Exploring the Boundaries of Learning through Multimedia

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A final dissertation submitted to the

Graduate School of Education

Rutgers, The State University of New Jersey

in fulfillment of the requirements

for the degree of Doctor of Education

Graduate Program in Literacy Education

written under the direction of and approved by

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New Brunswick, NJ

May, 2016
Abstract

The purpose of this case study was to examine how the use of multimedia digital literacies in the classroom compares with the use of traditional writing in addressing certain reading and writing skills outlined in the Core Curriculum Standards for English Language Arts. A secondary goal was to examine how the students themselves conceptualized the use of multimedia and its’ effectiveness in education. As a teacher-researcher, I completed a qualitative case study within the contemporary bounded system of my 8th grade language arts class while students completed a project called the Bound Project. In order to determine the effectiveness of using multimedia for the nine students who took part in the study, I examined student pre-assessments, reviewed individual surveys, spent time going through projects with individual students, and conducted focus groups. The data was coded using different coding structures: Six Core Curriculum Standards, Theoretical Frameworks/Learning Preferences, Classroom Achievement. After coding and analysis, the data resulted in two major findings. The first is that the use of multimedia digital literacies resulted in all nine students increasing their master of the Core Curriculum Standards and also their success in non-standards-based classroom achievement areas. Secondly, the students themselves were able to pinpoint eight factors that influenced their overall improvement, all of which were related to the use of multimedia digital literacies. These factors included Choice, Interest/Engagement, Technology Interest, Creativity, Ease, Connectibility/Familiarity, Stress Relief, Learning Better. These factors and the significant improvement in student achievement provide reliable, though not generalizable, data to help educators make decisions concerning the use of multimedia digital literacies in classroom instruction and assessment.
# Table of Contents

Copyright Page..............................................................................................................II
Abstract..........................................................................................................................III
Table of Contents...........................................................................................................IV
List of Tables..................................................................................................................VI
List of Figures................................................................................................................VII

Introduction....................................................................................................................1
  Statement of Problem.................................................................................................2
  Purpose of Study.........................................................................................................4
  Research Questions.....................................................................................................6
  Common Core Standards............................................................................................7

Chapter 1 Theoretical Conceptual Framework................................................................9

Chapter 2 Literature Review.........................................................................................15
  Studies Related to the Value of Multimodality in Learning........................................15
  Studies Related to the Value of Digital Multimedia....................................................19
  Studies Related to a Multimedia Digital Literacies in Teaching, Assessment and Policy.................................................................22
  Studies Related to Perceptions Impacting Multimedia Digital Literacies in the Classroom.................................................................................................27
  Moving Forward.........................................................................................................31

Chapter 3 Methodology...............................................................................................33
  Design Overview.........................................................................................................33
  Pilot Study...................................................................................................................34
  Changes After Pilot Study.........................................................................................36
  Role of the Researcher and Validity...........................................................................37
  The Participants.........................................................................................................39
  Data Collection..........................................................................................................43
    Before, Mid and After Survey...................................................................................43
    Written Pre-Assessment............................................................................................45
    Student Project Documents and Audio Visual Materials........................................45
    Focus Group and Project Walk-Through Recordings.................................................46
    Data Collection Timeline........................................................................................46
  Data Analysis.............................................................................................................47
    Narrowing the Data.................................................................................................48
    Data Addressing Research Questions......................................................................49
    Coding.....................................................................................................................50
    Interpretation..........................................................................................................55
    Limitations..............................................................................................................58
    Potential Gains from Study.....................................................................................59

Chapter 4 Findings and Analysis................................................................................61
  Purpose of the Study..................................................................................................61
# EXPLORING THE BOUNDARIES OF LEARNING THROUGH MULTIMEDIA

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**Research Questions**
- Data Overview ................................................................. 61

**Sample Student Data Profiles** ........................................... 62
  - Profile of James .............................................................. 62
  - Profile of Annie .............................................................. 72
  - Profile of George ............................................................ 79
  - Recurring Themes ............................................................. 85

**Student Conception of the Advantages of Multimedia**
- Digital Literacies ............................................................... 85
  - Learning Better ................................................................. 86
  - Stress Relief ................................................................. 90
  - Ease ................................................................. 92
  - Choice/Flexibility ............................................................ 94
  - Interest/Engagement ......................................................... 98
  - Creativity ................................................................. 100
  - Connectibility/Familiarity .................................................. 103
  - Technology Interest ........................................................ 106

**Results of Coding Student Data** ........................................ 108
  - Research Question 1A ....................................................... 112
  - Research Question 1B ....................................................... 117
  - Research Question 1C ....................................................... 121

**Chapter 5 Implications** ..................................................... 123
- Implications for Classroom Practice ........................................ 123
  - Student Choice ............................................................... 124
  - Instruction ................................................................. 124
  - Professional Development .................................................. 125

**Implications for Future Research** ........................................ 126

**Implications for Personal Practice** ...................................... 127

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**References** ........................................................................... 128

**Appendices** ........................................................................ 134
**List of Tables**

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Timeline</td>
</tr>
<tr>
<td>2</td>
<td>Data Collection Timeline</td>
</tr>
<tr>
<td>3</td>
<td>Data Addressing Research Questions</td>
</tr>
<tr>
<td>4</td>
<td>Core Curriculum Standards Codes</td>
</tr>
<tr>
<td>5</td>
<td>Theoretical Framework/Learning Preferences Codes</td>
</tr>
<tr>
<td>6</td>
<td>Classroom Academic Achievement Codes</td>
</tr>
<tr>
<td>7</td>
<td>Student Growth</td>
</tr>
</tbody>
</table>
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of Students that Referenced Each Theme</td>
<td>86</td>
</tr>
<tr>
<td>2</td>
<td>Number of Total Times Each Theme is Referenced</td>
<td>86</td>
</tr>
<tr>
<td>3</td>
<td>Mastery of the Core Curriculum Standards</td>
<td>109</td>
</tr>
<tr>
<td>4</td>
<td>Factors in Classroom Achievement</td>
<td>109</td>
</tr>
</tbody>
</table>
Introduction

John Dewey wrote that, “Men live in a community in virtue of the things which they have in common; and communication is the way in which they come to possess things in common” (1916, p. 7). Communication was once a simpler thing: a pencil, a piece of paper, and the written word. Many literacy classrooms still function with these simple tools. The 21st century has thundered in with a myriad of opportunities to communicate in new ways. With options like video chatting, tweeting, and blogging, children today are constantly in communication with the world around them (Dalton and Proctor, 2008). However, when it comes to communicating in more “traditional” print-based ways, some students struggle to share their ideas clearly. Similarly, when interpreting a YouTube channel or simultaneously following fifteen different Tumblr feeds, many modern students seem to show great comprehension abilities (Howe and Strauss, 2000). Yet, sometimes reading a piece of literature or a science textbook can prove to be a challenge for them. This juxtaposition of the world outside the classroom with the, at times, very different world inside the classroom presents a difficult problem for modern educators. It is unclear to teachers if incorporating new technologies into the classroom could help to improve literacy skills as detailed in the curriculum standards (Avila and Moore, 2012). In order to help educators plan effectively, it is key to understand how using multimedia technologies impacts student learning and students’ understanding of their learning.

New Literacies is a vast field, especially considering the rapid pace at which new technologies are developing and becoming integral in the modern lifestyle. It is related directly to “literacies associated with new communications and information technologies or, more widely, the digital electronic apparatus” (Knobel and Lankshear, 2001, p.999). There are innumerable possibilities when considering which digital literacies to incorporate into the
classroom. One specific type, multimedia, is one of the oldest of the digital literacies, but amongst the YouTube generation, multimedia has not become old hat. In fact it is gaining popularity as a method of getting one’s ideas out into the world. The term multimedia refers to a combination of methods of communication: a marriage between text, audio, video, pictures and interactivity (Mayer, 2008). Podcasts, YouTube, Instagram, and many more new opportunities for communication are on the rise as methods for spreading ideas in non-school environments. However, this is not necessarily true within the classroom. In a K-12 technology audit of a mid-sized suburban school district, much like my own, the data illustrated that

the vast majority of teachers (95%) and all of the administrators surveyed believed that effective technology has the potential to improve student achievement. The teachers who used computers, however, did so in ways one would not expect to see achievement impacted. Teachers still seemed to be consumed with the “what can I do with it” question and have only begun to conceptualize how their students might use these tools.

(Hannofin, 2008, p. 3)

It is important, as the world evolves, for teachers to be helped, educated, and informed in order to have our classrooms reflect and improve the developing opportunities for communication and creativity in the world.

**Statement of the Problem**

As a literacy teacher, I wonder how this new kind of communication might impact my students’ learning and understanding of themselves as learners. There is a continually growing body of research relating to the use of various ICTs, digital literacies, and multimedia. However, with high stakes standardized tests, merit pay, and an overhaul of the tenure system,
many teachers stick to tried and true methods they feel will address the state and national standards (Siegel, 2012; Thomas, 2005). Many teachers think that including multimedia in the classroom is an admirable idea, but unless it will improve the quality of learning that students are being assessed on, it is not worth the time (Spires et al, 2012). In today’s climate “state standardized testing impose(s) a limit on the amount of time teachers ha(ve) for instruction, as well as limits on the instructional resources and types of assessments teachers employ” (Thomas, 2005, p. 22). Delving into using multimedia technology in the classroom does require time to plan and time away from preparing for standardized tests. A study completed by Thomas (2005) illustrated that

to guide instructional planning, participants noted their increased reliance on conventional curriculum sources, particularly lists of instructional standards and standardized tests themselves. Participants routine classroom tests and quizzes increasingly featured only multiple choice questions while eliminating essay questions and other modes of discourse. (p. 22)
The paralyzing effect of high stakes testing and core curriculum standards results in limited use of the technologies that are becoming more and more the focus of life and work (Spires et al, 2012). In the previously mentioned technology audit of a suburban school district, Hannofin (2008) found that “sixty percent of all teachers either agreed or strongly agreed with the statement ‘The pressure to cover content (for end of year state exams) prevents you from trying new things with technology’” (p. 4). Potentially the focus on accountability and the use of multimedia technologies could work together, but teachers are apprehensive about making such changes.
Though there has been much research done in the field of educational multimedia (Jewitt, 2008; Bezemer and Kress, 2008; Elkins and Wyatt-Smith, 2011; Jocius, 2013; Cope and Kalantzis, 2000) and many studies done concerning the Core Curriculum Standards (Vantassel-Baska, 2012; Nichols, 2012; Doyle, 2012), there has been minimal research attention paid to linking the two areas. Perhaps teachers are seeking information, as they “would be better prepared to integrate technology into classroom instruction if they had more knowledge, information, and examples of how new technologies can be used to support, enhance, and even extend literacy teaching and learning” (Boling, 2008, p. 97). Teachers and administrators alike need evidence to help them gauge the value of incorporating multimedia digital literacies.

**Purpose of the Study**

The purpose of this case study is to examine how the use of multimedia in the classroom compares with the use of traditional writing in addressing the certain reading and writing skills outlined in the English Core Curriculum Standards. A case study “explore(s) an issue or problem using the case as a specific illustration” (Cresswell, 2013, p. 97). I completed a qualitative case study within the contemporary bounded system of my 8th grade language arts class while they complete a multimodal project called the Bound Project. In order to determine the effectiveness of using multimedia, I examined student work, reviewed individual surveys, spent time going through projects with individual students, and conducted focus groups.

For several years, I have collaborated with a Social Studies teacher, Laurie Bisconti, to create an interdisciplinary, multimodal project based on a literature study of the book “Bound” by Donna Jo Napoli and a historical look at the ancient Chinese empires. In the months prior to the project each year, we prepare students for the independence of the project by teaching steps
for research and note taking, strategies for reading nonfiction, and structures for explaining information. There is no overt instruction within this unit. Instead, students lead their own research projects and learn experientially. As a pre-assessment, students answer four broad, theme related questions. Students are given no directions in terms of structure, but the majority of students answer these questions in paragraph form. These responses are scored in regards to the standards related to central theme, creating arguments, supporting claims, analyzing text, including specific evidence, and coherently expressing ideas (Appendix D).

Then, students choose one of the four questions to focus on and begin the inquiry based project in which students are asked to analyze a work of historical fiction for Language Arts class in conjunction with researching historical facts for Social Studies class. They are expected to use that information to make inferences about literature, draw conclusions about the modern world, and present their ideas to the class. The project represents both learning and assessment for the unit. In terms of content, students incorporate information taken from literature, historical fact, current events, and pop culture. In terms of literacy goals, students are expected to illustrate growth in research skills, analyzing literary themes, drawing conclusions from a variety of evidential sources, explaining their own ideas, and supporting their ideas with evidence. Many students used multimedia digital literacies to express their ideas in the presentation. These presentations were then scored considering the same standards used on the pre-assessment.

