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Enhancing Writing Achievement Through a Digital Learning Environment: Case Studies of Three Struggling Adolescent Male Writers

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ABSTRACT

The aim of this study was to explore how *Narrative Theatre*, a narrative-centered digital learning environment, supported the writing processes of 3 struggling adolescent male writers. We utilized a multicase study approach to capture 3 sixth-grade participants' experiences with the digital learning environment before, during, and after writing. The case studies provided detailed portraits of the writers as well as insights into their digital writing processes related to student interest, student ability, and value for writing. The across-case analysis revealed 3 themes (i.e., choice, scaffolding, and self-efficacy) that illustrated how the digital learning environment contributed to the students' writing experiences. Future research and development will focus on the addition of text animation for student products and the degree to which this feature further contributes to engagement and proficiency with struggling writers.

With pressures from a global information society, there is continued focus on writing as an essential ability for success in academic, professional, as well as civic life. Considerable research has been conducted on writing over the past 30 years. Reviews of writing research have focused on several aspects, including cognitive processes for writing (Hayes, 1996/2013), writing development (Shanahan, 2006), composition (Smagorinsky, 2006), as well as effective instructional strategies for writing (Graham & Perin, 2007). A common view among researchers is that writing is socially and culturally acquired as a set of practices in both formal and informal learning environments (Rowe, 2010). Specifically, research has indicated that writing increases student content knowledge (Bazerman & Rogers, 2010), advances logical and systematic thinking (McCuthchen, Teske, & Bankston, 2010), and in some cases decreases emotional tension (Singer & Singer, 2010).

Not all students, however, realize the benefits from writing. In fact, of the 7,000 students who drop out of school daily, many do not possess the basic writing skills needed to be successful in terms of meeting high school academic demands (Snow & Biancarosa, 2003). Fry and Griffin (2010) acknowledged the difficulty of teaching all students to write well. Student performance on national writing measures remains mired in the basic range, meaning that students show only partial mastery of the knowledge and skills fundamental to reaching proficiency in each grade (National Center for Education Statistics, 2011; National Middle School Association, 2010). Since 2002, there has been no significant statistical improvement demonstrated in writing proficiency according to the National Assessment of Educational Progress (NAEP; Fry & Griffin, 2010). In 2011, on that same test, 54% of eighth graders scored at the basic level, 24% at the proficient level, and 3% at the advanced level (National Center for Education Statistics, 2011).

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Middle-grade students who can write on grade level but choose not to present a unique challenge to teachers. Confirming current research findings, teachers of young adolescents repeatedly express the challenge of engaging them in successful writing experiences (Johannessen & McCann, 2009). It is interesting that, according to the National Commission on Writing (2003), American businesses spend on average \$3.1 billion on writing remediation yearly to train postgraduates to write. Although new research findings on the acquisition of writing are resulting in instructional changes for young children, pedagogical changes are slower to make their way into middle school classrooms. Research indicates a critical need for middle school students to acquire sustainable writing habits in order to develop fluency as they progress into more demanding academic contexts and ultimately into the workforce (Graham & Perin, 2007).

Given the fact that writing is a necessity for participation in academic, work, and civic life, how do teachers engage students in an effective process of learning to be proficient writers? One answer to this question can be demonstrated through the integration of technology. Technological integration has become a prevailing focus for educators (U.S. Department of Education, 2010). It is commonly thought that emerging technologies have the potential to engage, explain, and entertain; thus, when technologies are thoughtfully utilized, learning may be enhanced (Spires, 2008). Vygotsky (1978) advocated a similar approach to reading and writing when he discussed the importance of learning through play situations. However, to date little research has examined adolescents writing in digital contexts (Troia, Shankland, & Wolbers, 2012). Even less established in the literature is research on adolescent males who struggle with writing and digital context. Drawing on social learning theory and possibilities posed by digital environments, this research study examined how the technological tool *Narrative Theatre* supported struggling adolescent male writers as they planned, wrote, and edited fables.

The purpose of this multicase study was to explore how *Narrative Theatre*, an intelligent, narrative-centered learning environment, supported the writing achievement of three struggling writers. The three case studies provided detailed portraits of struggling adolescent male writers through their interaction with *Narrative Theatre*. The individual cases provided insight into understanding the writing processes of these struggling writers, including an examination of student interest, self-efficacy, and value for writing. The study addressed two questions: (a) How do three struggling adolescent male students view themselves as writers? and (b) How does a digital learning environment contribute to the student writing experience?

***Narrative Theatre* as a digital learning environment**

Narrative Theatre was designed and developed by a multidisciplinary research team (i.e., literacy education, computer science, and design) in order to explore the effects of a digital writing environment on learning. To date, the research team has utilized *Narrative Theatre* as a closed platform environment in order to study students' self-efficacy in writing as well as the influence of think-aloud protocols on engagement, metacognition, and narrative writing (Spires & Hervey, 2011). In the final version of *Narrative Theatre*, sixth-grade students will be scaffolded to craft narrative writing products (i.e., fables) through a virtual world in which characters *come alive* to animate their stories. The process is designed to enhance writing achievement. In the final version, the students' fables will then be transformed into three-dimensional animations. The current iteration of *Narrative Theatre* is two dimensional and provides an appealing and dynamic narrative-centered learning environment to explore classroom interventions that use digital environments for writing and the impact this environment has on struggling writers. The current version includes the following design features, which students access sequentially to support their writing:

- A voiced tutorial instructs students how to select the setting, characters, moral, and objects for the fable they are to write.
- Students choose from among four settings, 10 characters, nine different morals, and 20 objects to include in their fable.

- Students use a template to briefly plan the beginning (when setting and characters are introduced), middle (conflict and problem development), and end (conflict resolution) of their fables.
- A progress bar at the bottom of the screen gives students a visual representation of the progress they have made on the task.
- Students write the actual fable in the template supported by a spell-check function.

