages in the packet provided students with a space to plan a different part of the essay: introduction, body paragraph one, body paragraph two, body paragraph three, and conclusion.

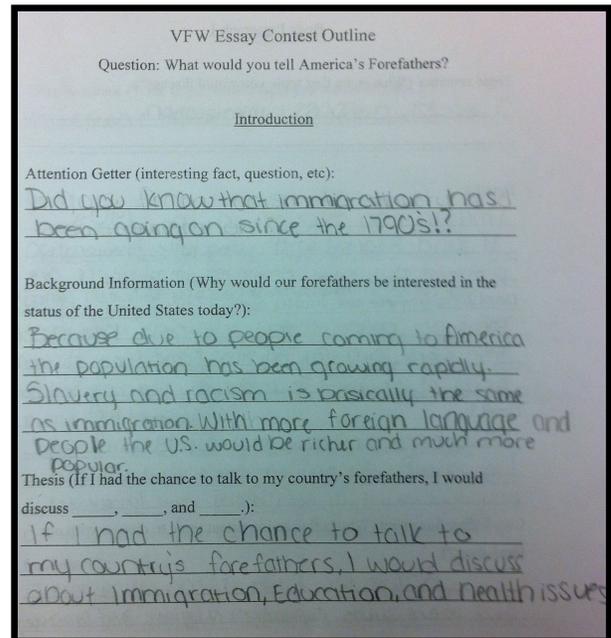


Figure 20. Example of student's VFW outline for the essay introduction.

Consequently, students' essays tended to be highly structured and the ubiquitous five paragraph essay was transferred from the

outline packet to the students' essays online. (See Figure 21).

America just keeps building up more and more frequently. Did you know that immigration has been going on since the 1790s!? I think our forefathers would be interested in the status of the United States because they would then see how advanced the United States is getting, also, all the changes and problems they couldn't figure out before. I honestly think that they would be interested in immigration, education, and lastly, health issues.

I personally think that they'd be interested in immigration because then they would see how many languages, races, and religions we have in the United States compared to when they were here. The population of the United States would increase, if there was no more immigration. And then the United States would be much richer in population and economy. Immigration is important to talk to our forefathers about. I wish our forefathers would have had done something about immigration because know they are separating families because they sent people away from their homes. Children are becoming orphans more and more because of immigration. At first immigration started very little and its enlarging frequently. Immigrants are basically people who came to the United States from a different country. Ever since our forefathers, there have been more religions. There are probably about millions of religions out there. Ever since immigrants have been coming from around the world there have been more religions out there. Many different religions come from different parts of the world. There are way more religions then there used to be when our forefathers lived in the United States. Languages also come from immigrants. Because languages come from different parts of the world. And when our forefathers were here they probably thought the only language that existed was english. These are the reasons why i wanted to talk to our forefathers about immigrants.

I also wanted to discuss education with our forefathers. I dont know if there used to be bullying though. I would tell our forefathers how alot of people are getting mistreated. How there are now many bullies in the United States. Some bullying depends on peoples' racism, religion, or even language. College has also changed, now everyone can go to college as if before only specific people could go to college. New sports have been invented because of education.

Lastly i wanted to talk to our forefathers about health issues. Our forefathers probably couldnt find a cure to alot of things. And there are also many new viruses and sicknesses. There are also alot more deadly sicknesses and viruses. Hospitals probably didnt use to exist well now they do! Back then you had to probably make an appointment, even for and emergency!! Where as now you could just walk into the hospital and get checked immediately. Hospitals have been a useful organization. Our forefathers would probably not be able to believe the cures people have found in the world already. Like for the chicken pox, flu , and many more!

I personally think our forefathers would be interested in all of this. And the future will just keep building up more and more.. Lets just face the facts and understand that time is passing by quickly! We will soon grow up with new inventions and medications!

Figure 21. Example of student's essay.