The goal is to explore how using multimedia as a means of analyzing literature and expressing ideas can help students achieve mastery of the aforementioned standards and grow in other areas. A secondary purpose is to discover how cognizant students are of the impact using multimedia has on their own learning. This information will be useful in helping educators
inform their planning decisions and balance accountability requirements with the changing world of technological communication.

**Research Questions**

The idea behind the Bound Project is to give the students the freedom to express themselves in any way or ways they would prefer. Students answer a theme related question that forces them to synthesize literary, historical, and current event information to explore an idea thoroughly. Previously, this kind of analysis was done by having students write an essay. With the freedom to choose their mode of communication, many students now incorporate technology to synthesize and demonstrate meaning. It is common for them to create multimedia presentations incorporating videos, music, images, text, web 2.0 technologies and modes to present their ideas. Looking at the student written work, their presentations, and, most importantly, their ideas about the experience, will help to better understand how using multimedia can impact student learning. In order to explore this, I asked the following questions:

1. How does the use of multimedia digital literacies impact student learning in English Language Arts?
   a) To what extent does incorporating multimedia into student work help to improve or better illustrate adolescent skills outlined in the Core Curriculum Standards that are specifically related to analyzing text and presenting/supporting an argument?
   b) How does allowing use of multimedia impact student growth in classroom achievement in ways that may be outside the literacy standards?
   c) How do students themselves interpret the impacts of multimedia on their learning, their ability to illustrate learning, and their level of interest?
The Common Core State Standards

The Common Core State Standards in English Language Arts and Mathematics are a set of common expectations that were developed in 2009 to address deficits in the nation’s education system. According the official website of the standards:

For years, the academic progress of our nation’s students has been stagnant, and we have lost ground to our international peers….One root cause has been an uneven patchwork of academic standards that vary from state to state and do not agree on what students should know and be able to do at each grade level. (Common Core Standards Initiative, About the Standards, Paragraph 3)

The Common Core State Standards have been adopted by forty-four states and represents “the most successful attempt to gain consensus across states for 21st century standards” (Vantassel-Baska, 2012, p. 222). From their inception, the standards have bred controversy. Those who support them say that they largely pursue three significant goals: security, equality, and alignment. Similarly, the opposition claims that there are 3 equality significant arguments against the standards. Those are transparency, freedom, and diversity (Doyle, 2012). In the end, a large majority of states have adopted the standards because “a lack of consistent standards will leave many students woefully underprepared for college and career” (Doyle, 2012, p. 9). The standards seem to be “a de facto national curriculum that intends to be rigorous and challenging for all learners in these core subject areas” (Vantassel-Baska, 2012, p. 222).

Though rigorous, many groups emphasize that educators must find ways to differentiate and reach beyond the standards in different ways (Vantassel-Baska, 2012). For gains in achievement to be realized “there is also a need to enrich the standards by ensuring that here are open-ended opportunities to meet the standards through multiple pathways, more complex
One way to do this is to incorporate digital multimedia technologies in innovative ways. There are at least six of the new standards that address technology explicitly (The Common Core Website, 2014). However, many teachers take minimal note of these standards unless they can help students learn the traditional skills of reading and writing (Nichols, 2012). In a story working with a seventh grade language arts teacher, Nichols was easily able to use digital storytelling to, not only address the media related standards, but also address standards related to Central Idea and Analyzing Idea Development (Nichols, 2012). This small study touches upon ideas that my research study is concerned with, and my research questions grow out of taking studies like this a bit further.

In order to ascertain if the integration of multimedia digital literacies into the language arts classroom would be beneficial, educators need more evidence from student work and from the student’s own perspective. As a reference point for teachers to judge potential growth in this study, I have highlighted six specific Common Core standards that are most relevant in teaching writing skills in an eighth grade classroom (Appendix D).
Chapter 1: Theoretical Conceptual Framework

The design of the Bound Project and the questions that led to this research study were both strongly influenced by a Constructivist framework. Two theories that fall under the umbrella of Constructivism, Schema Theory and Social Constructivism, underpin the Bound Project and student learning through the process. In order to emphasize the students’ ability to create their own learning, we decided to allow students freedom in choice of partners, in choice of question, and in choice of mode. In addition to a Constructivist framework, the research questions and the design of the study itself are strongly embedded in the theories of Multimodality and New Literacies. Students are free to choose modes of communication and mediums for presentations, and most often choose to use multimedia digital literacies to illustrate their thinking. My research questions consider student choices and the results of those choices through the lenses of Schema Theory, Multimodality and New Literacies.

Constructivism is a “theory of learning that emphasizes the active construction of knowledge” and maintains that learning occurs when “individuals integrate new knowledge with existing knowledge” (Tracey and Morrow, 2006, p. 47). According to this theory, learning may not always be observable; it often results from students testing hypotheses and involves students making inferences, or reading between the lines (Tracey and Morrow, 2006, p. 48). Schema theory, a subset of constructivism, is represented within the Bound Project. Schema Theory maintains that people organize everything they know into existing knowledge structures that greatly influence their learning (Anderson, 2006). Learners have schema for different types of content, different learning processes, and different types of text structures (Anderson, 2006). Every individual has a schema particular to their own life experience. With this in mind, it seems logical to conclude that students have particular schema for how knowledge is communicated in
a Language Arts class and a separate schema for how they obtain knowledge in the very technologically advanced world in which they live. Many students think that a language arts classroom means only reading and writing, and if they feel uncomfortable with either of those processes, they may tune out. On the other hand, many students who experience difficulty in traditional classrooms are very comfortable in their home lives communicating via text, video, music, and other multimedia applications. While multimedia technology is itself a set of tools, the rules and methods of communication using those tools have developed into a unique schema for expressing ideas. Schema theory maintains that the “more elaborated an individual’s schema for any topic is, the more easily he or she will be able to learn new information in that topic area” (Tracey and Morrow, 2006, p. 51). With the Bound Project, students are given the opportunity to bring their more technology oriented schema for communication into the classroom. Students have the freedom to choose communication medium and, for the past few years, students have almost exclusively chosen to use multimedia technology to expand and illustrate their thinking. By choosing a medium that fits within a comfortable schema, students would likely have an easier time incorporating new knowledge and strategies into their work. This allows students to think within a schema they better understand, potentially providing easier access to learning for many students. This would also allow students to complete the tuning process, one of the three processes of taking in new information, by adjusting their schema for language arts class to include digital literacies (Widmayer, 2004).

While Schema Theory helps to explain how the organization of a student’s mind impacts learning, Social Constructivism explains how a student’s social environment impacts that same learning. The main thrust of Social Constructivism, an outgrowth Vygotsky’s work, is that children learn largely because of social interactions they have with other people (Vygotsky,
Exploring the Boundaries of Learning Through Multimedia

The theory maintains that “a child must experience the use of higher mental functioning in social situations before he or she can internalize such functioning and independently use it” (Tracey and Morrow, 2006, p. 109). Using multimedia in The Bound Project ties into the idea of social learning, especially amongst a generation that so often uses YouTube and social networking websites. The majority of students in my classes use multimedia on a regular basis for communication, through YouTube, Facebook, Snapchat, and a variety of other specific tools. Through social interactions, many have already begun to learn how this mode of communication works and can now begin to apply it to school based literacy communication. Because this project is not an essay, privately shared between a teacher and a student, all the classes are welcome to view the group projects and internalize the “semiotic mediation”, the process of using certain sign systems, which is used for this type of higher level communication (Vygotsky, 1978). In this project, students work in groups both in school and online, which offers students opportunities to learn through their group social interactions. However, the social interactions in a multimedia project seem to go beyond just the student groups. Because multimedia allows for multiple audiences, the audience for this project includes the other students in their class and in other classes (Avila and Moore, 2012). The public nature of the presentations creates a public standard for success, set by their classmates and multimedia creators across the internet. Multimedia use in the Bound Project allows them the opportunity to learn through modeling and through interaction with each other, as well as to motivate each other to rise to the level of expectation in the group and for group success.

In addition to the Constructivist principles noted above, the Bound Project and the resulting study must also consider mediums through which a student might learn. Multimodality is a theoretical lens that explains the complex layering of communication types that builds upon
how students naturally learn, and is therefore directly relevant to The Bound Project and the larger study itself. It is primarily “concerned with how human beings use different modes of communication, like speech, writing, image, gesture, and sound to represent or make meaning in the world” (Stein, 2008, p. 871). When applied to education, multimodal instruction refers to the use of variety of methods to create meaning in the classroom, without being limited to any one medium, such as print literacy. This idea has been narrowed to multimodal social semiotics, which is the idea that education happens naturally through all types of modes, which are socially contextualized so that the varying symbols work together to create “communication ensembles” (Stein, 2008, p. 871). These can be broken down into three communication elements called the ideational, the interpersonal, and the textual. These three interact in the invisible and visible ways of meaning making, with a unique grammar that changes with every different mode (Halliday, 1978; Bearne, 2009). The Bound Project, which gives students the freedom to express themselves in any form, encourages the natural occurrence of multimodal presentations. Throughout the history of the project, students have indeed created “communication ensembles” by using images, music, videos, and live presentations all together to display their thinking. This exemplifies the concept that meaning is always made within a layered, cultural context, and language is not the only mode instrumental of communicating meaning.

So far, I have put forth theories that explain the roles of prior knowledge, social interactions, and different modes of expression in a student’s learning. Another crucial idea to consider with regards to the Bound Project is the impact that new technologies and the changing concept of literacy might have. New Literacies is a perspective, which grew in the 1990s, that “views literacy in its full range of cognitive, social, interactional, cultural, political, institutional, economic, moral, and historical contexts” (Gee, 2008, p. 2). This range includes any number of
new types of literacy and the social interactions that arise from them, from graphic novels to blogging. New Literacies gives close consideration to the new technologies, digital literacies and how they have changed communication practices. The base idea is that technology is rapidly changing, and literacy is changing just as rapidly, as technology users create new ways to interact around digital literacies (Leu et al, 2004; New London Group, 1996). The form and function of literacy is changing, expanding, and dividing in new ways to include a variety of ICTs (Information and Communication Technologies), Web 2.0 technologies, multimedia, and more. Also, new literacies are mediated by an even larger social construct now, due to the fact that new digital literacies so often involve community and wider communication (Knobel and Lankshear, 2006). The Bound Project is a perfect illustration of the relevance of New Literacies. When given the choice of mode, my students overwhelmingly choose digital multimedia tools to communicate their ideas. Most of my students use Moviemaker, YouTube, Glogster, and other similar tools to present their Bound Projects, illustrating the pervasive nature of these new literacies. Technology cannot be contained within the home sphere. It is changing the face of literacy, which encompasses communication of ideas and understanding of ideas. Literacy educators must begin to view their field as one that is ever changing and embrace the fact that there is value in new communication methods for education.

Constructivism, multimodality, and New Literacies are the cornerstone principles that run through the Bound Project and the basis for my intended research questions. These theories set the basis by which to analyze a student led, inquiry based, multimodal project that incorporates evolving digital literacies. These theories also influenced the research questions themselves, as I am interested in how allowing students to create using technology impacts their learning and how the students themselves make sense of that process. This set of theories will serve to form a
lens through which I can analyze my findings, and the following literature review will establish a starting point of existing research in the relevant areas.
Chapter 2: Literature Review

This study seeks to address the question “How does the use of multimedia digital literacies impact student learning in English Language Arts?” In an effort to begin with what is already known, this literature review is concerned with summarizing the research that has been done concerning digital and non-digital multimodality with respect to learning and education. I have separated the research into these two categories because the modern interest in multimedia digital literacies is based on the proven value of multimodality prior to the technological revolution we are experiencing. The concept of learning multimodally is not a new one and is the basis of any further more digitally inclined research.

Studies Related to the Value of Multimodality in Learning

Multimodality can have an impact on student learning and communication. This idea is not based only on new technologies. In fact, “at the same time as multimodality is presented as a necessary response to a changed semiotic landscape, it has also been argued that multimodal activity is nothing new” (Yandell, 2008, p. 37). Using these innate, complex communication systems, teachers and students already deal with multimodal social semiotics in the classroom.