Taken together, these five design features create scaffolding that includes interactive media and controlled choice (e.g., drop-down menu) for each phase of the writing process for struggling writers.

Theoretical framework: Social learning assumptions within *Narrative Theatre*

We used two social theories to frame the creation of *Narrative Theatre* and this study: activity theory and self-efficacy theory. These theories help represent the relationship between the digital environment and the struggling writer.

Activity theory

Activity theory suggests that learning is influenced by social practice, which includes interaction between people and artifacts (Cole & Engeström, 1993; Engeström, 1987; Kaptelinin & Nardi, 2006; Vygotsky, 1978). Derived from Vygotsky's cultural-historical approach to learning, activity theory suggests that meaning and subsequent learning are created through activity with other people and cultural tools. Activity theory has been used to investigate the relationship of the cognitive writing process to the social context surrounding the writer (Hayes, 2006; Russell & Yañez, 2003); specifically, the mediational triangle offers a theoretical lens for examining writing in a digital context. In Figure 1, we adapted the mediational triangle to the writing context of *Narrative Theatre*. The triangle consists of six elements: the subjects (the writer and teacher), the tool (*Narrative Theatre*), the object (to write a fable), the norms (academic and social norms, such as gender), the community (the classroom as well as the larger social context), and the division of labor (between the writer and *Narrative Theatre*).

All components of the system are interrelated; however, some components may be more relevant in certain contexts. For the purposes of our study, we focused on adolescent writers as subjects, gender norms in literacy, and *Narrative Theatre* as the tool.

The subjects: Adolescent writers

Adolescence is generally characterized as a stage of “turbulence and transition with little or no recognition of the ways in which adolescent experience is shaped” by external factors (Cheville & Finders, 2010, p. 422). Nevertheless, early adolescence is the time when most students discover their

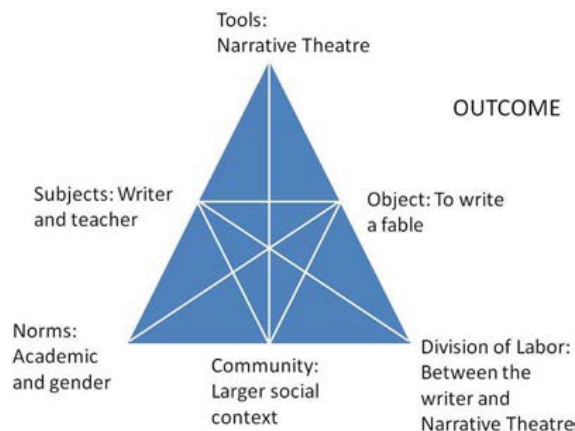


Figure 1. Activity theory mediational triangle. Adapted from Engeström (1987) and Russell and Yañez (2003).

educational preferences, especially in terms of reading and writing. In fact, the Association for Middle Level Educators (2010) has gone so far as to claim that the most critical time to keep students on the path of college and career readiness is middle school. Spence (2005) identified specific social factors that hinder literacy development in many struggling writers, such as poverty, second language learning, and school absence. In addition, Graham, Harris, and Larsen (2001) explained that the central factor needed to produce writing success is the ability to “identify and address academic and nonacademic roadblocks to writing” (p. 75). These roadblocks or obstacles include a limited ability to independently execute the psychological processes entailed in writing composition as well as a limited ability to focus on tasks and organize ideas. The authors further explained, however, that these processes can be facilitated through scaffolding, which is a primary instructional goal of *Narrative Theatre*.

The norms: Gender norms of boys struggling in literacy

Boys’ underachievement in literacy has drawn significant attention and continues to be identified as an area of concern by a wide range of stakeholders (Watson, Kehler, & Martino, 2010). Based on literacy benchmarks, adolescent males are frequently identified as struggling readers and writers, more so than girls (Goldberg & Roswell, 2002; Peterson, 2006; Smith, 2007). According to NAEP 2011 writing assessment results, only 17% of eighth-grade boys were at or above the proficient level in writing compared to 36% of girls. When asked to report agreement with the statement “Writing is one my favorite subjects,” 44% of boys disagreed compared to 41% of girls who disagreed (National Center for Education Statistics, 2011).

For many years, it has been believed that the way to reach this struggling population is to focus strongly on instruction in basic literacy skills. However, this has not always proven successful. Literacy theorists have suggested that literacy is more complex and sophisticated than what is traditionally considered in school (Peterson, 2006). This complexity is illustrated through the important role that literacy plays in the development of adolescents’ individual and social identities (Watson et al., 2010). More specifically, Goldberg and Roswell (2002) asserted, “When reading and writing, children are operating out of gender identities, and they are also using the occasion of reading or writing to construct or negotiate those identities in some way” (p. 7). Thus, recent work that has centered on the development of basic literacy skills may not adequately address critical factors that would enhance adolescent boys’ literacy development.

Spence (2005) discussed factors that contribute to the complexities surrounding the literacy underachievement of males specifically. These factors include (a) gender issues in the classroom, (b) a lack of male role models of good readers, (c) biological influences on how boys learn to read, (d) boys’ classroom behavior, and (e) lack of choice. Although the identification of these factors aids in understanding male literacy underachievement, these factors do not explain gender differences or point to strategies to address the issue (Goldberg & Roswell, 2002). Wilhelm (2007) stated that boys are more engaged in writing when the activity meets the following four conditions: “a sense of control and competence, a challenge that requires an appropriate level of skill, clear goals and feedback, and a focus on the immediate experience” (p. 163). Relating these instructional conditions to the writing of struggling adolescent male students shows promise for improving writing performance. Although we did not design *Narrative Theatre* solely for males, the focus of the case studies is on how the digital environment could potentially support the writing of adolescent males.