This assignment is a disaster with this group. Hardly any of them finished typing their initial draft. Hardly any of them did their peer review and submitted them. They are "ok with taking zeros." I don't know what I should do. I don't know how to make this project work without any effort or accountability on their part. Refusing to collaborate hurts their peers and they are aware. We talked about it. They don't seem to care though. I can't make them peer review each other's work. All I can do is take away points if they don't do it.

Figure 22. Email communication from Ms. Anderson.

In the class with the scripted literacy curriculum, students' online and offline literate activity aligned closely; little tension existed between these spaces. Conversely, in the class without the scripted curriculum, there was considerable tension between students' online and offline activity. Offline, factors such as assignments, graphic organizers, grades, and rules about working independently and silently – privileged individual activity in contrast to the collaborative activity promoted in the online space. This tension was particularly evident

regarding the use of peer response. Ms. Anderson reported that the students were resistant to completing peer response tasks. In an email communication she expressed her frustration. (See Figure 22).

Talking with the students about this issue, it became clear that many of them were concerned because they had not finished their own work; they felt that it was more important to do this than work on peer review. The teacher and students' frustrations illustrate the complexity of

trying to disrupt a system that is focused on individual work and assessment.

Although tension is frequently associated with problems, CHAT posits that tensions (or contradictions) are fundamental to transformation. From this view, the lack of tension within the class with the scripted curriculum may be regarded as problematic. No attempt at fundamentally changing students' conception of literacy and learning had been made. Instead, the same ideologies of literacy and schooling that were operating offline were also operating online. By the same line of reasoning, the tensions within the class without the scripted curriculum might be viewed positively, in that these tensions might be the genesis of change within this class: moving literacy and learning away from a focus on individual activity toward a more collaborative approach. While these changes did not happen immediately, Ms. Anderson did report implementing several changes in the fall semester following this study. For instance, although the other language arts teachers in her school continue to use "ability" grouped classes and scripted curricula with students who have been identified as working below grade level, Ms. Anderson requested and was allowed to trial mixed-ability classes. She reported her continued use of peer response and her expanded use of the *Scholar*, including the community space of this environment. Yet, certainly in the year of our study, these tensions were not as generative as they might have been due to the additional layers of accountability.

The Influence of the Accountability Framework

The influence of the accountability framework in which the school was operating was also a powerful mediator of students' online literate activity with differing effects on the two classes. In the class with the scripted curriculum, the use of the online program was part of the district's broader decision to implement a scripted reading program for students identified as reading below grade level according to standardized tests. In local press reports the district identified the reading curriculum as a response to concern over test results. Given the pressure on the district to raise test scores – connected to school funding – it is perhaps unsurprising that administrators chose a

program that aligned with the narrow view of literacy evident within reading tests. Because of this situation then, students in the class with the scripted curriculum were restricted to instruction based on narrow definitions of literacy and learning. Computers became tools for remediation and broader definitions of literacy that might have been possible in online spaces were not available to these students.

Computer use in the class without the scripted curriculum was also influenced by the accountability policy context. The school had a policy of privileging access to the computer laboratory for students working below grade-level to use programs for skills remediation. Consequently, access to the computer laboratory was restricted for other students and Ms. Anderson had difficulty finding time for the online projects that she wanted to conduct with the class without the scripted curriculum. This meant that projects were started later than she had planned, they were put on hold, and time was cut short at all stages of the writing processes, especially in the final stages of using peer feedback and revising writing. In addition, Ms. Anderson planned an online writing project in collaboration with the students' social studies teacher but this project never occurred because she could not find time on the computer laboratory schedule, which was connected to the larger issue of lack of resources for more students to have access to computers on a regular basis.