When teachers and researchers give students the opportunity to communicate their ideas, students’ natural leaning is to communicate multi-modally (Cope and Kalantzis, 2000). Students tend to use integrated structures for communication that they are comfortable with from their personal, family, or academic lives (Moll, 1992). Multimodality is a reflection of students’ funds of knowledge and their pedagogic habitus (Pahl, 2009; Moll, 1992; Cope and Kalantzis, 2000). In a two-year study with a classroom of 6 and 7 year olds, Kate Pahl illustrated this tendency (2009). The students worked in collaborative groups to build and present dioramas. The resulting
presentations were a blend of visual, oral, and physical communication strategies that represented many of the children’s home lives, which were built on children’s talk. The students’ natural instinct, in order to fully express their ideas, was to delve automatically into a multimodal world. In terms of implications for practice, the author states, “I argue that it is important to understand how collaborative multimodal texts can be constructed in relation to the processes and practices that have gone before, including the talk...[so that] a more situated understanding of these practices can be developed” (Pahl, 2009, p. 209).

Similarly, in studies done looking at student multimodal projects, visual and verbal modes of communication worked together consistently, and they were both needed in order to grasp the complete meaning (Bearne, 2009; Stein, 2006; Pahl, 2009; Yandell, 2008; Luke, 2000). Bearne’s (2009) research looks at a class of 7-8 year olds who were working on combining science and design to present projects related to electrical work in playgrounds. In Bearne’s research, she examined three sample student projects of varying types in which children were able to achieve “coherence through combining modes” in order to fully express themselves (Bearne, 2009, p. 182). The study of children’s work strongly indicates that it is not just the combination of different modes, but the interaction between the different modes that creates meaning. In the projects, verbal explanation supports visual illustrations and kinesthetic performances, creating a depth of meaning that no one mode could accomplish on its own (Bearne, 2009; Pahl, 2009; Jocius, 2013; Elkins and Wyatt-Smith, 2011). “Models, examples and deliberate teaching are needed if children’s own multimodal text production is to be fostered and developed,” which places the focus on teachers understanding how to maximize the use of this strategy (Bearne, 2009, p. 185).
Jocius (2013) reported that multimodality not only improved comprehension but changed it. She completed a study in a small Midwestern city with thirty-six 12th grade students, from two AP English classes. Over the course of 6 weeks, students communicated their analyses of “The Kite-Runner” using a variety of modes. Allowing students the opportunity to choose their own modes of communication subtly altered the meaning that was communicated in each case. Researchers concluded that “choice of compositional tool has an important influence on the types of modes students employ, the emphasis on different modes within compositions ultimately results in the creation of varying tones and moods” (Jocius, 2013, p. 323). This idea comes up again and again, Kress himself stating that “Each mode forces me into making certain kinds of commitments about meaning, intended or not. The choice of mode has profound effect of meaning” (Kress, 2004, p. 111). In a long-range study, looking at data gathered over the course of 75 years, Bezemer and Kress (2008) examined what communication modes were used by students aged eleven to fourteen. They concluded that, in moving from one mode to another, social context is changed; therefore, different opportunities for learning are created. Multimodality is directly relevant to teachers as “a mode is a socially and culturally shaped resource for making meaning. Image, writing, layout speech, moving image are examples of modes, all used in learning resources” (Bezemer and Kress, 2008, p. 171). Multimodality is not about what students will communicate, but how best they can communicate the message they wish to get across.

Teachers who are actively employing multimodal strategies recognize that multimodality increases comprehension and changes the type of learning that takes place. Yandell (2008) explored this idea of teaching through multimodality in his study of East London classrooms by observing 37 hour-long lessons with adolescents (2008). In the classroom, the teacher used
visual imagery, the whiteboard, and student movement to turn text-based lessons into more multimodal experiences. For example, the teacher projected an image of a map up on the screen as students walked in. This point of focus automatically changed the conversations and was immediately arresting as the first method of communication. Yandell maintains that “this difference is manifested in speech, in that the first conversations in the room are about something that is present – the image on the screen” (2008, p. 38). The teacher had communicated without uttering a single word. In the same study, students enacted works of Arthur Miller and the teacher allowed them to explore how gesture, movement, space, and intimacy could change meaning in the classroom. The author maintains that teacher intention is the cause, stating that “this multimodal multi-voicedness is rendered possible by the teacher’s generous – loosely defined, unprescriptive – conception of the activity” (Yandell, 2008, p. 52).

Multiliteracies is the concept that communication is being changed every day by new technologies and the variety of new texts that people encounter (Mills, 2009; Stein, 2006). The term also carries with it an educational agenda concerned with changing literacy in schools to more accurately reflected the changing tapestry in the real world (Cope and Kalantzis, 2000). Multiliteracies is related to multimodality in that use of a variety of modes in communication is creating these changing literacies. The critics of multiliteracies claim that “this emphasis on the dynamic representational resources used in popular, multimodal texts may raise concerns among educators who value the unchanging merit and meaning of ‘historically ratified texts’ - a cultural heritage approach” (Mills, 2009, p. 105). The debate concerns the place of quality literature in the classroom, when it seems that a variety of popular, multimodal texts are taking over. Some researchers propose that, as a result, educators may be reluctant to use technology related multimodal strategies that have proved successful.
However, this does not hold with the concept of an ever changing and shrinking world. The dominant literacy tradition of the west does not consider what is important or traditional in marginalized cultures, which are part of global relationships (Mills, 2009). Also, a cultural heritage view does not acknowledge the abundant diversity of texts that children actually encounter in their worlds. A variety of printed texts and electronic texts stimulate children’s interests and education (New London Group, 1996; Kress, 2004; Jocius, 2013). They should not be considered inferior simply because they are different than the traditional texts that have been deemed worthy. Multimodality “captures the multifaceted and holistic nature of human expression and perception, involving the whole body in the process of learning and semiosis” (Mills, 2009, p. 106). Many think that a middle school classroom, like mine, is a place to solely focus on “traditional” texts, not a place to experiment with new modes. However, using a variety of modes to communicate and receive information is an intuitive way of learning and teaching because it mirrors the natural, multifaceted, and holistic way in which we live and allows for more complex communication that any one mode might (Bearne, 2009; Pahl, 2009; Stein 2006; Bezemer and Kress, 2008; Elkins and Wyatt-Smith, 2011).

Studies Related to the Value of Digital Multimedia

The influx of new technologies into the world of literacy opens up new opportunities to enhance learning through multimodality in the classroom. Digital literacy is deeply grounded in interactions, relationships, evaluation, and new cultural communications. It, like any other kind of literacy, is embedded socially, changes in different contexts, and is mediated by a variety of different social practices (Knobel and Lankshear, 2006). Researchers have shown that combining these new types of texts with the innate way that students communicate multi-
modally allows for increased comprehension and preparation for communicating in a modern world (Jewitt, 2008; Bezemer and Kress, 2008; Elkins and Wyatt-Smith, 2011; Jocius, 2013; Cope and Kalantzis, 2000). An idea so deeply involved with communication outside the classroom needs to make advances into the world of schooled literacy.

The combination of multimodality and new literacies results in a new grammar that has to be taught at school in order for students to be able to keep up with the world around them (Elkins and Wyatt-Smith, 2011; Kress, 2004; Cope and Kalantzis, 2000). Teachers cannot just teach print literacies and expect students to be able to communicate in an online world. “Current research suggests that while print literacy skills are incorporated into online environments and are central to how informal teaching and learning occur there, they are only part of the repertoire of skills and strategies needed to handle the multimodal representations of meaning that are found in online environments” (Elkins and Wyatt-Smith, 2011, p. 902).

Literacy is no longer just about printed text. Jewitt’s study focused on the idea that all communication modes feature in the “learning potentials of teaching materials and the ways in which teachers and students activate these through their interaction in the classroom” (Jewitt, 2008, p. 242). The researchers found that schooled knowledge is shaped by the modes chosen by teachers and students and the context within which they are used, so that multimodality is not just about how knowledge is presented, but it changes the knowledge (Jewitt 2008; Kress, 2004; Bearne, 2009). Educators can no longer ignore that “how knowledge is represented, as well as the mode and media chosen, is a crucial aspect of knowledge construction, making the form of representation integral to meaning and learning more generally. That is, the ways in which something is represented shape both what is to be learned, that is, the curriculum content, and how it is to be learned” (Jewitt, 2008, p. 241). These forms of representation are increasingly
based on using multimedia digital tools which may be new to schools, but are often well established in the private lives of students (Lankshear and Knobel 2003; Albers and Harste, 2007; Cope and Kalantzis, 2000). It is, therefore, the responsibility of education to take advantage of these resources and opportunities in order to best educate students.

Before the changing world leaves our students behind, it is imperative for educators to consider how children who grow up in a digital environment might think and learn differently, instead of focusing entirely on previous concepts of literacy. Some educators exist in a state of disequilibrium as they “attempt to integrate [their] knowledge of reading comprehension based on print technology and the world of books with our emerging knowledge of comprehension in new literacies spaces” (Dalton and Proctor, 2008, p. 297). Instead of sticking at all costs to solely traditional print texts, it is important for teachers to consider how digital literacies might support comprehension (Luke, 2000). Student comprehension processes change and grow along with their exposure to new technologies (Dalton and Proctor, 2008; Bulfin and Snyder, 2008). It is possible, therefore, that using digital literacies would help to minimize struggles students have with word recognition or fluency, and increase their overall comprehension, critical thinking skills, and academic social practices. Studies have illustrated success in this area primarily through the use of Text-to-Speech readers, hyperlinks, support aides, and the use of multimedia to enhance the understanding of digital texts (Dalton and Proctor, 2008). Students reading with interactive diagrams and other support aides illustrated greater vocabulary retention and conceptual learning (Dalton and Proctor, 2008; New London Group, 1996).

Used in conjunction with print texts, multimedia and other technologies could be very powerful tools. In fact, several studies illustrated that students remembered word translations and scientific concepts best when using both verbal and visual learning tools (Dalton and
The multimedia principle is based on the concept that "people understand more deeply when scientific explanations are presented with words and pictures than with words alone" (Mayer, 2008, p. 360). Mayer’s experiments, done using a science-based curriculum, strongly illustrate increased comprehension from the use of multimedia over the use of printed text alone. Further research needs to be done in other genres to see if the multimedia principle holds true, such as in the world of literacy. Considering the place digital literacies hold in the development of children today, it seems likely that the multimedia principle will hold true in all curricular arenas (Knobel and Lankshear, 2006; Luke, 2000).

**Studies Related to a Multimedia Digital Literacies in Teaching, Assessment and Policy**

According to Cope and Kalantzis, “written-linguistic modes of meaning are part and parcel of visual, audio, and spatial patterns of meaning,” illustrating the importance of considering new literacies in the classroom (2000, p. 5). Ostenson, who actively incorporates multimedia in his own classroom, states that there is a “need to bring students into a new century, to help them develop new literacy skills and to refine their critical thinking” (Ostenson, 2012, p. 167). He maintains that part of the problem teachers have with accomplishing this task is that teachers often struggle with assessing using media technologies and need to be well trained in order to do so. He focuses on authentic assessment and feels that there is “carryover between traditional media and new media” that can help to smooth the transition into teaching and assessing with multimedia (Ostenson, 2012, p. 168). Ostenson created a criteria to use in evaluation of multimedia assessments to ensure that students are employing critical thinking skills in their work. In the end, teachers need these kinds of rubrics and a language they can learn to allow them more comfort in teaching with digital literacies. Ostenson himself believes that
“This is our job now as teachers: to help students develop their critical thinking skills needed to make the most of new technologies and media” (2012, p. 175). The goal of my study is to help teachers and administrators see how using multimedia in the classroom can impact the learning of students according to the standards.

The “Center for Excellence for the Advancement of New Literacies in Middle Grades” at the College of Charleston has a different atmosphere than a typical public school classroom. Haywood states, “A move to a participatory culture in schools is difficult when the educational system at large has been established to hone the skills of individuals as assessed through high stakes year end-standardized tests” (Hagood, 2011, p. 12). A study focusing on the work of the center determined that teachers there, who have customized training and freedom to explore, have actually bought into the plurality of texts. This seems to indicate that if we allow all public school teachers the same training and opportunities, there would be less fear and more active involvement of educators. When the center began their work with teachers “they were reticent to use technologies in their instruction that reflected students’ interests (e.d., text messaging, discussion boards, blogging) for fear of losing some control of students’ attention or of violating some school policies” (Hagood, 2011, p. 2012). Yet the success that has come since strongly supports the idea that change is possible for public school teachers and their classes.