The tool: Narrative Theatre

More and more digital environments are facilitating writing experiences for struggling writers through a scaffolding process. This rationale was in part the impetus for the creation of *Narrative Theatre*. There is a long history of a variety of tools being used to support student writing. Hayes (1996/2013) referred to the tool as “the composing medium” (p. 7), which is an element in his cognitive process theory of writing. He asserted that the composing medium can play a critical role in what a person’s text is composed of and how a person composes text. Hayes (1996/2013) further

asserted that the writing medium influences, sometimes robustly, writing processes with either a positive or negative impact. For example, he claimed that “variations in the composing medium often lead to changes in the ease of accessing some of the processes that support writing” (p. 7). From a process view of writing, digital environment capabilities have continuously advanced in ways that support writers as described by Hayes (1996/2013). Likewise, Graham et al. (2001) maintained that “technological tools” (p. 75) may help students with learning disabilities overcome obstacles to successful writing experiences. Taking the previous work into consideration, we designed *Narrative Theatre*, with its engaging interface and instructional scaffolds, to remove obstacles and support student writing. For example, *Narrative Theatre* curates a suite of tools that is easily accessible to the writer in order to minimize the obstacles of locating and integrating tools. Based on activity theory, the labor of locating and integrating tools is specifically distributed to *Narrative Theatre*, potentially freeing up cognitive load for text generation (Sweller, 2005).

Self-efficacy theory

Bandura (1997) has described the relationship among self-efficacy, personal goals, and behavior, maintaining that people have goals and will engage in behavior that helps them achieve those goals, but only under particular conditions. One of the particular conditions is related to self-efficacy, defined by Bandura as a person’s beliefs about his or her capabilities to produce effects. Whereas high self-efficacy for a behavior facilitates the performance of that behavior, low self-efficacy serves as an impediment to performance. Researchers have applied Bandura’s theory to research on adolescents’ writing (see Eccles et al., 1989; Pajares & Valiente, 1999; Schunk & Swartz, 1993; Shell, Colvin, & Bruning, 1995), consistently demonstrating a correlation between a student’s writing self-efficacy and writing performance (Pajares & Valiente, 2006). A student may desire to perform a writing task but may choose not to do so because of low self-efficacy for writing. However, self-efficacy for writing can be enhanced in many ways, such as through modeling of coping strategies by a peer, process-oriented goal setting, and self-evaluation strategies (Schunk, 2003). In an earlier study with 78 sixth-grade students, we found *Narrative Theatre* to be a valuable means of improving students’ self-efficacy. The students’ interaction with *Narrative Theatre* produced pre- to posttest gains in self-efficacy based on Bandura’s Self-Regulated Learning Scale (Spires & Hervey, 2011). A deeper, specific look into the self-efficacy of adolescent males and their interactions with *Narrative Theatre* may contribute to an understanding of struggling adolescent male writers.

Taken together, activity and self-efficacy theories provide a social lens for understanding the *Narrative Theatre* learning environment and, more important, how it applies to struggling writers.

Method

A case study approach (Yin, 2009) was used to describe the writers’ interaction with *Narrative Theatre*. Many of the intricate, person-specific factors that inherently underlie young adolescents’ writing ability can only be identified through an individual and intensive investigation, such as a case study approach. The data obtained through the study reported here provided a focused understanding of adolescent writers’ thoughts and behaviors related to their interest, ability, and value for writing.

Participants and design

Three participants were chosen for the qualitative case studies; we used a purposive sampling process to select from the same group of students who participated in a quantitative study reported earlier (Spires & Hervey, 2011). Teacher recommendations helped identify participants based on the following criteria: (a) students who were willing and able to offer information about themselves and their writing, (b) students who self-identified as struggling writers, and (c) students who were sixth-grade males of varying ethnicities. The three participants were additionally categorized as

struggling readers because they scored below proficiency on the state's standardized end-of-grade reading test.

The three participants were sixth-grade students from a magnet middle school within a large school district in the southeastern part of the United States. Pseudonyms chosen for the students were Kade, Roger, and Mark. Kade, a Caucasian American from a middle-class, two-parent household, had been diagnosed with attention-deficit/hyperactivity disorder and had an individualized education plan (IEP) that assisted him in task completion. Roger, a Hispanic American student from a two-parent household of low socioeconomic status, was an English as a second language (ESL) student; however, at the time of the study he was about to be transitioned out of the ESL program. Mark, an African American from a middle-class, two-parent household in which one parent was an elementary school principal, had an IEP that provided him with additional assistance in reading.

The three participants demonstrated unique personalities, but when asked about their writing habits, they revealed commonalities in their profiles. For example, they believed that good writing was determined by correct spelling, punctuation, and sentence length. The participants stated that they were more likely to enjoy a fictional writing assignment if they were allowed a choice of writing topic; however, they preferred to write nonfiction assignments. All students expressed, in similar ways, that if an assignment was not going to be assessed by the teacher, they were more inclined to write.

Students' interaction with Narrative Theatre

Narrative Theatre was created for middle-grade students. The aesthetic as well as the content caters to adolescents, particularly sixth-grade students. As students enter the *Narrative Theatre* environment, they are greeted with vibrant colors, animated characters, and an inviting voice tutorial.

All three students first explored the *Narrative Theatre* environment via a guided voice tutorial. As seen in Figure 2, the voice tutorial instructed students on how to select the setting, characters, and objects for their story. In addition, the voice tutorial provided students with information about



Figure 2. Screen capture of the *Narrative Theatre* voice tutorial.

Figure 3. Screen capture of the *Narrative Theatre* planning and writing template.

navigation and other features, such as how to review previous selections and use the spell-check component.