Policy frameworks are often regarded as macro factors that operate at a societal level. In contrast, Cultural Historical Activity Theory (CHAT) posits that there is no clear distinction between the macro/micro or global/local environment. Decisions made at a societal level are part of the everyday activities of students and teachers in classrooms. In this study, it is possible to see how students' online literate activity traced to decisions made by the district in response to concerns over Adequate Yearly Progress (AYP). As was the case with students in other studies that have considered literacy instruction within accountability frameworks (Dooley & Assaf, 2009; Enright & Gilliland, 2011), it is evident that the students in this study had access to very different opportunities for literacy learning. In particular, our study aligns with the findings from McCarthy (2008) who found that teachers in low-income schools felt

the negative effects of NCLB on morale and writing curriculum more than teachers in high income schools. Teachers in high-income schools focused on developing voice, rhetorical style, and reading-writing connections whereas teachers in low-income schools experienced skills-based instruction focused on grammar and mechanics (McCarthy & Mkhize, 2013). Our study extends previous work in identifying differential access in schools based on policy decisions by providing an in-depth look at the online curricula in two classrooms.

Conclusion

This study investigated the nature of online literate activity and the mediators operating in two classes taught by the same teacher in a school with a diverse and low-income population, impacted by accountability policies. It showed the powerful ways in which particular configurations of mediators significantly shaped students' online literate activity. Schools across the country are increasingly employing online environments. These spaces may promote learning premised on broad definitions of literacy (e.g., critical inquiry, multimodal composing, collaborative learning). They may also advance learning based on narrow conceptions of literacy (e.g., isolated skills practice, multiple-choice questions, transmission of knowledge as rigid facts). Much depends on these online environments' embedded ideologies of literacy and learning as well as the broader instructional environment in which they are used. Of particular concern is that while some students may have access to online activity that will offer the development of a wide range of literate identities, other students' online activity may be restricted by the identity of "struggling learner." As Warschauer (2006) stated, "The real threat of the digital divide in the US is not that some people will have computers and some won't, but that they will be enabled to use them in entirely different ways, with one group able to muster a wide range of semiotic tools and resources to persuade, argue, analyse, critique and interpret, and another group, lacking these semiotic skills, limited to prepackaged choices" (p. 164). The findings of this study underscore the importance of attending to offline mediators and using online environments for re-mediating (transforming the mediators in students' literacy learning environments) as opposed to remediating

(attempting to fix students' literacy "deficits") (Alvermann, 2005; Cole & Griffin, 1983; Luke & Elkin, 2000). From this perspective, new digital technologies may be powerful cultural tools that support re-mediated literacy practices – but only as part of wider reforms in the way that we organize and assess literacy and learning in our educational institutions.

References

- Alvermann, D. E. (2005). Literacy on the edge: How close are we to closing the literacy achievement gap? *Voices from the Middle*, 13(1), 8-14.
- Barton, D., Hamilton, M., & Ivanic, R. (2000). *Situated literacies: Theorising reading and writing in context*. London, UK: Routledge.
- Black, R. W. (2009). Online fan fiction, global identities, and imagination. *Research in the Teaching of English*, 43(4), 397-425.
- Bødker, S. (1990). *Activity theory as a challenge to systems design*. (DAIMI Report Series PB-334). Denmark: Department of Computer Science, Aarhus University.
- Cazden, C. B. (1988). *Classroom discourse*. Portsmouth, NH: Heinemann.
- Chandler-Olcott, K., & Mahar, D. (2003). "Tech-savviness" meets multiliteracies: Exploring adolescent girls' technology-mediated literacy practices. *Reading Research Quarterly*, 38(3), 356-385.
- Chen, H. I. (2013). Identity practices of multilingual writers in social networking spaces. *Language Learning & Technology*, 17(2), 143-170. <http://dx.doi.org/10125/44328>
- Chisholm, J. S., & Trent, B. (2013). Digital storytelling in a place-based composition course. *Journal of Adolescent & Adult Literacy*, 57(4), 307-318.
- Cole, M., & Griffin, P. (1983). A socio-historical approach to remediation. *The Quarterly Newsletter of the Laboratory of*