Though this isolated work is compelling, many teachers are faced with the more immediate problem of meeting the Common Core Standards in their classrooms. Teachers may feel that the standards “signify a focus on standardization that is both intriguing and potentially stifling” (Avila and Moore, 2012, p. 27). While there are a few standards that do address digital literacies (English Language Arts Standards, 2012), “digital literacies maintain a relatively low profile in the remaining English/Language Arts standards” (Avila and Moore, 2012, p. 28).
However, teachers can and should go beyond teaching those digital literacies to teaching all language arts skills while using digital literacies as a tool. The standards are malleable in this way and teachers can address reading and writing standards by including digital literacies to help students “approach literacy as a live event, with texts that change and evolve” (Avila and Moore, 2012, p. 31).

One of the many significant benefits of incorporating digital literacies is that often the “audience multiplies, as do the discourses they can use”, which allows students to become fluent in a variety of modern communication discourses (Avila and Moore, 2012, p. 31). Students move beyond the task of writing as they realize that “digital text is experienced overtly as being available for rewriting, reconfiguration, and in general as a resource for meaning making” (Lankshear, 1996, p. 175). This digital journey will, in fact, help students to grow and improve in many of the Core Curriculum Standards while using a “context that is familiar to students” (Avila and Moore, 2012, p. 31). While the standards are being implemented to bring order and standardization to education across the country, the “crucial aspect is for educators to apply a critical literacy lens to the standards themselves” in order to incorporate digital literacies and move towards the future of communication (Avila and Moore, 2012, p. 32). The Partnership for Assessment of Readiness for College and Careers (PARCC) is a group that has created new computer-based standardized testing, which will be implemented in New Jersey for the first time this year. The testing will include multiple modes of expression and expect students to be basically literate with computer based tasks. With our students now being assessed using new literacies, it is important for teachers to step into their insecure places and embrace this type of learning in the classroom.
Many teachers are reluctant to explore different modes in the classroom because assessment has not caught up with the changing world (Newfield 2011; Siegel 2012; Ostenson 2012). The job of literacy instructors is to prepare students to use language and literacy skills to be successful in the world around us, which now includes teaching students how to “read” multimodal texts. When tackling that task, teachers should be assessing students based on multimodal texts, but this is largely not happening (Siegel, 2012, p. 676). In a culture doused in standardized testing, teachers find teaching to the test a common practice. However, when multimodality is tapped into in order to assess students, new worlds of comprehension, expression and true communication are unearthed. Students are able to use strategies that they feel more comfortable with from their digital social media Discourses (Gee, 2003). For example, Newfield (2011) discusses three different multimodal studies that took place in South Africa. Each illustrated that students were able to communicate using modes that are nontraditional in the classroom for assessments in the form of group presentations. One group of students spoke with their bodies to tell stories, another used puppets/dolls that had similarities to local fertility Gods, and the final group performed their local vernacular praise poems (Newfield, 2011, p. 30-32). Allowing students the opportunity to tap into their own funds of knowledge for assessment helped them to gain confidence and be successful in the classroom (Moll, 1992). The article also maintains that multimodality creates different meanings, “enabling the expression of meanings which are inexpressible in other” modes (Newfield, 2011, p. 29). Therefore, limiting a student’s options when it comes to modes of expression will definitely change and, in some cases, diminish the meaning of the text itself (Luke, 2000).

Even when administrators give teachers the flexibility to allow the use of different modes for assessment, there is a lack of knowledge on how mastery should be measured. Assessing
multimodal pieces requires knowledge of how creation and composition might be different. For example, “staged multimodality” references the idea that multimodal creation happens in stages, over time, in different modes (Wyatt-Smith and Kimbler, 2009, p. 79). Therefore assessment might be less summative and more of a process, assessing different pieces at the stages that make most sense. Similarly, assessment requirements for multimedia projects should really consider that many of the projects are transmodal, crossing several different modes, and should not be evaluated with respect to only one method of communication. In order to accomplish this, a “digital meaning-maker is required to move between and across different modes and even technology platforms to create a text and communicate meaning” (Wyatt-Smith and Kimbler, 2009, p. 77). Though multimedia digital literacies impact the way students learn in the classroom, assessment practices have not adapted to the sophistication of these communication processes. Allowing a more multimodal approach to assessment can enable students, especially those at risk, to communicate in more comfortable and innovative ways (Siegel, 2012; Wyatt-Smith and Kimbler, 2009). “More than ever, teachers and students are expected to adhere to standards and assessment practices that look back to an imagined past where multimodality might have a place in arts education, but not in the literacy curriculum” (Siegel, 2012, p. 675). Classroom assessment practices need to adjust. My research study illustrates one example of allowing the use of multimedia in an assessment based on the Common Core academic standards. It will hopefully add to the conversation surrounding the possible benefits of this type of literacy assessment.
Studies Related to Perceptions Impacting Multimedia Digital Literacies in the Classroom

In the context of this study, I use the term “multimedia digital literacies” to refer to the new tools and methods of communication that have arisen from the technological revolution and involve multimedia applications. Teachers, parents, and policy-makers alike seem to acknowledge changes in the digital world around them, but do not always make the connection between that world and the world within the classroom. The perspective of the educator is a key factor to consider if any real change is to occur. If teachers and administrators do not buy into transformative use of multimedia technology, then nothing will change (Smolin and Lawless, 2003).

In a qualitative study based on observations, diaries, and interviews done with teachers and parents in a small, rural town, researchers noted that parents noted the importance of new media, but still felt that traditional literacies were more important and more powerful (Corbett and Vibert, 2010). It seems that

Regulation and negotiation notwithstanding, recent research is uncovering a significant transformation in the way youth consume and produce media. The amount of time young people spend using interactive and networked information technologies has already surpassed that of older transmission-oriented media like television and movies. In addition, the Pew Foundation recently found that the gaming industry has surpassed the film industry is economic importance. (Corbett and Vibert, 2010, p. 15)

Despite this data, the study shows that teachers are unsure of how to best integrate digital literacies and parents still view as less important than traditional literacy. The researchers conclude that “plastic text is understood to be both seductive and dangerous, and are at the same time insufficiently ‘educational’ or challenging enough to promote high quality literacy, which
ironically, is now thought to be more necessary than ever before” (Corbett and Vibert, 2010, p. 13). Teachers and administrators often find themselves being swayed by desires of the parents and fear of changing the old guard. In order to move forward, they need to “find ways, on the one hand, to draw these new literacies into meaningful engagement with curriculum… Nevertheless, this level of community work is time-consuming and teachers are pressured to devote time preparing for state assessments and other administrative constraints” (Corbett and Vibert, 2010, p. 20).

A study pursuing these same ideas compared perspectives of United States middle level teachers with those of Chinese middle level teachers. The 193 U.S. and 98 Chinese teachers, both from rural and urban areas, completed surveys and participated in focus groups (Spires et al, 2012). The majority of them described themselves as intermediate technology users and claimed an interest in incorporating more technology into the classroom, but felt that they needed more support and customized training. However, the surveys showed that both groups placed media literacy at the bottom of their priority list. The authors conclude that this is part of the problem as “central to closing the gap between in-school and out-of school student technology use, both in the United States and in China, are teachers’ dispositions and uses of technologies to support new literacies” (Spires et al, 2012, p. 3). Chinese teachers seemed more inclined to branch out creatively, while American teachers were concerned about standards and standardized testing. American teachers found that the education system is becoming less creative and more geared towards standardization, which does not leave time for exploration with technology. However, Spires et al determined that

Specifically, since the 21st century workplace is infused with digital communication and information management systems, workers are expected to have sophisticated
technological skills and dispositions. Additionally, the P21 report suggested that, since young people are becoming increasingly dependent on technologies to communicate, gather information, and extend social experiences, it is essential that our educational system evolves to support a new definition of what it means to be literate in the 21st century. (2012, p. 2)

Teachers seem to find it difficult to navigate the tensions between testing, standards, and the modern digital expectations of the world.

Yeo (2007) writes about a study concerning teachers’ conceptualizations of composition and literacy and found that teachers tend to teach the way they grew up, which results in limited use of New Literacies. There are some problems related to access to technology and some related to classroom management, but largely teachers who were not technology users stayed away from using it in the classroom. Some teachers do use technology in the classroom but use “the computer as a tool for traditional literacy, rather than as transformative to it” (Yeo, 2007, p. 121). This may impact students’ familiarity with tools, but does not relate to real multimedia digital literacy as a new type of literacy. While several of the teachers recognized

A fundamental shift in literacy practices, it doesn’t impact the way [she] approaches it in [her] classroom, this disconnect can clearly be seen between how the world is and how the teachers teach, even within their own awareness. Is this disconnect something we have simply come to expect from schools? So, what is fascinating here is the recognition that technology ‘has changed our whole world’, so it has to have changed us, and yet the relatively minor impact on [her] classroom (Yeo, 2007, p. 122-123).

As we move forward, literacy educators need to realize that the world of communication has been dramatically altered and, along with it, how and what we teach should be altered as well.
One tragedy of education in the 21st century is that “literacy has been cut loose from its moorings, but this fact is largely not recognized in schools” (Yeo, 2007, p. 128).

In a study done with 19 active and pre-service teachers, Boling (2008) investigates how educators view the complex relationship between literacy and technology. Using a design-based research method, Boling collected qualitative data from students in a teacher education course entitled “Literacy and Technology” (Boling, 2008). At the beginning of the course, some of the teachers felt the use of blogs and multimedia tools were recreational, others that it was unsafe, and others still that it was way too public. The participants seemed to illustrate the idea that many literacy instructors use technology as a method of completing age-old tasks and do not see its transformative potential. The professor researcher considered adjusting the course to effect change in the perspective of the teachers. She states,

I ended the semester wondering if I had placed too much emphasis on foundational literacy skills and on textual rather than multimodal ways of knowing. I also wondered whether students would have made more connections between technology integration and literacy learning had I placed a stronger emphasis on the ways in which children understand language through different modalities. (Boling, 2008, p. 95)

Through the course of the rest of the study, the use of hands on technologies, real world examples, multimodal tools and rich discussions, the teachers’ ideas on literacy and technology evolved to understand a deeper relationship between technology and literacy skills. This type of dedication to professional development and distribution of teacher planning time is crucial for any real change to occur in an educator’s approach to the curriculum. As Boling states,

Findings from the study suggest that teacher educators might want to highlight the complex views that surround literacy and technology. They might also want to design
courses that change the belief that technology integration is only valuable when it is shown to support foundational literacy skills. In today’s information rich, Digital Age society, being literate involves much more than simply being able to read and write. (Boling, 2008, p. 95)

Teachers’ perceptions of their role as technology implementers and literacy role models impacts how they use multimodal digital literacies within the classroom. Understanding that the world of literacy has been changed by technology is not enough. Teachers need to be supported, trained, and guided through the process of transforming literacy through technology. My study seeks to show how well multimedia technologies can be used to give students an in depth understanding of high level literacy skills. This information will help administrators justify giving teachers much needed support and help teachers feel more confident about using multimedia digital literacies in transformative ways.

Moving Forward

The goal of my study was to shed light upon the ways that digital literacies could be used to expand multimodal literacy education and assessment, as well as how students themselves understand this process in their education. The above research illustrates both the importance of accessing the power of multimodality to help students learn and the necessity of incorporating digital literacies into the classroom for future student success. Combining these two ideas in the natural marriage of multimedia raises questions for education. What is left to learn? What my research hoped to consider was how teachers could address traditional literacy standards while utilizing these multimedia digital literacies in the classroom. Does multimedia help students to be more successful according to the standards? Does the use of multimedia show changes in
learning beyond the standards? If so, do the students have any metacognitive understanding of how or why that occurs? Answers to these questions may help to clarify for teachers if they should pursue new ways of literacy instruction and how to do so while also meeting stringent requirements. There is no shortage of recent research related to technology in education, but there is room for teachers to see the impact this kind of learning can have on students in a real classroom that is subject to this accountability environment.
Chapter 3: Methodology

Design Overview

I conducted this case study as a teacher researcher, working in my own classroom to collect qualitative data concerning how using multimedia in a literacy classroom impacts student learning with regards to the Core Curriculum Standards and classroom achievement. I also collected data related to how the students themselves view their learning when multimedia is involved. The study involved comparing traditional written work done by students with examples of their own work on the same topic done using multimedia digital literacies. A large portion of the data came from surveys and conversations with the students in which they discussed how they themselves saw their work impacted by using multimedia. With this information, literacy teachers will be able to better make decisions about incorporating multimedia digital literacies in the classroom and understand how those decisions will impact success. In order to gain this depth of information, a qualitative design was chosen for this study as “a means for exploring and understanding the meaning individuals or groups ascribe to a human or social problem,” such as incorporating technology into an accountability based educational system (Creswell, 2007, p. 3). The study is a within-site study as it will be completed within one classroom at a New Jersey middle school.