During the initial planning phase, students were prompted to select a setting, characters, and objects for their story. The initial planning phase provided four settings, 10 characters, and 20 objects from which the students could choose.

As illustrated in [Figure 3](#), once these choices were made, students viewed their past decisions and began structuring their story using a planning and writing template. The planning area of the template (see [Figure 3](#), left-hand side) allowed students to write briefly about what they would like to happen during the beginning (when setting and characters are introduced), middle (conflict and problem development), and end (conflict resolution) of their stories. As illustrated in [Figure 3](#), students viewed their choice of setting, characters, and objects at the top of the screen and their progress on the bottom of the screen. When clicked, the interface offered more information about the selection. After the planning information was entered, the students began writing their stories in the area provided.

Data collection and analysis

Data collection took place over the course of 4 weeks. The participants met outside the classroom once a week for 1-hr sessions. Each participant was provided with a laptop and headphones. The first session involved an individual interview with the participants to explain the project and to have them discuss their attitudes toward writing. The second session provided an introduction to *Narrative Theatre*, including a tutorial of the writing module for all three participants together in a small group. Time was allotted for students to ask questions and become familiar with *Narrative Theatre*. Once the tutorial was completed, students began the writing assignment and continued to work for the remainder of the session. The third session consisted of reflection on the prior week's writing assignment, discussion about the students' experiences with writing, and continuation of the writing assignment. This session was conducted for all three participants together in a small group. During the fourth and

final session, the students completed the writing assignment and we conducted final semistructured individual interviews.

The goal of the case studies was to capture students' perspectives before, during, and after writing with *Narrative Theatre*. There were four sources of data: (a) semistructured student interviews, (b) semistructured teacher interviews, (c) researcher observations, and (d) writing artifacts. Each *Narrative Theatre* writing session, including semistructured interviews, was videotaped for later transcription. The sessions generated opportunities for the participants to think about themselves as writers.

The data were analyzed within cases and across cases through a pattern coding system (Miles, Huberman, & Saldaña, 2013). Within-case analysis involved an a priori approach in an effort to examine the students' (a) interest in writing, (b) ability to write, and (c) value for writing. These findings are described in the Findings section and answer the first research question: How do struggling adolescent male students view themselves as writers?

An open-coding system was utilized during the across-case analysis. Open coding allowed for the data to reveal similarities across cases (Merriam, 2009), offering insight into struggling adolescent writers' behaviors in the *Narrative Theatre* environment. Across-case analysis was used to answer the second research question: How does a narrative-centered learning environment contribute to the students' writing experiences? The findings for the second research question, in the form of three emerging themes, are also elaborated in the Findings section.

For validity and reliability, peer debriefing was used (Merriam, 2009; Yin, 2009). In peer debriefing, a knowledgeable peer reviews the data and determines whether the researcher has made reasonable claims to corroborate the findings. A peer debriefing process was used for within- and across-case analyses.

Findings

The Findings section is divided into two parts: a discussion of the three individual cases and an across-case analysis. In the first part of the Findings section, we present individual cases for Kade, Roger, and Mark that describe the students' performance and attitudes toward writing.

Kade

On meeting us, Kade demonstrated strikingly strong opinions about writing, particularly regarding his own writing. He exclaimed at our first meeting, "I dread writing. I don't think it is important." It quickly became apparent that although he did not voice his opinion often, he had one—a strong one. Throughout the study, Kade expressed that he was only interested in motorcycles and mechanics. He also expressed his disinterest in writing, framing it as a necessary evil: "I want to go college for 2, 3, or 4 years and then come back and work on motorcycles. I mean, I guess writing could be important in mechanic work and getting into college." Kade's low opinion of writing matched his grades, which were consistently low in both reading and writing. He said that he wrote enough to meet the basic expectations of any writing assignment. He had to be continually encouraged and motivated not to give up on academic assignments. Kade admitted procrastinating until midnight before a writing assignment was due and then completing the assignment as quickly as possible. However, his disinterest was not his only reason for avoiding writing. He struggled with the ability to transfer his thoughts to paper, stating

Sometimes ... my hand moves slower than my mind and I leave out stuff and don't finish my sentences. I sometimes am in the middle of stuff and I just really want to get the paper done and like, "Did I finish it?"

Evidence of Kade's unfinished paragraph and hurried writing style is provided in his prestudy writing sample, as demonstrated in Figure 4.

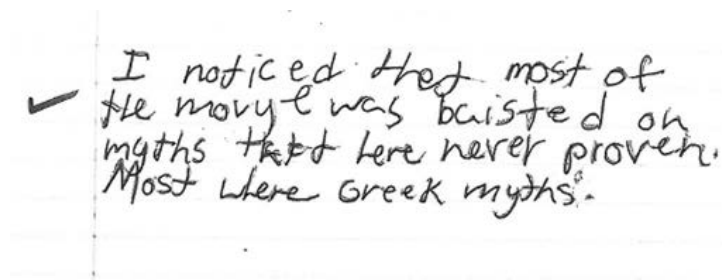


Figure 4. Kade's prestudy writing sample.

Kade's teachers identified him as a struggling reader and writer based on his classroom performance as well as standardized test scores. Kade was aware of his low writing performance and his need for intervention. At one point, he asserted, "I must improve!"

Roger

Roger seemed to be well liked by his peers. We observed that at times the other participants sought Roger's attention. According to his teachers, Roger carried himself with confidence and excelled athletically and socially; however, he did not excel academically. Although his primary interest was socializing with his peers, he was a hard worker and desired to succeed in education. Roger was an ESL student, which appeared to be a contributing factor to his low writing performance. Roger seldom experienced success within the classroom, especially in his English language arts classroom. He explained,

I sometimes forget to finish sentences and stuff because when I write a lot, I forget what I am writing about. It is hard to think about what I need to write in my mind and get it all on paper.