- Comparative Human Cognition*, 5(4), 69-74.
- Curwood, J. S., & Cowell, L. L. H. (2011). iPoetry: Creating space for new literacies in the English curriculum. *Journal of Adolescent & Adult Literacy*, 55(2), 110-120.
- Darling-Hammond, L. (2007). Race, inequality and educational accountability: The irony of 'No Child Left Behind.' *Race Ethnicity and Education*, 10(3), 245-260.
- Dooley, C. M., & Assaf, L. C. (2009). Contexts matter: Two teachers' language arts instruction in this high-stakes era. *Journal of Literacy Research*, 41(3), 354-391.
- Dyson, A. H. (1993). *Social worlds of children learning to write in an urban primary school*. New York, NY: Teachers College Press.
- Dyson, A. H. (1997). *Writing superheroes: Contemporary childhood, popular culture, and classroom literacy*. New York, NY: Teachers College Press.
- Dyson, A. H. (2003). *The brothers and sisters learn to write: Popular literacies in childhood and school cultures*. New York, NY: Teachers College Press.
- Dyson, A. H., & Genishi, C. (2005). *On the case: Approaches to language and literacy research*. New York, NY: Teachers College Press.
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki, Finland: Orienta-Konsultit.
- Enright, K. A., & Gilliland, B. (2011). Multilingual writing in an age of accountability: From policy to practice in U. S. high school classrooms. *Journal of Second Language Writing*, 20(3), 182-195.
- Freebody, P. (1992). A socio-cultural approach: Resourcing four roles as a literacy learner. In A. Watson & A. Badenhop (Eds.), *Prevention of reading failure* (pp. 48-60). Gosford, Australia: Ashton Scholastic.
- Freebody, P., & Luke, A. (1990). 'Literacies' programs: Debates and demands. *Prospect: Australian Journal of TESOL*, 5(7), 7-16.
- Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Seabury Press.
- Gee, J. P. (2004). *Situated language and learning: A critique of traditional schooling*. London, UK: Routledge.
- Gleason, B. (2016). New literacies practices of teenage Twitter users. *Learning, Media and Technology*, 41(1), 31-54.
- Gutierrez, K. D. (1993). How talk, context, and script shape contexts for learning: A cross-case comparison of journal sharing. *Linguistics and Education*, 5(3-4), 335-365.
- Gutiérrez, K. D., Morales, P. Z., & Martinez, D. C. (2009). Re-mediating literacy: Culture, difference, and learning for students from nondominant communities. *Review of Research in Education*, 33(1), 212-245.
- Guzzetti, B., & Gamboa, M. (2005). Online journaling: The informal writings of two adolescent girls. *Research in the Teaching of English*, 40(2), 168-206.
- Halliday, M.A.K. (1994). *Functional grammar* (2nd ed.). London, UK: Edward Arnold.
- Halverson, E., & Magnifico, A. (2013). Bidirectional Artifact analysis. *Handbook of Design in Educational Technology*, 406.
- Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. Cambridge, MA: Cambridge University Press.
- Hull, G. A., & Nelson, M. E. (2005). Locating the semiotic power of multimodality. *Written Communication*, 22(2), 224.
- Johnson, M. S. S. (2008). Public writing in gaming spaces. *Computers and Composition*, 25(3), 270-283.