Qualitative data was collected for this study through classroom observations, pre, mid and post study student surveys, multimedia presentations, individual student led project walk-through conversations and focus group discussions. I have used New Literacies as part of my theoretical framework and acknowledge that incorporating multimedia is important for modern education (New London Group, 1996). However, I had no predetermined ideas about the impact of using multimedia to address reading and writing standards. This study is not intended to argue
that literacy practices need to be changed or that multimedia does not address necessary standards. It is intended to add to the body of evidence to help educators make curriculum decisions in light of national standards, state testing, and a changing field of literacies. In addition, examining how students think about using multimedia may illustrate previously unconsidered factors for educators. The goal here is not to prove the efficacy of one method or the other, but to shed light on the process so that teachers and administrators of the 21st century have the information to make data based educational decisions.

Pilot Study

In February/March of 2013, I completed a pilot study in order to test the procedures outlined in this proposal. Of 95 students who volunteered, I selected two groups composed of three students each for the pilot. As planned, my purposeful sampling was based on multimedia use and prior achievement in language arts class. I chose one group of “A” students and one group of “C” students who also happened to be special education students. These students self-selected their groups, completed before and after surveys, wrote detailed pre-assessment responses, and allowed recordings of their Bound presentations. Some of them also participated in an after school, voluntary, focus group discussion in which I posed general questions to the group about their project experience.

The first group, Kelly, Raquel, and Alice, were special education students in my eighth grade class who generally achieved “C” grades in language arts class. These girls used multimedia in their project to overcome struggles they have with their writing. As a result, they were able to communicate powerful thoughts and connections that have a hard time explaining through in their writing. Because they felt comfortable with a mode of communication where
their achievement was not limited by their disabilities, they were able to draw unique conclusions and support their ideas in ways that the standards require. Raquel, Kelly, and Alice’s project indicates a much deeper level of mastery of the standards than their written responses showed. An adapted version Vygotsky’s Zone of Proximal Development (1978) is applicable here. The students used familiar technologies as a method of scaffolding their own learning and making the leap to new academic territory. Communication is no longer about writing alone. New Literacies Theory suggests that these new modes of communication are transforming the world outside the classroom (Knobel and Lankshear, 2006). Raquel, Kelly, and Alice’s results indicate what could happen if these modes were allowed to transform the world inside the classroom to allow access to learning for all students.

The second group, Norman, Jake, and Jason, were excellent students who exceled in reading comprehension, writing and other aspects of language arts class. These students chose to use multimedia in their project to expand their creativity and the possibilities of their ideas, not to compensate for academic limitations. As they were already strong students, the use of multimedia digital literacies in Norman, Jason and Jake’s project did not result in significant growth with reference to the standards. However, there were other gains that may be considered just as significant for truly meaningful education. Norman was able to come out of his shell by using multimedia to scaffold his performance, which led to more creative thinking. Jason found comfort in technology and no longer feared being asked to go beyond the usual basic structure to something different and challenging. Jake reveled in the ability to think outside the box and ask others to do the same. This kind of learning is not measurable by the core curriculum standards, but is nonetheless crucial to classroom achievement. Literacy is no longer simply about being able to read books, write essays, or give speeches. It is about communication and, to take
Dewey’s quote in a modern vein, the communication that the students have in common is mediated through technological literacies.

**Changes After Pilot Study**

After completing the pilot study, some changes seemed necessary to glean more descriptive data from the study and to verify information as accurate. Firstly, during the focus group of the pilot study, I opened the experience up to all students in order to gain the widest variety of insights. However, not all of the students I had chosen to write about decided to attend the focus group. Though I was able to gain interesting understandings about student opinion in general, it would have been even more beneficial to hear my selected groups discuss the Bound Project experiences further. For the next iteration of this study I decided to specifically invite selected groups of students, while also opening the experience to a wider group of volunteers.

Secondly, during the pilot study I focused on two student groups, each including three students. The first group were typically high achieving “A” students and the second was a group of special education students that typically achieved “C”s in class. After reviewing this data, I decided to add a third group. For the dissertation study I also looked at how a mid-level group of students who achieve “B”s in class might change their performance through the use of multimedia tools. I was interested to see if similar factors that applied to the other student groups would be at play in this group as well. As this new addition added more data to bridge a gap in information, it helped to draw more conclusions about the impacts of multimodal technology usage.

Additionally, I invited the selected groups to a project walk-through/member check. While I was able to use the focus group to double check ideas taken from the student surveys
during the pilot study, there were some ideas that went unchecked. For the dissertation study, I asked the students themselves to read through, not a full analysis, but a profile of their own ideas as presented through all of the Bound Project work that they did. In this way students would be able to confirm that their work and their thoughts were accurately represented. Also during this meeting, each student talked me through a video of their multimedia presentation, outlining individual student contributions. This became a major source of helpful data, as it assisted me in isolating changes and potential growth in students separate from their group members by looking at what they themselves created for the project. This also gave me insights into why students made certain choices and decisions about multimedia and how their views may have changed over the course of the project. By changing these factors, the final study is more accurate to the student experience and more detailed in qualitative description.

**Role of the Researcher and Validity**

As a teacher, I actively incorporate multimedia and other digital literacies into my classroom, and this background knowledge definitely impacted the interpretation of this study. I have also led many professional development workshops within my school district on updating literacy instruction to include digital literacy tools. I have reconfigured much of my teaching to incorporate various multimedia tools in order to keep students culturally literate about the changing methods of communication. While I have seen a positive impact in the classroom, before the pilot study I had no definite notions about whether or not multimedia technology could address the Core Curriculum Standards in language arts. The pilot study data seemed to indicate the possibility of growth in literacy skills, but I needed more evidence to confirm or disconfirm this hypothesis.
During implementation of this study, I took on the role of participant observer, as I am the classroom teacher and researcher. For the first six months of the school year, I worked to become a member of the classroom community, even creating the community culture. I myself collected the data from my own students. Though “this may help the researcher gain insider views and subjective data,” there are some considerations in terms of validity and my positionality (Creswell, 2007, p.167). While I had little control over the student data, the project is one of my own design and implementation. I, therefore, may be seen as seeking evidence specifically to illustrate success of the project and support the use of multimedia in literacy.

In considering this problem, I am using five strategies in order to establish validity for my data. First and foremost, as with many qualitative studies, I have attempted to engage in rich description. The goal of rich description is to create a detailed understanding for the reader of what it would be like to experience the student presentations or performances in person. Secondly, through researcher reflexivity I have tried to make clear my assumptions and notions of what the study results would be. In “owning up” to the theories I hoped would come to light, I have been able to differentiate my thoughts and classroom practices from the data itself. Also, I have carefully searched for and outlined disconfirming evidence. I sorted through the data for what supports the use of multimedia and also for disconfirming evidence that may prove those ideas wrong (Cresswell and Miller, 2000). In addition, in order to check for bias in my coding, I asked another middle school teacher, Laurie Bisconti, to grade/code the pre-assessment and presentation data. An experienced teacher, Ms. Bisconti was the co-creator of the original Bound Project nine years ago, so she is very aware of the related standards and expectations for this work. Finally, during the project walk-through, I had the subjects of the study perform a member check on their comments to be sure there they were accurate to the student’s intended
meaning. Using these techniques, I hope to have created transparency and maintained validity throughout my study.

The Participants

The study participants were volunteers purposefully selected from my own 122 students in a way that was both people focused and structure focused, in order to collect data that would be most useful in addressing the research questions (Patton, 2002). All students completed the Bound Project as part of their coursework and were given consent forms to take home in order to obtain parental permission to be part of the study. Over the course of two previously completed pilot studies, 90% of students did volunteer and signed consent forms. For this study 95% of students returned signed consent forms and data was collected from all those who chose to use multimedia in their presentations.

With such a large number of student volunteers, the amount of qualitative data collected was quite large and needed to be narrowed in order to achieve rich description (Wolcott, 1994). In order to reach a certain level of variation in sampling, I chose three student groups, 9 total individuals, to focus on for data analysis: one group of students who generally performed in the C range or below, one group that typically performed in the B range, and one group that performed in the A range in language arts class (Patton, 2002). Of these students, there were three Special Education students who were chosen. Patton states that “any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared dimensions of a setting or phenomenon” (2002, p. 235). The goal in this sampling was to find students who had chosen to use multimedia for a variety of reasons and to
see how this multimedia use impacted achievement for students at potentially different levels of traditional academic achievement.

**The Bound Project**

For nine years I have worked collaboratively with the Social Studies teacher on my 8th grade team, Laurie Bisconti, to first develop then improve the Bound Project. The project is jointly an explorative literature study of the book “Bound” by Donna Jo Napoli and a historical look at the Ancient Chinese empires. The idea behind the Bound Project is to give the students the freedom to express themselves in a variety of ways, while analyzing literature within a historical and modern context. They have the freedom to choose their collaborative groups, the freedom to choose their topic, and the freedom to choose how they would like to express their ideas. In the first years of this project, there were tensions that arose from group work, fear of technology use, presentation nerves, and lack of multimedia knowledge. Teachers interested in pursuing a similarly open multimodal project should be prepared to spend a couple of years becoming aware of possible stumbling blocks and building in time with groups and extra resources in order to address them.

I introduce the project in March of each year by showing a Power Point presentation, complete with project requirements and examples from past years. Students are expected to illustrate growth in research skills, analyze literary themes, draw conclusions from a variety of evidential sources, explain their own ideas, and support their ideas with evidence. Students are given a choice of four broad theme questions that are related to the deeper ideas we talk about in both classes. The questions below are also are shown on the assignment sheet in Appendix A:

1) What is beauty?
2) How might your worldview be different if you are coming from a more Asian perspective?

3) Why do almost all cultures have Cinderella stories? What role do they play in society?

4) What has been the image and role of women throughout history and have they changed in the modern era?

The students’ assignment is to create a presentation exploring one of the above questions, using whatever media they wish, in order to clearly explain their response. The students choose their own collaborative groups and begin the process by brainstorming to form a thesis that expresses their answer to the question.

After deciding on a thesis, students will work together to find evidence to support their point. They are provided with some guidelines to think about to help get them started on their project (Appendix A). One requirement, in order to bring their inquiry to life, is that students are required to complete at least one live interview to support their ideas. They are given time in the school media center to work on their research and time to meet with their groups in class as well. The project is an assessment, but it also represents inquiry based learning. The idea is that students should use literacy skills related to research, reading comprehension, and writing organization to create their project.

Finally, after collecting and analyzing their information, the students choose what media they feel would best represent their ideas. Throughout the school year, I generally introduce my students to various online tools that they could use to approach a presentation, such as Prezi, PowToon, YouTube Editor, and Animoto. Almost all students choose to incorporate technology, though it is not a specific requirement of the project. It is common for them to use PowerPoint, videos, music, and images to present their work. This study looked at how the choice to use
multimedia tools in their presentation impacted their learning and the overall quality of their work. The presentation took the place of a written response and helped to illustrate student literacy skills related to organizing their thinking, drawing conclusions, making connections and explaining evidence. At the end of a week, students give presentations to the class demonstrating their research and their thinking.

The project is completed at the same time every year as part of the language arts curriculum. The timeline and procedures for student introduction and completion of the Bound Project are as follows:

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timeline</strong></td>
</tr>
<tr>
<td><strong>Time</strong></td>
</tr>
<tr>
<td>September – January 2015</td>
</tr>
<tr>
<td>Late February 2015</td>
</tr>
<tr>
<td>Late February 2015</td>
</tr>
<tr>
<td>Late February 2015</td>
</tr>
<tr>
<td>March week 1 2015</td>
</tr>
</tbody>
</table>
EXPLORING THE BOUNDARIES OF LEARNING THROUGH MULTIMEDIA

<table>
<thead>
<tr>
<th>March week 1 2015</th>
<th>Students complete planning sheet individually, then meet with group to consolidate and review ideas.</th>
</tr>
</thead>
<tbody>
<tr>
<td>March week 1 2015</td>
<td>Students begin research portion of project in the school library.</td>
</tr>
<tr>
<td>March week 2 2015</td>
<td>Students groups have 6 nights at home, and 6 class periods of 42 minutes each, to bring all pieces together in completed presentation.</td>
</tr>
<tr>
<td>March week 2 2015</td>
<td>Students spend 3 days in class giving their own presentations and watching other students complete theirs.</td>
</tr>
<tr>
<td>March week 3 2015</td>
<td>Students complete After Project surveys (Appendix B) online.</td>
</tr>
<tr>
<td>March week 3 2015</td>
<td>After school, voluntary focus group meeting (Appendix C)</td>
</tr>
</tbody>
</table>

Table 1 Timeline

Data Collection

The data that was collected in this study involved a variety of printed and digital documents, including pre and post surveys, pre-assessments, research cards, recorded focus group conversation, recorded project walk-through conversations/documents and the presentations themselves. In preparation for the project, I collected preliminary data in order to understand how the students felt about some of the questions I was interested in and also their ideas about what they would be studying.