Figure 5 provides Roger's prestudy writing sample, which supports his writing self-assessment concerning his struggle to convey his thoughts in writing.

Roger was not unlike the other two participants in the study. Others shared in the difficulty in organizing and completing their thoughts in writing. Roger did not struggle articulating his thoughts or completing statements verbally; however, he said that often his thoughts "get lost" when traveling from head to paper. Roger self-identified as a struggling reader and writer, as represented in the following declaration:

I am an average writer because sometimes I am good and sometimes I am not that good. When I am interested in the writing, I am a good writer, but when I am not interested I am just not good.

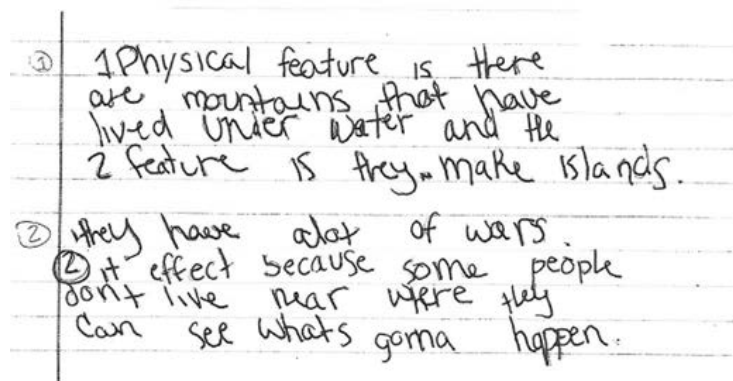


Figure 5. Roger's prestudy writing sample.

Roger was more motivated to write and complete assignments when given a choice in content. He continually stated that choice and interest in the topic were directly related to his feelings about writing. "I only really like to write when I get to write about what I am interested in, and I get to write freely," stated Roger.

Mark

Mark, based on observation of interpersonal interaction, appeared to be popular among his peers. However, popularity did not come as effortlessly for Mark as for Roger. Mark, identified as a struggling reader and writer, specifically struggled with reading comprehension. He was provided with an IEP, which afforded him additional assistance in reading. Mark exclaimed, "Man, I can't do this!" continually throughout the study and demonstrated his feelings regarding his writing ability. His statements implied that his writing self-efficacy, his belief in his ability as a writer, was very low. His struggle with reading affected his writing ability in all subjects. As he stated, "Writing for social studies is challenging to me. I can't remember everything that I need to write. I can't spell, and I need to improve in grammar. I need to improve in writing." As indicated in Figure 6, Mark's prestudy writing sample revealed his challenge with the mechanics of writing as well as with completing his thoughts in writing.

Accompanying his unsuccessful writing experiences was a dislike of writing. Several times Mark said, "I do not like writing, but I know I need to." He was unmotivated in most areas within school; however, he became very motivated by his own interests. He struggled to connect his personal interest, even in writing, with academic assignments, as demonstrated through the following assertion: "Well, I do like to write, but I just write for fun, but that doesn't really count as writing or good writing or anything." One attribute that contributed to Mark's popularity was his low academic performance: He gained attention by demonstrating a disinterest in academics. Yet when probed a bit deeper, he expressed an underlying value for education and writing. "Uh, yeah, writing is important," Mark stated, but only when he was out of the earshot of his peers.

Summary of cases

The three participants freely and quickly identified themselves as struggling writers. The identity of *struggling writers* was not a social stigma among these three adolescent males. They did not need any encouragement to discuss their shortcomings and disinterest in writing. Across all three cases, the participants expressed a strong distaste for writing in all forms and across all content areas. It is interesting that the distaste originated from their inability to perform well in writing. The lack of ability appeared to motivate their disinterest. Throughout the study sessions, the participants did not mention their low performance in any other subjects or lack of interest in other content areas. It seemed that it was acceptable to dislike writing and okay to perform poorly. All three of the participants

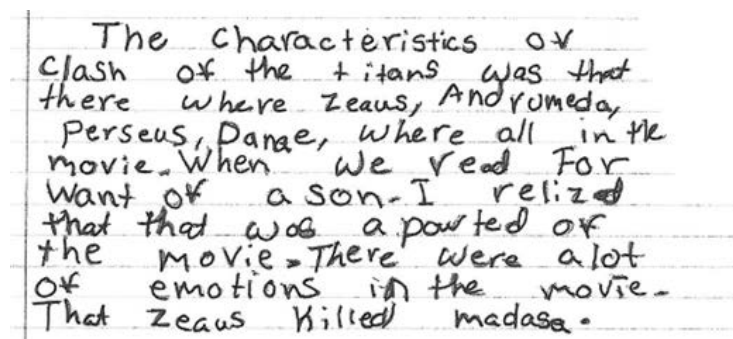


Figure 6. Mark's prestudy writing sample.

expressed that other subjects (even reading) carried a higher importance and, in turn, a heightened sense of embarrassment if they performed poorly.

Across-case analysis

An across-case analysis was conducted in order to answer the second research question: How does *Narrative Theatre* contribute to students' writing experiences? Throughout the case studies, the students revealed the contributions that *Narrative Theatre* is capable of making to the adolescent writing process. Three themes emerged from the open coding of the case study data: (a) promoting interest through choice, (b) scaffolding the writing process, and (c) increasing self-efficacy as writers.

Promoting interest through choice

Controlled choice was a key component within the *Narrative Theatre* module and allowed students to choose from familiar morals, characters, and settings offered. It provided a context that incorporated student choice within a sequenced structure (e.g., students chose a setting before they could advance to character selection). The choices students made were actualized in their narrative writing.