- Kaptelinin, V., & Nardi, B. A. (2006). *Acting with technology*. Cambridge, MA: The MIT Press.
- Knobel, M., & Lankshear, C. (Eds.). (2007). *A new literacies sampler*. New York, NY: Peter Lang.
- Kress, G. (2010). *Multimodality*. New York, NY: Routledge.
- Lankshear, C., & Knobel, M. (2006). *New literacies: Everyday practices and classroom learning*. Maidenhead, UK: Open University Press.
- Lam, W. S. E. (2009). Multiliteracies on instant messaging in negotiating local, translocal, and transnational affiliations: A case of an adolescent immigrant. *Reading Research Quarterly, 44*(4), 377-397.
- Lammers, J. C. (2016). "The Hangout was serious business": Leveraging participation in an online space to design sims fanfiction. *Research in the Teaching of English, 50*(3), 309.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Leander, K. M. (2002). Locating Latanya: The situated production of identity artifacts in classroom interaction. *Research in the Teaching of English, 37*(2), 198-250.
- Lee, C. D., & Smagorinsky, P. (2000). *Vygotskian perspectives on literacy research: Constructing meaning through collaborative inquiry*. Cambridge, UK: Cambridge University Press.
- Lemke, J. L. (1985). Ideology, intertextuality, and the notion of register. In J. D. Benson & W. S. Greaves (Eds.), *Systemic perspectives on discourse* (pp. 275-294). Norwood, NJ: Ablex Publishing.
- Lemke, J. L. (1990). *Talking science: Language, learning, and values*. Norwood, NJ: Ablex Publishing.
- Leont'ev (Leontyev), A. N. (1981). *Problems of the development of the mind*. Moscow, Russia: Progress Publishers.
- Lewis, C., & Fabos, B. (2005). Instant messaging, literacies, and social identities. *Reading Research Quarterly, 44*(4), 470-501.
- Luke, A., & Elkins, J. (2000). Re/mediating adolescent literacies. *Journal of Adolescent & Adult Literacy, 43*(5), 396-398.
- Marsh, J. (2011). Young children's literacy practices in a virtual world: Establishing an online interaction order. *Reading Research Quarterly, 46*(2), 101-118.
- McCarthy, S. J. (2008). The impact of No Child Left Behind on teachers' writing instruction. *Written Communication, 25*(4), 462-505.
- McCarthy, S. J., & Mkhize, D. (2013). Teachers' orientations towards writing. *Journal of writing research, 5*(1).
- McCarty, T. L. (2009). The impact of high-stakes accountability policies on Native American learners: Evidence from research. *Teaching Education, 20*(1), 7-29.
- McCaslin, M. (2006). Student motivational dynamics in the era of school reform. *The Elementary School Journal, 106*(5), 479-490.
- McLean, C. A. (2010). A space called home: An immigrant adolescent's digital literacy practices. *Journal of Adolescent & Adult Literacy, 54*(1), 13-22.
- Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge, MA: Harvard University Press.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education. Revised and expanded from "Case study research in education"*. San Francisco, CA: Jossey-Bass Publishers.
- Michaels, S. (1981). Sharing time: Children's narrative styles and differential access to

- literacy. *Language in Society*, 10(3), 423-442.
- Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory into practice*, 31(2), 132-141.
- Nardi, B. A. (1996). *Context and consciousness: Activity theory and human computer interaction*. Cambridge, MA: The MIT Press.
- New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-92.
- Pease-Alvarez, L., Samway, K. D., & Cifka-Herrera, C. (2010). Working within the system: Teachers of English learners negotiating a literacy instruction mandate. *Language Policy*, 9(4), 313-334.
- Perry, K. H. (2012). What is literacy? A critical overview of sociocultural perspectives. *Journal of Language and Literacy Education*, 8(1), 50-71.
- Prior, P. (1998). *Writing/disciplinarity: A sociohistoric account of literate activity in the academy*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Prior, P. (2004). Tracing process: How texts come into being. In C. Bazerman, P. Prior, & M. Packer (Eds.), *What writing does and how it does it: An introduction to analyzing texts and textual practices* (pp. 167-200). London, UK: Routledge.
- Ranker, J. (2008). Making meaning on the screen: Digital video production about the Dominican Republic. *Journal of Adolescent & Adult Literacy*, 51(5), 410-422.
- Russell, D. R. (1997). Rethinking genre in school and society: An activity theory analysis. *Written Communication*, 14(4), 504-554.
- Scribner, S., & Cole, M. (1981). *The psychology of literacy*. Cambridge, MA: Harvard University Press.
- Sinclair, J., & Coulthard, M. (1975). *Towards an analysis of discourse*. Oxford, UK: Oxford University Press.
- Smagorinsky, P., & O'Donnell-Allen, C. (1998). Reading as mediated and mediating action: Composing meaning for literature through multimedia interpretive texts. *Reading Research Quarterly*, 33(2), 198-226.
- Solórzano, R. W. (2008). High stakes testing: Issues, implications, and remedies for English language learners. *Review of Educational Research*, 78(2), 260-329.
- Sunderman, G. L. (2006). The unraveling of No Child Left Behind: How negotiated changes transform the law. The Civil Rights Project at Harvard University, Cambridge, MA.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stake, R. E. (2006). *Multiple case study analysis*. New York, NY: Guilford Press.
- Street, B. V. (1984). *Literacy in theory and practice*. Cambridge, UK: Cambridge University Press.
- Turner, K. C. (2011). "Rap universal": Using multimodal media production to develop ICT literacies. *Journal of Adolescent & Adult Literacy*, 54(8), 613-623.
- Valencia, R. R. (1997). *The evolution of deficit thinking: Educational thought and practice*. London, UK: Falmer Press.
- Vasquez, V. M. (2014). *Negotiating critical literacies with young children*. New York, NY: Routledge.
- Vojak, C., Kline, S., Cope, B., McCarthy, S., Kalantzis, M. (2011). New spaces and old places: An analysis of writing assessment software. *Computers and Composition*, 28, 97-111.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University