Before, Mid and After Survey. Before beginning the actual project, I gave all the students in my class an open-ended survey asking the following questions (Appendix B, Part 1):
Would you rather do the project this way, as an open format presentation, or write an essay? Why?

What do you think is the difference between presenting an idea using different methods and writing a traditional essay about it?

Do you think you will be able to express your ideas in this project?

What does literacy mean to you?

What kinds of technology do you use, how often do you use it and for what purpose do you use it?

What role should technology play in a language arts class?

What do you find to be the most difficult task to perform in ELA class?

Is writing easy or difficult for you?

How would you structure an expository essay?

In an argument, written or verbal, how do you prove your point?

What is “evidence”?

How do you feel about presentations?

The purpose of this survey was to ascertain the students’ pre-study understandings about the possible ways to express their ideas in a literacy classroom, what their expectations were and what they were comfortable with. Also, the survey questions student thoughts on how technology plays a role in the classroom environment. Midway through the project, I gave the students another survey to gain insight into their progress, their struggles, and how their thinking might be changing. They answered the following questions (Appendix B, Part 2)

How is work on the project going?

What have you completed so far?
How have you divided up the work?

Have you run into any difficulties?

Have you decided how to present your ideas to the class?

If so, why did you select that method?

After they completed the project, students answered a list of questions similar to the first survey questions in order to ascertain if they had changed their ideas or developed any new thoughts (Appendix B, Part 3).

**Written Pre-Assessment.** I am interested in how students expressing their ideas through multimedia changed the type or quality of their responses to the assignment. Does creating meaning in this way develop different skills? Does it help address the core curriculum standards? Does it take away from the analysis experience? Does it benefit students in ways not yet considered? In order to create a baseline for achievement, before assigning the project I gave the students a written pre-assessment including the project questions shown on the assignment sheet in Appendix A. Students had an opportunity to work on the questions in school and at home and the freedom to answer the questions in any way they felt would best illustrate their understanding. I coded these responses using the six Core Curriculum Standards for language arts shown in Appendix D. I used these coded pre-assessments as a beginning point to then check for growth throughout the experience of the Bound Project.

**Student Project Documents and Audio Visual Materials.** Most of the evidence I collected were samples of the actual Bound Projects the students created. I saved all relevant files, such as student created movies, Power Point presentations, PowToons, etc. Also, I video recorded all live presentations that incorporated a variety of mediums. Students handed in their research cards and planning work as supporting materials for their projects. All students who
were recorded had previously signed the audio-visual permissions slips located in Appendix G. All recordings were stored on password protected online sites including Dedoose.com. The recordings of these projects were coded, along with the supporting documents, using the codes for the standards and for classroom achievement located in Appendix E. This process provided evidence of growth that took place in student work that may be partially attributable to the use of multimedia digital literacies.

**Focus Group and Project Walk-Through Recordings.** I also ran one focus group with students and had all group members complete a project walk-through. The focus group was composed of 11 eighth grade students who all completed the Bound Project in the project. Participation was completely voluntary and based on parent consent, though the 9 subjects for this study were specifically invited and attended. This after school group discussion was audio recorded. In the conversation I asked students to reflect on the use of multimedia in their own presentations and others that they viewed (Appendix C, Part 1). With this collective information I was able to gain more insight into how the students themselves made sense of multimedia use in their Bound projects. Also, students were invited back to lead me through think-alouds of their presentation, in which we watched the presentations and spoke about which group members completed what parts of the project or had what ideas (Appendix C, Part 2). The goal here was to find out more about individual contributions to the Bound Project to help me track any potential growth. This also helped isolate what the students’ thought about the role multimedia digital literacies may have played in their success with the project. Useful information did come to light during this time that helped to confirm some growth had occurred in terms of the literacy standards and goals.

**Data Collection Timeline**
Table 2

Data Collection Timeline

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
<th>Manner of Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain signed consent from students and parents</td>
<td>February 2015</td>
<td>Hardcopies of signed forms</td>
</tr>
<tr>
<td>Collect preliminary open ended surveys and pre-assessments</td>
<td>February 2015</td>
<td>Completed by students online using Edmodo</td>
</tr>
<tr>
<td>Collect actual Bound project Samples from students</td>
<td>March 2015</td>
<td>Recordings copied and performances videotaped in class. Research cards and supporting materials collected.</td>
</tr>
<tr>
<td>Collect Focus Group data from students and Collect post-project surveys from all students</td>
<td>March 2015</td>
<td>Audio recordings of group discussion. Online secure survey for post.</td>
</tr>
</tbody>
</table>

*Table 2 Data Collection Timeline*

**Data Analysis**

In examining a variety of approaches to analyzing this information, the best fit seemed to be Wolcott's idea of “transforming” data (1994). Wolcott maintains that "analysis" is just one step in a three-step process of transforming data from information gathered to conclusions drawn. The three phases, which include description, analysis, and interpretation, are not
mutually exclusive, and Wolcott actually recommends that they should be continual, reflexive processes. I used these structures throughout my coding, thinking, and research based writing for this study.

**Narrowing the Data.** In the description stage of transformation, which involves letting the data speak for itself, I described the documents gathered from my students. I had 120 students last year, almost all of whom signed consent forms, so my first problem was in considering how to represent such a large volume of data. Wolcott's suggestion of organizing the description by a critical or key event seems to be a logical solution to the problem of overwhelming data. He states that “one way to circumvent the problem of never being able to tell the whole story is to focus on only one or two aspects, creating a story within a story, in which the essence, (but not the detail) of the whole is revealed or reflected in microcosm” (1994, p. 19). This narrowing itself becomes an aspect of data transformation, because I used my own notions for choosing what data was seen at all. My goal was to be as representative of the data as possible in order to allow it to really speak for itself. In order to accomplish this, I chose three student groups to focus on that represented three different academic achievement levels, including students of both genders and students with learning disabilities. I selected this specific groups based on which groups had submitted all the necessary documentation, had been interested in voluntarily attended focus groups, and had used multimedia in their projects. The hope in choosing these three groups was to see how all types of students might perform when using multimedia compared to their typical performance in literacy class.

Wolcott says one way of describing is to “include too much detail...[and] flag items of possible importance,” and in keeping with this I detailed the information gathered from all of the documents collected for the chosen three groups (1994, p. 14). “Qualitative researchers need to
be storytellers, so I will try not to organize the descriptions by document, but by the students themselves (1994, p. 17). I used the document information to paint a picture of the three students in each group, which would allow for the data to be more oriented towards telling a story of student learning and thinking.

**Data Addressing Research Questions.** In narrowing the data, it is important to ascertain which data collected will help to address each of the research questions. This maintains focus and direction in the face of what can sometimes be overwhelming amounts of qualitative data. My large research question is “How does the use of multimedia digital literacies impact student learning in English Language Arts?” It has three sub questions, which are addressed in the following way.

| Table 3 |
|-------------------------------|---------------------------------|-----------------------------|
| **Data Addressing Research Questions** | **Research Sub Questions** | **Type of Data Gathered to Address this Question** | **Explanation of Coding** |
| | a) To what extent does incorporating multimedia into student work help to improve or better illustrate adolescent skills outlined in the Core Curriculum Standards that are specifically related to analyzing text and | In order to answer this question, I collected the student’s written pre-assessment responses to the project questions and then the student’s presentation responses to the same questions. I looked at the way students analyzed, explained and supported their information in both to determine if | Using 6 of the Core Curriculum Standards (Appendix E), I coded what level of mastery was illustrated by the students in both the |


<table>
<thead>
<tr>
<th><strong>presenting/supporting an argument?</strong></th>
<th><strong>there was potential growth between the two.</strong></th>
<th><strong>pre-assessment and the presentation.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>b) How does allowing use of multimedia impact student growth in classroom achievement in ways that may be outside the literacy standards?</strong></td>
<td><strong>To answer this question I pulled from the pre-assessment written responses, presentation responses, and student surveys. This was intended to show if students were able to illustrate anything different in their learning and classroom achievement by using a different medium. I focused on specifically looking at how multimedia tools were tied to any changes, rather than looking at the amount of information they had gathered or time on task.</strong></td>
<td><strong>Unique changes in student growth as measured by standard classroom measures of achievement (Appendix E) were coded.</strong></td>
</tr>
<tr>
<td><strong>c) How do students themselves interpret the impacts of multimedia on their learning, their ability to illustrate learning, and their level of interest?</strong></td>
<td><strong>In order to address this question, data was largely taken from the students’ pre and post surveys, as well as their focus group conversations and project walk–throughs.</strong></td>
<td><strong>This allowed a glimpse into the students’ own thoughts. Codes came directly from the students in the pilot and from this</strong></td>
</tr>
</tbody>
</table>
Coding. Wolcott states that analysis is but one process involved in transforming the data, a process that involves “systematic procedures followed in order to identify essential features and relationships” (1994, p. 24). Rather than the nebulous meaning often assigned to the word, this type of analysis is structured and involves steps, such as coding, that make sense of the data through organization. I attempted to complete this process by coding my document and project data. Coding “involves aggregating the text or visual data into small categories of information” to help organize thinking and themes (Creswell, 2013, p. 184). I used the online data program Dedoose, which allowed easy access to all documents, videos, and audio files and the ability to code excerpts from each of these sources.

I used three areas of codes to make sense of any change in student learning. This list can also be seen in Appendix E. In the first category, I coded using six of Core Curriculum Standards related to reading comprehension and writing that are most focused on in the eighth grade curriculum in order to ascertain how successful the students’ work was in regard to standardized achievement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Explanation of Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL.8.2</td>
<td>Standard related to determining the central theme or idea and tracking its development</td>
</tr>
</tbody>
</table>
Using direct quotes from student work, I coded the students’ pre-assessment responses and then their actual presentations using these same six standards. While it would be difficult to establish a cause and effect relationship, this standards based set of codes helped to show any growth that had taken place as the students switch to a multimedia method of communication. As Wolcott suggests, “evaluation is a form of comparison in which some explicit or implicit standard supplies the comparability by which judgments can be made” (1994, p. 33). This information primarily helped to address research sub-question A, related to how multimedia can help improve standard related skills. Comparing the student work to the Core Curriculum Standards helped to evaluate whether or not multimedia techniques can be used to arrive at the level of achievement students are expected to reach.

The second category of codes largely emerged from the process of my pilot study. The use of preexisting codes can sometimes “serve to limit the analysis to the ’prefigured’ codes, rather than opening up the codes to reflect the views of participants in a traditional qualitative way” (Cresswell, 2013, p.185). With this in mind, I developed most of these codes based on pilot study comments on student learning preferences. The last three codes in the list arose as I was

<table>
<thead>
<tr>
<th>Core Curriculum Standards</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.8.1</td>
<td>Standard related to creating arguments to support claims with clear reasons and relevant evidence</td>
</tr>
<tr>
<td>W.8.1b</td>
<td>Standard related to supporting claims with logical reasoning and relevant evidence (not specifically text related necessarily)</td>
</tr>
<tr>
<td>RI.8.3</td>
<td>Standard related to how to Analyze How a Text Makes Connections</td>
</tr>
<tr>
<td>RL.8.1</td>
<td>Standard related to citing specific evidence from literary text</td>
</tr>
<tr>
<td>SL.8.4</td>
<td>Standard related to presenting information in a focused, coherent, logical manner</td>
</tr>
</tbody>
</table>

*Table 4 Core Curriculum Standards*
coding the data for this study. These ideas came up so often within student responses that it was absolutely necessary to add them to this coding structure in order to accurately represent the student ideas. These codes began as a collection of references to theoretical frameworks and the students’ personal learning preferences. However, after carefully combing through all the student responses, this has become a list of what the students consider to be the eight advantages of using multimedia in learning literacy skills.