The participants continually expressed a desire for choice to be incorporated into their writing assignments. Making the association between choice and a "good" writing experience, Roger stated, "What makes writing good is when you get to write about what you want." The desire for choice became the participants' stance, as explained by Mark: "People write more when they have experiences to write about, and you can only write about those experiences when you have a choice." Mark's *Narrative Theatre* final writing product (see Figure 7) supports his claim that choice increases writing quantity.

In the final interview, Mark's teacher confirmed that Mark's quantity of writing increased dramatically within the *Narrative Theatre* writing module. All three participants similarly shared that when given choice, they were more interested in the writing as well as more apt to complete the assignment. However, more commonly the participants failed to complete assignments and expressed a general disinterest in writing. Choice provided the adolescent boys with ownership of writing; ownership led to the investment of more time and energy in writing. Greater investment often resulted in a more developed final product. The following exchange is an example of the important correlation between choice and interest:

Kade: I don't really have good ideas, but sometimes I have great ideas. It depends on what I am writing about; and if it is something that I like I will really put forth effort. Interest really matters.

Mark: You still have to put forth effort ... even if the topic doesn't matter.

Kade: I know! I do—but I put forth extra effort if I like what I am writing.

Evidence of Kade's extra effort is found in his final *Narrative Theatre* product (see Figure 8).

Kade claimed that he had put forth more effort with the writing assignment than usual. In the final interview, Kade's teacher confirmed his claim of extra effort. The provision of choice appeared to produce a positive writing environment for the participants. Kade claimed,

I like how you get to choose your own place (setting) that you like or know the most, like the barnyard and stuff. I want even more choices! I like the props you get to choose, like the forts, the stones, and the candy.

As the students progressed through the writing process, they voiced their excitement over their choices, even to the extent of bragging to the group. For example, Mark stated, "I chose a dog, lion, and frog. They are in the jungle and are going to fight. What about you?" Statements such as these illustrated the participants' engagement with stories. Their engagement seemed to spark interest and commitment to the writing process, which in turn may have increased the students' writing output, as demonstrated by Roger's statement "I wrote a lot more than I usually do." Roger's final *Narrative Theatre* writing product provides evidence of this statement (see Figure 9).

STORY:

There where a dog,lion,and a cow.They were all friends. But the dog always give up.When we are at our job and he does it and he give up when he is half way done.Well we told the dog that if he gives up one more time we would do the work for him and he will get fired. And so when we told him that he never gave up but one day the cow told the dog to stack the papers on the lion's desk.And he was stacking the papers but he saide i am bout to give up this work is hard.

The next day they all went too work and the lions desk was a mess and the lion went to the cow and said that who stack my papers for me becuse some one did a half job on it. The cow said i told dog to do it becuse he would not give up. So did the dog give up. He was doing a good job but lets go see. The dog was on the cumputer at that time. So the cow and the loin went to his office. And the loin said did you stack my pappers. The dog said yea i did a good job the loin said yea a half way job. The cow said did u give up. The dog said very softly yes only becuse you had alot of pappers dog you only stack ten pappers just ten papers.

So That evenning they all went to a place to eat and the lion and the cow are mad at the dog becuse he gave up we made a promise and you broke it not only you gave up you broke a promise.The dog was mad at himself so he made a commintment that he will never give up our brake a promise. so a year later he was a working machine this day forward he will never give up and brake a promise

THE END

Figure 7. Mark's *Narrative Theatre* final writing product.

STORY:

"Once apon a time there was a loin rabbit racon and owl. they all live in the jungle. rabbit and racoon liked to play in the hut and the clearing. The lazy sat waching them play. Rabbits ""friend"" the lion came to the clearing, he had been gone for a while.

HELOW there frends sead the lion , how are you. There is a cold front coming sead the lion lets git a fire starded. After using coconut fibers to start the fire the lion founed a plate and a fork and told the rabbit and raccoon that they were going to play a game after he got back.

After a while he returend with a gold bar and sead I am going to tiy this cloth over youer ies. Just before he did the owl saw the lions ways he piked up the hevvy gold brike and killed the lion with it and saved the two friends."

Figure 8. Kade's *Narrative Theatre* final writing product.

STORY:

The character is a fox,owl, and a raccoon and they were at the jungle and theyre are all friends and they try to build a shelter for each other in case it rains or storms outside so they keep trying to build the shelter.

But the problem is that the fox,raccoon,and the owl cant build for them and they cant so they all work together and they built the shelter and it started to rain and the rain went through the shelter . They rebuilt it and made it but did not work. They tried again and they built it with more supplys and they never gave up and then it rained but this time the rain did not go through the shelter.

The soulution was that they kept trying and they never gave up and they did team work to built a shelter for them to keep there self warm and dry for when it rains and storms out there in the jungle."

Figure 9. Roger's *Narrative Theatre* final writing product.

Session observation notes, his teacher's observation, and Roger's own statements confirmed that his writing output increased as well. He seemed to have a heightened sense of interest.

Scaffolding the writing process

The *Narrative Theatre* writing module provided a structured environment that scaffolded the writing process. The writing process consisted of six steps: prewriting, draft writing, revision, editing, evaluating, and publishing. The writers were required to complete each step in order to proceed to the next. Having students progress through the *Narrative Theatre* steps appeared to cultivate a constructive interaction with the writing task.

Based on the initial data collected, the participants previously demonstrated very little commitment to the writing process. The participants admitted to writing most or all of their assignments at the last minute. Kade confessed, "I just write it all at once, like, the night before." The students rarely followed the steps of the writing process independently. Though the participants did not typically follow the writing process, they were knowledgeable about the steps involved. All of the participants could recite the steps and acknowledged the importance of the writing process. "It is important," stated Mark. Kade admitted, "Our teacher tries to have us write a draft and edit it and then rewrite. I guess if I did it, I would do better in writing." Both of these participants acknowledged the importance of the writing process. However, Mark chose not to engage in the *Narrative Theatre* prewriting section, and Kade demonstrated very little interaction with the prewriting section (see Figure 10).