Press.

- Warschauer, M. (2006). Literacy and technology: Bridging the divide. In D. Gibbs & K. L. Krause (Eds.), *Cyberlines 2: Languages and cultures of the internet* (pp. 163-174). Albert Park, Australia: James Nicholas.
- Warschauer, M., & Ware, P. (2008). Learning, change, and power. In J. Coiro, M. Knobel, C. Lankshear, & D. J. Leu (Eds.), *Handbook of research on new literacies* (pp. 215-239). Mahwah, NJ: Lawrence Erlbaum Associates.
- Wells, G. (1993). Reevaluating the IRF sequence: A proposal for the articulation of theories of activity and discourse for the analysis of teaching and learning in the classroom. *Linguistics and Education*, 5(1), 1-37.

Appendix A: Figure 6

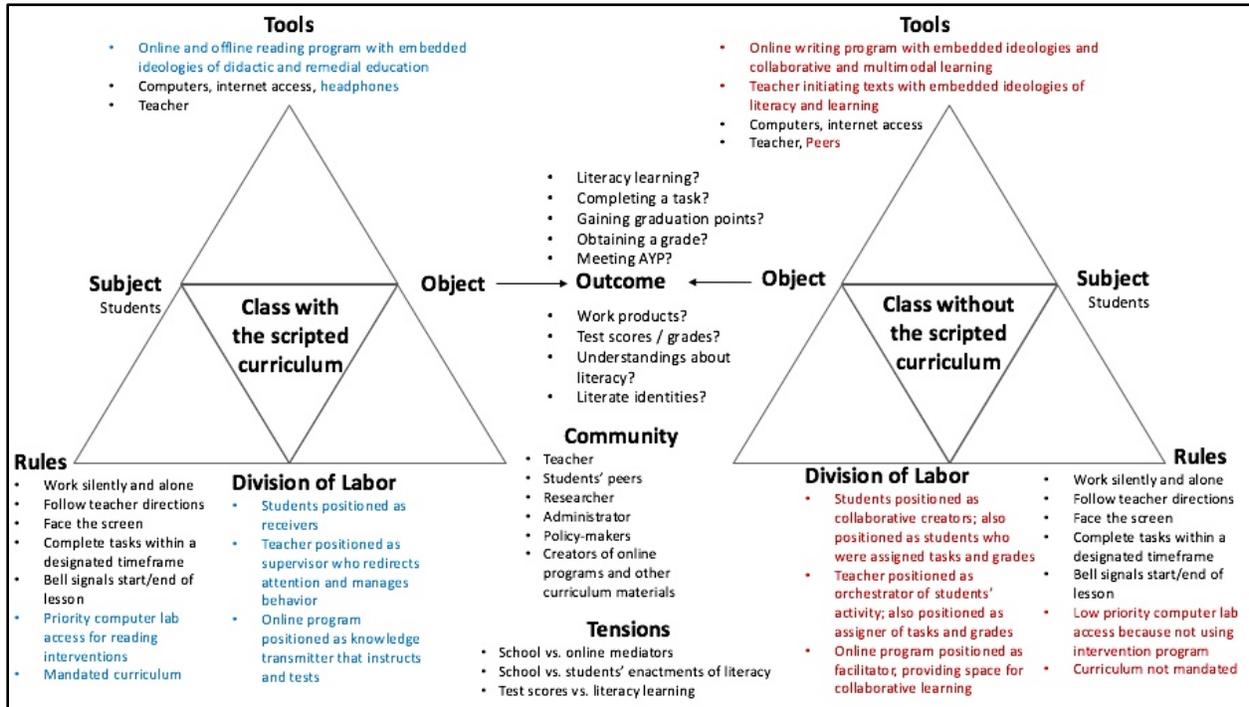


Figure 6. An activity system analysis of students' online activity in two classes.

Appendix B: Figures 14 and 15

Criterion 1: Beginning
Description: Does the writer get you interested from the start? How well do they introduce the reader to the characters and the setting?
Reviewers: suggest how the beginning of the story might be improved.

Score: 1
Reviewer's Explanation: Maybe you can replace some of the beginning like it's kind of confusing the way you explain " Steve has to save his partner before he fades into existence. Destructor takes Steven to 1985 and plans on trapping Steve when he comes for Steven." Like what is that suppose to mean? Like what is "time jumping"? Like explain a little more. Otherwise, I really like the names like destructor, Steve, and Steven

Criterion 2: Setting
Description: How well does the author describe the time and place where the story is set, and the kinds of people who are its characters?
Reviewers: What more would you like to know about the setting?

Score: 2
Reviewer's Explanation: Explain the setting better. Like when you wrote "Steve goes to 1985 to find his partner/bestfriend" like can you explain where like what place he goes to find him at? But you did a good job at explaining the years he went to.

Criterion 3: Character
Description: Are the main characters interesting people? Do they change, learn or grow during the story? **Reviewers:** suggest ways in which the main characters could be more interesting.

Score: 2
Reviewer's Explanation: Could you describe how they look like and like their size and just how they are. Like " Destructor is big and scary." like could you explain what makes him scary like his eyes, laugh, smile, or just like anything? The characters are interesting but they need some work.