<table>
<thead>
<tr>
<th>Code</th>
<th>Explanation of Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice/Flexibility</td>
<td>Students indicate that choosing their groups, their questions, and their medium for presentation was an important factor for them.</td>
</tr>
<tr>
<td>Interest/Engagement</td>
<td>Students indicate that they did well with the project because they were more engaged in it for a variety of reasons, not exclusive to multimedia use.</td>
</tr>
<tr>
<td>Technology Interest</td>
<td>Students indicate that using technology itself plays a role in their success with the project.</td>
</tr>
<tr>
<td>Creativity</td>
<td>Students indicate that they were excited about the project because it offered an opportunity to be creative.</td>
</tr>
<tr>
<td>Ease</td>
<td>Students indicate that they found the project easier than writing an essay, for a variety of reasons.</td>
</tr>
<tr>
<td>Stress Relief</td>
<td>Students indicate that multimedia relieves stress caused by traditional learning tasks and expectations.</td>
</tr>
<tr>
<td>Learn Better</td>
<td>Students indicate that the use of multimedia technologies allows students to better understand material they are presenting and that is presented to them.</td>
</tr>
</tbody>
</table>
Connectability/Students indicate that multimedia technology is easier and more engaging to
Familiarity use because students are very familiar with this type of medium across every
aspect of their lives.

*Table 5 Theoretical Frameworks/Learning Preferences*

These codes helped me to parse the information presented in student surveys, the focus group,
and, to the greatest extent, the individual project walk-throughs. This information addressed
research sub-question C, which is related to how the students themselves understand the changes
in learning that result from using multimedia.

The third category organized the information with codes I might usually use for grading
in the classroom, which detail student effort and achievement compared to average classroom
achievement. For example, these codes marked moments where students incorporated research
as support, drew conclusions from their evidence, or illustrated a confidence never seen before
(Appendix E).

*Table 6*

**Classroom Academic Achievement**

<table>
<thead>
<tr>
<th>Code</th>
<th>Explanation of Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal Response</td>
<td>Student gives a response that gives a very basic answer with no support included or conclusions drawn</td>
</tr>
<tr>
<td>Change</td>
<td>Students response indicates a change from their previous written response or usual class performance.</td>
</tr>
<tr>
<td>Extensive Response</td>
<td>Student response is clear, well supported with evidence, and illustrates thoughtful conclusions drawn.</td>
</tr>
</tbody>
</table>
Unusual Insight | Response indicates a level of drawing conclusions, synthesis and evaluation that is not usually seen in student’s classwork.

Evidence Used | Student uses outside research or references to the text in order to support ideas.

Themes and Connections made | Student bring all explanations together to bridge gaps and connect larger themes.

**Table 6 Classroom Academic Achievement**

The information gleaned from this category primarily helped to address research sub-question B, which is related to how multimedia can influence learning not outlined in the standards, but relevant to classroom success. In this way I was able to build a story of personal growth and change for each student, and better understand why such growth occurred. Coding during the analysis process helped to identify key ideas and relationships.

After coding the pre-assessments, before-project surveys, projects themselves, and after-project surveys, I processed the focus group data. The focus group was a volunteer group of students, many of whom were from the groups I chose to write about. This session was used to glean further insights, as something of a member check, to go over details discussed in the surveys and take them a step further (Creswell, 2007). I coded the transcript of this discussion, largely using the second set of codes geared towards theoretical frameworks and learning preferences. The students were able to offer insights into their own thinking and learning that would not be outwardly apparent from the collected work and helped to address sub-question C.

**Interpretation.** Wolcott’s final process is called interpretation and refers to “a threshold in thinking and writing at which the researcher transcends factual data and cautious analyses and begins to probe into what is to be made of them” (1994, p. 36). This is the part in the process in
which researchers attempt to discover what it all means and if it means anything at all. Based on findings in the pilot study, my hypothesis was that there would be a noticeable link between the use of multimedia and an increase in learning and achievement, both with respect to the Core Curriculum Standards and other classroom learning expectations.

Through a process of direct interpretation “the case study researcher looks as a single instance and draws meaning from it …a process of pulling the data apart and putting them back together in more meaningful ways” (Cresswell, 2013, p. 199). I began by examining the Core Curriculum Standards coding in the written pre-assessments compared to the coding of the projects themselves. This illustrated if there was, in fact, any gain in student achievement and learning and how accurately that gain could be attributed to the use of multimedia. Is achievement in more Core Curriculum standards illustrated in the written work or the multimedia presentation? Of course, as outlined with the limitations, there were several factors that impacted student achievement here. Using the available data, I attempted to focus on the changes resulting from use of multimedia.

I also looked for a variety of results across students of generally different performance levels, in order to determine how much of a role multimedia really played. I attempted to find unifying themes within how the students themselves make sense of the experience of using multimedia. Here I tried to develop some “naturalistic generalizations from analyzing the data, generalizations that people can learn from the case either for themselves or to apply to a population of cases” (Cresswell, 2013, p. 200). However, Wolcott reminds the young researcher that “the sheer accumulation of data carries no accompanying guarantee that anything of importance will be learned” (1994, p. 38). At the very least, this study will add to the body of knowledge surrounding developing new literacies in education.
Finally, in writing up the results of my study, I framed the research in terms of personal experience. This research is a form of action research, of teacher research, as the work is being done in my own classroom, with my own students, and with a project of my design. As Wolcott states, “the only true understanding a human observer can hope to achieve is of oneself” (1994, p. 44). This becomes especially true as this study is so closely tied to my personal experience of teaching. Ideally this personal connection will help to connect with other teachers’ desires to reach their Language Arts students on a new level, using new strategies, and willing to step out of the norm and take a risk.
Limitations

Although this study will add to the literature on using multimedia to improve reading, writing, and communication skills in the literacy classroom, there are limitations to the study. The major limitation is that this study was conducted in one school and therefore is not generalizable. However, rich description of real students in a real school environment can add to data-driven decisions. This could especially be useful for other researchers or teachers for case to case transfer to inform their decisions.

Additionally, this study did not use a separate control group, but instead compared students’ multimedia work with their own written work. A separate control group might allow isolation of factors; however, there is no control group in my study largely because I feel that the written prompt that the students completed first served as a type of “control experience”. This is the standard experience that occurs in a traditional language arts classroom. On many assignments, especially those geared towards assessing the standards or preparing for standardized testing, students are expected to complete on demand writing tasks. Therefore, this pre-assessment task represents the experience we would be comparing and contrasting with the presentation. It is not about comparing a group of students who are writing with a group of students who use multimedia. Instead the thinking is about comparing the same students in a “traditional” language arts situation and one that includes the possibility of new literacy practices. While this is not a true control and variable contrast, I felt that it was important to focus my efforts on one group of students in order to gather every scrap of data on any growth. Further off shoots of this research may consider setting up a control group who participates in the research aspect of the project, but then writes a full essay as their culminating piece.

There is another limitation related to group work. The project and presentation itself are
completed by a group of two or three people, while the original pre-assessment will be completed independently. I tried to counter this difficulty by collecting multiple data sources in order to ensure a more accurate portrayal of student understanding and growth. For example, I led individual students in think-aloud project walk-throughs to discuss how their project work had been divided up between partners. During this process, each student was able to clearly lay out what he or she contributed to the project, why they made those choices, how they felt it impacted their learning, and what role their partners played in the overall presentation. This process, in addition to the survey data, gave insight into potential growth achieved by each individual student. By extracting these specifics from the subjects themselves, and comparing them with what their groupmates said, there was an extensive amount of information collected about each student’s journey through the Bound Project. This hopefully is enough information to somewhat mitigate the limitation of comparing an individual pre-assessment to a group presentation.

**Potential Gains from Study**

Multimedia digital literacies have taken over the way our society entertains itself and communicates with others. Many of the students currently entering classrooms are adept at using and understanding this type of communication (Howe and Strauss, 2000). Often, with high stakes testing and national standards driving curriculum, there is a disconnect between the student schema for communication and what goes on in a literacy classroom (Thomas, 2005). This research has the potential to help educators see the possibilities of incorporating multimedia to address all standards with success, while also helping students become proficient in new literacies that are taking over communication. Also, through this study, educators can see how students themselves view the change in their thinking when multimedia is used. The more
research done in this area, the more comfortable teachers will feel about bringing their ideas of communication into the 21st century, even in an accountability climate.
Chapter 4: Findings and Analysis

Purpose of the Study

As a reminder, the purpose of this case study of “The Bound Project” is to examine how the use of multimedia in the classroom compares with the use of traditional writing in several ways. The goal is to explore how using multimedia as a means of analyzing literature and expressing ideas can help students achieve mastery of the standards and grow in areas of classroom achievement. A secondary purpose is to discover how cognizant students are of the impact using multimedia has on their own learning. This information will be useful in helping educators inform their planning decisions and balance accountability requirements with the changing world of technological communication.

Research Questions

With the freedom to choose their mode of communication in “The Bound Project” many students incorporate technology to help express their ideas. It is common for them to create multimedia presentations incorporating videos, music, images, text, web 2.0 technologies and modes to present their ideas. Comparing this work with their written pre-assessments helped to shed light on how multimedia can effectively aid in student progress and growth. The research questions for this study are:

1. How does the use of multimedia digital literacies impact student learning in English Language Arts?

   a) To what extent does incorporating multimedia into student work help to improve or better illustrate adolescent skills outlined in the Core Curriculum Standards that are specifically related to analyzing text and presenting/supporting an argument?
b) How does allowing use of multimedia prompt or illustrate new student understandings, insights and growth in ways that may be outside the literacy standards?

c) How do students themselves interpret the impacts of multimedia on their learning, their ability to illustrate learning, and their engagement?

Data Overview

Data was gathered from 120 students, but, as planned, I have selected three groups of students from varying academic levels on which to focus. In keeping with my plan to use Wolcott’s three stages of transforming data, I have written a data profile of each of the nine students who have been selected. I attempted to engage in rich description of each individual. The goal is “to focus on only one or two aspects, creating a story within a story” in order to both indulge in rich description of individuals and also to find common themes (Wolcott, 1994, p. 19). Wolcott says one way of describing is to “include too much detail… [and] flag items of possible importance,” so I have attempted to be very detailed in describing each student’s document journey through the Bound Project (1994, p. 19). For each student, I have described his or her pre-project documents, project itself, and post-project surveys and focus group meetings. I have included as many direct quotes from the students as possible, in order to reduce personal interpretation and bias. One student from each group has been chosen as a sample representative to be described below as an illustration of prevalent themes. The other six student profiles are located in Appendix F.

Sample Student Data Profiles

Profile of James. James is a naturally bright, hardworking, and high achieving student in all of his classes and is a member of the “A” level Bound Project group. He consistently receives
A’s in Language Arts class, but his lack of confidence and high level of stress manifest in a continuous stream of insecurity-based questions. He also rarely shows his creativity, because it represents a risk to be potentially less than perfect. If he goes out on a limb with a creative idea, there is no guarantee that he will be as successful, as he is expected to be by his parents and himself.

In his pre-survey data, James expressed a belief that creating a multimedia presentation would really enhance his learning and that of the other students in his class. He states that:

I would rather have an individual open format presentation because first of all, I generally learn more. Having to type information, organize it, and then present it [with multimedia] effectively really allows people to understand and know a topic inside-out. This helps me retain the information for much longer… and also, it is more interesting, intriguing, and beneficial for the audience and myself as well in the long run.

This pre-survey was completed before any introduction to the project and expresses James’s unfiltered opinion that multimedia is a superior way to actually learn concepts. As James has always been successful with essays, a more traditional method of expression, I was surprised that he did not prefer that option as a comfortable choice. In fact, he said “a traditional essay demonstrates knowledge of information, but is mostly beneficial for the kind of people who are very simple and like things just all laid out in front of them.” This seems to indicate a thinking that is opposite of the usual assumption. On the surface, teachers and students may both assume multimedia to be the “easier” choice, but James implies here that it is actually a much more layered and complex choice than the standard essay.

James’s pre-survey information also raises themes of creativity, fun, and freedom. He maintains that using multimedia “is very interesting and exciting and it gives an opportunity to
people who like to be more creative and unique.” He sees this as an important positive, not just for fun, but for maintaining the ability to focus on learning. He even acknowledges his own tendency to shy away from creativity and states “I know I’ll be more determined to present something creatively in a [multimedia] presentation than to write an essay, which usually requires lots of breaks as I lose focus easily on essays and other similar assignments.” The implication seems to be that multimedia offers him the freedom to be creative because it keeps him focused and engaged.

After completing the pre-survey, the students completed a written pre-assessment. This offered them an opportunity to answer the four project questions prior to having the project explained to them. Always a good student, James’s answers were well written, followed the expected structure for my class, and used specific evidence. The following is an excerpt from James’s pre-assessment.