Beginning Plan:

once apou a time. lion hungey. has plate.

Middle Plan:

the rabbit and racoon run hug lion. has fire nice hot

End Plan:

owl sees the problem picks lion to death

Figure 10. Kade's prewriting section.

The participants did not lack knowledge of the writing process; rather, they lacked the persistence and/or confidence needed to complete the writing process.

The case studies provided for a better understanding of how *Narrative Theatre* scaffolds the writing of struggling adolescent males. Within *Narrative Theatre* the students completed their assignments and were ushered through the writing process. Mark reflected on the scaffolding process in a positive light:

You get to pick your characters and setting and like then you got to go in and see your characters, and they will be there when you write to remind you and then you got to put it in the paragraphs. You get to interact more with it.

Roger followed with, “The setup of *Narrative Theatre* makes writing easier—like the choices and the prewriting area. It is way better than our typical writing in school.” Figure 11 provides Roger’s prewriting product, which represents his scaffolded interaction with the writing process.

Participant responses suggested that *Narrative Theatre* aided in scaffolding the students’ recall and use of pertinent information when writing. Mark explained that the presence of the illustrated characters served as a reminder during writing, whereas the other two students suggested that the presence of the moral on the screen guided their writing. Based on these examples, it appears that even the basic organization afforded through *Narrative Theatre* aided in scaffolding the writing process.

Increasing self-efficacy as writers

The case studies exposed the three participants’ definitions of a good writer, which were rigid and somewhat unrealistic. They used their definitions to judge themselves as writers. Their definition impacted their writing self-efficacy and their willingness to put forth effort in writing. Kade expressed that “a good writer can spell good, write good, and they can write ... um a book, like a Harry Potter book.” The participants believed that good writing was heavily determined by mechanics rather than by content, perhaps because they perceived their own writing as being graded more on mechanics than content.

For the students, *Narrative Theatre* seemed to provide a safe writing context. The module scaffolded the writing process, allowing the students to experience small successes throughout their

The Beginning Plan:

the characters is a fox, owl, and a racoon the settings at a jungle and the all are friends and the try to build a shelter for each other in case it is raining or storming outside so the keep trying to build a shelter.

The Middle Plan:

the problem is that they cat builde a shelter for them a nd they cant so they all work together and they built it and it started to rain n the rain went through the shelter. they rebuilt it and made it but did not work.they tried again and they built it with more supplys n they never gave up n the built a place for them to sleep

The End Plan:

theyre solution was that they never gave up and they stayed dry cleann not muddy

Figure 11. Roger’s prewriting section.

writing. The small successes helped to decrease the risk and fear associated with writing that the participants experienced in their traditional classroom environments. The case studies provided evidence of increased participant writing self-efficacy. “*Narrative Theatre* helped me be confident. I don’t like to write, and it is very hard to think of whatever we have to write, but with it [*Narrative Theatre*], it isn’t very hard,” stated Mark. The study demonstrated an increase in interest and ease of writing within the digital environment. Roger stated, “I would most definitely be interested in using *Narrative Theatre* for some assignments. I am more comfortable writing on *Narrative Theatre*. It makes me feel good as a writer; I get to write more than I usually write.” The students’ final writing products were far from perfect, but according to their English language arts teacher, they had written more than usual and had finished the assignment. Not only had the quantity increased, but the quality had increased as well. Their teacher stated, “They (the participants) wrote more and at a higher quality than usual. That goes for all three.” Experiencing incremental progress within a structured learning environment contributed to their writing self-efficacy.

Discussion

Within and across-case analyses provided the ability to explore a digital learning environment intervention for writing and the impact of the environment on struggling adolescent males’ writing. The following discussion examines to what extent the theoretical framework (i.e., activity theory and self-efficacy theory), which in part prompted the design of *Narrative Theatre*, is realized by the qualitative findings in the study. The discussion is organized into three sections: (a) impacting the writing self-efficacy of adolescent male students, (b) scaffolding adolescent male students’ writing, and (c) limitations of the study.

Impacting the writing self-efficacy of adolescent male students

The way in which boys view their writing ability impacts their interest in writing and, according to prior research, relates directly to their writing outcomes (Pajares & Valiente, 2006). The correlation between self-efficacy and confidence is evident within the writing process. Confidence allows for risk taking, and for struggling adolescent male students, writing is a risk. The risk of investing in an assignment and still receiving a low grade is not an appealing opportunity for most people. If boys do not invest in a writing assignment, then they do not risk disappointing themselves or their teachers. As teachers and peers perceive boys as having more difficulty with writing than girls, there typically is no loss of social status. This gender disparity has been shown to be the greatest during eighth grade (Peterson, 2006). Social perception and comparison to peers also contribute to self-efficacy (Pajares & Valiente, 2006). In the end, low self-efficacy in writing often produces disinterest in writing.

Although whether *Narrative Theatre* could contribute to an increase in writing ability is left unanswered through these cases, participants perceived the writing experience positively. Mark optimistically assigned positive attributes to the narrative-centered learning environment when he said, “If we used *Narrative Theatre* in school we would become more interested in writing.” Narrative writing tasks allow struggling writers to tap other sources of knowledge to assemble their narratives, which is a major advantage in building confidence and self-efficacy. The narrative genre is different from the expository/argumentative genres that are practiced and required more heavily in traditional classrooms. Some research indicates that these other genres are more cognitively demanding (Berman & Nir-sagiv, 2007). In addition, the conventions of narrative are more familiar because of readily available cultural sources (e.g., stories, television, movies; National Association of Governors Center for Best Practices & Council of Chief State School Officers, 2010). Narrative may be easier for some groups of students; however, our study, as well as the results of Pajares and Valiente’s (2006) literature review, demonstrated that adolescent male students typically prefer to write informational texts.