Criterion 4: Plot
Description: Does the storyline keep your attention? Is it well paced? Does the story flow nicely? Does each scene connect well with the next? **Reviewers:** make suggestions for tightening the plot.

Score: 0
Reviewer's Explanation: You didn't organize the plot structure that well. You only have a story that is interesting but it's not well organized.

Criterion 5: Complication
Description: Does the story reach an exciting, interesting point? **Reviewers:** Can you suggest how the climax of the story might be made more exciting?

Score: 0
Reviewer's Explanation: It is a good story and all. But it seems like you rushed into it and you need more description to the story.

Criterion 6: Resolution
Description: Were you happy with the way the story ends? **Reviewers:** Do you have ideas for different endings?

Score: 1
Reviewer's Explanation: The ending needs more explanation. Like could you describe what happened a little bit more. Like the boogey dance party. What happened after, maybe you can explain they're reactions.

Figure 14. Review criteria and student comments for Science Fiction story.

Annotations

A1: Steve goes to 1985 to find his partner/bestfriend. Steven is very close to fading into nonexistence. You see, since he wasn't the one who time jumped at his own will, he will fade when you get to his birth year. Steve needs Steven to be an agent. "Steven?! Can you hear me?!" Steve say's through a bolted down vent. "Yeah" Steven replied. "Steve, ya gotta help me! Destructor is big and scary." Steven yelled. "I'll get you out buddy. I always do." Steve said confidently. "Alright Steve. See you in a few." Steven said in fright. Steve went to find a vantage point to get into the lair's main chamber.

- REPEATED: Delete repeated ideas - why?: There are some things that are repeated twice.

A2: " Hey Steven? Tell my wife and kid's... I love them". " Will do my friend. Will do!" Steven sobbed. And like that Steven was gone like lightning.

- Comment: I like the way that you describe, like the way you said "Steven was gone like lightning.". You can feel the way that Steve loves his family so much that the last thing he says is meant for his family.

Figure 15. Example of text annotated and feedback given using the annotation tool.