Following the line of reasoning that interest, self-efficacy, and performance are interrelated, narrative may not always be easy for struggling adolescent male students.

Our data showed, not surprisingly, that these three adolescent boys preferred to write about their own topics. One challenge for teachers when allowing topic choice in writing is that sometimes students, especially boys, choose violent topics that are considered inappropriate in today's schools (Goldberg & Roswell, 2002; Peterson, 2006). For example, even though the digital environment provided animals for students to choose from as they created their fable, Roger wanted to know whether instead he could write about assassins who stabbed people. Having boys choose their topics may provide some level of engagement, as was evident in this study, but certain topics may not align with school policies. It could also be argued that writing more, regardless of the genre, as well as writing about topics of interest may build writing self-efficacy, a capacity that would hopefully translate across writing tasks and contexts.

Scaffolding adolescent male students' writing

This study extends the application of activity theory (Cole & Engeström, 1993; Engeström, 1987) and specifically activity theory related to writing (Hayes, 2006; Russell & Yañez, 2003) to the context of struggling adolescent male writers. Activity theory is enacted within *Narrative Theatre* through the use of design features (e.g., a menu for story elements and planning template) that scaffold the writing process. These instructional writing supports helped students navigate the roadblocks that they were accustomed to encountering during writing. For example, in traditional writing contexts, students may be using pen and paper or word-processing software to generate their texts. A struggling writer would typically need to locate and integrate resources (e.g., ideas for topic choice, phases of the writing process, graphic organizer for planning) that would support the writing process. The controlled choice structure of *Narrative Theatre* (e.g., a pull-down menu to select a moral for the fable) gives the writer choices while providing enough structure so that the act of making decisions does not become an overwhelming roadblock.

Roadblocks that the participants faced when writing were revealed, such as a limited ability to independently execute the psychological processes entailed in the composing of writing as well as a limited ability to focus on tasks and organize ideas. Consistent with teacher perceptions, all three students reported that completing writing assignments was challenging because of lack of skills, knowledge, and/or time. Participants described one or more of the following obstacles: (a) an inability to generate ideas as a result of limited prior knowledge of a topic or limited interest in a topic and (b) a limited ability to recall and/or manipulate ideas in working memory and transfer ideas to print. However, in keeping with the suggestions for learning disabled students from Graham et al. (2001), targeted scaffolds provided assistance with the writing process. Data analysis results from our study suggested that the structured scaffolds in *Narrative Theatre* contributed to increased text production and self-efficacy, at varying levels, for all three students.

Although our study did not investigate causal relationships, it appeared that the scaffolds inherent within the design of *Narrative Theatre* potentially contributed to writing self-efficacy. Schunk's (2003) research supported the relationship between scaffolding and self-efficacy when he found that goals focused on the process of writing combined with feedback increased writing self-efficacy in adolescents. *Narrative Theatre* provided engaging chunks through the series of choices students encountered one screen at a time. The scaffolding seemed to provide the necessary process goals and feedback to help the students feel a sense of competency and urge them to complete the writing process. Smith (2007) explained that adolescent male students need a writing experience that is broken into engaging chunks so that boys feel interested and confident in their ability to complete the task at hand and experience success one piece at a time. In this regard, it appears that success begets success. As Smith stated, "Any teacher of writing knows that becoming a writer takes hard work. But the boys in our study told us that unless they felt competent in an activity, they were reluctant to engage in it" (pp. 245–246). To engage struggling adolescent male writers, teachers must help the writers create a

feeling of competency and self-efficacy in writing. Based on our cases, it appeared that students felt competent enough to persist with the writing task as they used the scaffolding features inherent within the *Narrative Theatre* environment.

Limitations of the study

There are three key limitations of this research. First, if we had had additional time with the students, it would have been possible to document writing development as well as enhance individual student profiles concerning interest in writing and value for writing. Second, although we had access to initial writing samples from the three participants, the samples were expository rather than narrative. The samples allowed for a window into the students' writing ability, but because expository and narrative genres are different, it was difficult to use the sample as a benchmark. Third, if the *Narrative Theatre* writing environment had been in its final version, students would have benefited from the transformation of their narratives into three-dimensional animations. Their animated production potentially could have motivated them to further elaborate on their stories during the revision process. Conducting the study at this juncture, however, was important for the iterative design process.

Conclusion and future research

The findings from this study indicate that our three participants used the digital environment to scaffold their writing process, which in turn impacted their self-efficacy as writers within this particular writing context. Future research should focus on more nuanced data about adolescent writers, going beyond gender and race as additive categories and examine writing practices through intersectional analysis. Berger (2006) described intersectional analysis as considering the experiences of people with different categorical identities as qualitatively different from each other. In other words, researchers should consider the experience of an African American male student as qualitatively different from the experience of a White male student. The adolescent boys in this study readily identified as struggling writers. More research on writing identity and the struggling label, especially as it intersects with gender, would help the literacy community understand gendered academic norms, writing self-efficacy, and risk taking in the writing classroom. Of particular note is Hall's (2012a, 2012b) work on identity and voice with struggling adolescent readers, which could provide insight and potentially a roadmap for future research on struggling adolescent writers.

Taking into account the multilayered, shifting, and relational aspects of adolescent male literacy, Cheville and Finder (2010) called for more studies of adolescent writing in multiple activity systems in order to resist stereotypes about struggling writers that often limit experts' understanding. Future iterations of *Narrative Theatre* will involve quantitative and qualitative studies with the sixth-grade population in order to gain a full picture of the learning environment's role in providing scaffolding for the writing process as well as its impact on student self-efficacy and writing achievement.

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