All cultures have Cinderella stories because of their vital role and purpose. They demonstrate important values which each society needs to acknowledge to have a positive mood. Furthermore, the stories similar to Cinderella demonstrate true beauty—which isn’t always seen so easily. In the classic story, Cinderella, a beautiful young girl is treated like a useless servant as she is the daughter of her original mother, not the daughter of her father and her new and cruel stepmother. However, this young women who was treated so lowly by her family finally realizes her true beauty when her fairy godmother gives her the chance to go to the ball in a fancy gown, which draws the attention of everyone, even the Prince. The Prince later marries her after he finds who the slipper which was left behind at the ball matches to. This story shows the true beauty of
people like Cinderella, which is a lesson and moral that is important to know in any leading society.

Here, James illustrates an innate logic in his writing. As he is the strongest student participating in this study, I was not surprised to find evidence illustrating mastery of three of the six standards used for coding (Appendix D). In his first few sentences, James illustrates mastery of standard W.8.1b by illustrating logical reasoning in explaining his main point and answer to the question. His subsequent summary of Cinderella shows mastery of standard RL.8.1 and SL.8.4 because he presents his information coherently and he pulls specific details from the text as support.

Though this response is strong, especially with no preparation, research, or practice, it is lacking in the other three standards based areas. I was expecting to see more of a clear illustration of standard RL.8.2, but James does not specifically name a theme or insight related to the text. He is also vague in creating any supporting arguments, as is expected in standard W.8.1. Most significantly, the question asked students to make connections across different societies with Cinderella stories, and James does not demonstrate any mastery over standard RL.8.3, which references a student’s ability to make connections. Though his response was stronger than that of any of the other eight participants, I saw many areas for improvement.

The process of completing the research and development on the Bound Project usually enhances the detail level of student responses, but does not necessarily improve a student’s ability to make connections (RL.8.3) or draw conclusions about themes (RL.8.2). I was, therefore, pleasantly surprised to see an improvement in both these areas when viewing James’s presentation. Through the information gleaned from the Project Walk Through, I was able to ascertain who completed what portions of the project and could more confidently draw conclusions about each student’s learning.
In addition to his portion of the research, James was responsible for creating the overall vision of his group’s Prezi. This forced him to think beyond the words of the research, to thinking about how the research tied together. This led to James making connections and drawing conclusions. For example, the presentation begins with a thesis statement, which states that all cultures have Cinderella stories because they illustrate the hope, persistence, growth, and ability to overcome adversity that all people need. This thesis represents growth in standard RL.8.2 related to themes, but there is more shown in the visual medium. The visual representation of these four terms is interesting, because they were shown in the Prezi in four separate circles with arrows between them. The arrows did not proceed in one direction alone, but were two-way arrows. This illustrates a reflexive relationship between the four terms, showing that they do not stand separately, but they influence each other constantly in countless ways. This visual representation takes the thesis to another level, demonstrating not only skill in drawing theme conclusions, but in making connections as described in standard RL.8.3. James did not include this reflexive relationship in the thesis, but the point was strongly made in the image, elevating the level of their work automatically.

James chose to use a world map as his organizing visual principle. This illustrates an ability to make connections across time periods and cultures, and conceptualize the big picture. As a very traditional thinker, I would have expected more of a typical, largely text based PowerPoint presentation. Instead he used a world map as the large visual and peppered it with smaller visuals across the countries. There was actually very little text. James explains this decision in the Project Walk Through when he states

I decided what music or pictures to include based on its connection to our question, and
making sure we had enough pictures to reflect all aspects of that example and its connection to Cinderella. For example, when we discussed Athens, we included pictures of the Parthenon, Sophocles, Socrates, a map of Athens, and the Persian Wars map. This is because Athens truly became a Cinderella after defeating Persia in the Persian Wars, leading them to a great, prosperous time in a golden age where they developed things such as the Parthenon, and great thinkers such as Socrates, or playwrights like Sophocles, emerged.

Not only does James himself start to mention the word “connection” repeatedly, but he is able to explain his intentional reasoning about using the map to illustrate these connections. Visually combining images of Socrates, the Parthenon, and Athens on a map of Cinderella story locations makes the connection using a visual medium. A historical place can also be seen as a Cinderella story, a conclusion that was not even hinted at in his pre-assessment writing and would not have been obvious to the audience without the medium of the interactive map. He reaches a level of thinking here that illustrates mastery of all 6 the standards, especially standard RL.8.3, which addresses an ability to make connections.

Another multimedia tool that influenced James’s project was the movement and interactivity of Prezi itself. The boys could have used a PowerPoint presentation that incorporated a map to draw attention to the widespread impact of Cinderella stories. However, Prezi shows the movement between “slides” across a large image, so this means that with each subsequent slide, movement across the world map created a connection between places and ideas. Whether or not this connection was intended is unclear, but choice of medium does have an impact on the meaning created (Kress, 2004). James himself notes the superiority of Prezi in stating that
Right from the start, we all thought we are going to do a PowerPoint or Prezi, but we ended up doing Prezi since it is more interactive, and I am exceptionally good in using it. This quote illustrates how a choice made based on the interactivity of multimedia allowed for the illustration of mastery of standards RL.8.3 and RL.8.2. Also, we see a glimpse into part of the reason they chose this medium. James references his skill level at working with it. This idea of learning well through a familiar medium is nothing new, and sits comfortably within the realm of Schema Theory.

James was also in charge of incorporating the interview with an interested party into their presentation. Some students chose to type up of their interview and it into their presentation as text. Other groups did an audio recording of their interview and embedded it into their Power Points. James decided to include a video of the interview. Showing the interview video in the Prezi allowed the audience themselves to form an impression of the interviewee and her opinions. In this case they chose a local librarian who could gear her presentation towards the literary elements of Cinderella. In a presentation that had, up to this point, been so full of historical connections, the visual of seeing the librarian standing in the library amongst stacks and stacks of books reminded me that the focus of the presentation was really literature. This video clip helped to address standard SL.8.4, which is related to presenting information in a clear and coherent manner. It was also much more engaging for the students, which, as is explained by Engagement Theory, seemed to help the students to focus, comprehend, and learn.

As part of the Bound Project assignment, I asked all the students to complete a reflection on their learning. The following is an excerpt from James’s reflection:

I learned a great deal from studying Cinderella stories of various cultures and their
crucial role. I finally understood how applicable the story of Cinderella is, which is only evinced by the fact that every society either is or has a Cinderella story in their culture. For instance, I never would have thought about it this way without the Bound Project, but history is full of Cinderella’s. For example, Genghis Khan was a Cinderella in his own sense, and so were the Sui, Tang, and Song Dynasty, when thought of as one extensive era. Further examples would be the Mauryan Empire of India or like the story Jared by David Gifaldi, which we analyzed in our ELA class. In actuality, Cinderella is anything or anyone that rises up from small, humble beginnings, to achieve success. Coincidentally, the way they can do this also reveals the significance. The significance of Cinderella stories, which is why they’re found globally, is that they demonstrate many values and ideals which are undoubtedly imperative. These primarily would include hope, persistence, growth, and overcoming adversity. These societies are what truly make a Cinderella.

James is a very self-aware student and was able to see his own learning. In this written response, he echoes ideas illustrated in the group’s presentation. Compared to his pre-assessment response, this paragraph of the same approximate length illustrates growth in learning, shows a change in his understanding of the question and makes unusual insights. Not only does James illustrate mastery of RL.8.3 by making connections in the world of history, but also shows growth in RL.8.1 by using specific examples from other literary texts. Finally, he definitely shows the development of RL.8.2 by developing his theme into a broad statement about Cinderella being anyone. That is indeed an unusual insight for James, who is a strong writer but at times a literal thinker.
In his After Survey, James restates some of his initial ideas. Sounding more confident now, James states that

I would rather do the project as an open format presentation because there is more freedom in an open format presentation, which allows for more thought-provoking, interesting presentations. These extended options allow for better and more enthusiastic learning.

Here, James connects freedom, fun, and better learning in a way that other students do not. Often, students emphasize that a lesson is fun without realizing that the fun allows them access to stronger learning. James is very aware of this connection. James also raises an idea that several other participants in the study emphasized in stating that, “Exploring an idea using different methods is more fun, less stressful and easier to understand.” Stress is one of the new coding ideas emerging from this data that never appeared in the pilot study. Many of the students seem stressed by the idea of writing an essay or by doing a presentation. They felt that using technology reduced their stress, perhaps because it fits within their schema and represents a comfortable way to access and present information.

James also addresses the question of multimedia directly in his After Survey, connecting the idea of using multimedia with higher level thinking once again. He says:

Also, it involves a higher understanding than an essay because in order for it to be effective, using different methods requires a great understanding of the topic so it can be applied in a thorough yet lucid way. We used many visuals in pictures to show the fundamental, underlying ideas for each topic related to the question, yet we also had more than that with videos, which ultimately connected our question to the historical past to modern day.
This analysis of his own work illustrates high level awareness about the function of multimedia in their project. Without the variety of mediums in their Prezi, the project would have been much less engaging and also less thought provoking. The use of “lucid” is a wonderfully expressive choice of word to reference the clarity that comes with visual representation. James’s comments helped to spawn the new code “connectibility” which was not consciously raised by students during the pilot study. He states that:

Using multimedia does help you learn since it connects technology you used to have fun on social media to technology you use in class, easing learning. Technology should be used to ease learning. To be frank, most of today's youth are very tapped into technology as with smartphones, MacBooks, etc. Therefore, if technology is used in class, children will be able to relate their smartphone and other social technologies with the same technology in learning. Technology should be used to enhance learning of topics….Using the technology that we've all most definitely used before made it intriguing and able to connect to, thus making their question and answer much easier to focus on. The more I incorporated technology, the more the information stuck in my mind.

James explains this idea of connectibility by showing the relationship between New Literacies (New London Group, 1996), Multimodality (Stein, 2008), and Schema Theory (Anderson, 2006). He feels students may be able to learn better through multimedia projects because they can access a familiar schema for technologies that they are comfortable with in order to help scaffold their learning and maintain their focus (Vygotsky, 1978). His last comment explains that he himself was able to remember more content if it was presented using multiple digital modes (Stein 2008). James is a wonderful case for really understanding student thinking because
he is so self-aware and capable of explaining his ideas. He even references different learning styles in his thinking about technology during the Focus Group. James says:

> The benefits of using technology are making the information more interesting and easier to learn through various types of familiar media. I do not think we get the same results in writing an essay because essays don't allow for understanding through pictures, videos, music, and other things modern students can relate to.

This hints at benefits to students who have different learning styles and who might be more capable of understanding when visual and audio mediums are used to teach (Stein, 2008). Familiarity, or “connectibility”, is not a new idea, but instead has echoes of Schema Theory (Anderson, 2006). In this case, though, the schema has become the universally familiar use of multimedia technologies. While it is difficult to determine how much this factor, or any of the factors raised by James, influenced student performance, the other students also felt that multimedia was key to their growth.

Profile of Annie. “I like certain presentations. I usually don’t have much self-confidence in my work, so I tend to get very nervous during the presentation so I would only like smaller presentations to present. Otherwise I would probably get really nervous and faint.” In this quote, Annie expresses her own good natured, but self-deprecating concept of her preferences and abilities in class. She is a good student who always completes her work and approaches every assignment with a positive attitude. She always makes good progress in learning the skills outlined in the Core Curriculum Standards, but rarely achieves mastery of all tested skills. Her lack of self-confidence is illustrated in her reluctance to participate orally in class, even though she almost always has the work completed. This insecurity also results in an unwillingness to
take risks in her writing with making connections and drawing conclusions about broad themes. She is much better at playing it safe and laying out basic facts, which is what keeps such a hard working student from achieving A grades in language arts class.

I did not expect Annie to choose to do a presentation because I know her to be shy of speaking up in class. However, in her pre-survey she stated:

I would personally rather do an open format presentation rather than an essay. This is because I would get a better learning experience with the open format presentation and I would understand the content better. Essays aren’t usually my strong point so I would like an open format presentation so I can do well and understand the content.

She illustrates here that her lack of confidence also extends to her writing, but beyond that she also feels that she can learn better through a presentation. She goes on to explain the reason for her preference of multimedia presentations. Annie believes that “when you present an idea using different methods, the viewer can see all angles of what your [sic] presenting and potentially understand it better than if they were just reading it off of an essay.” Similar to James, Sid, and Jack’s idea, Annie hits upon this theme of needing multimedia in order to learn better. This is an illustration of the truth of the Multimedia Principle (Stein, 2008) and also, as New Literacies Theory shows, how pervasive multimedia technology has become in the everyday lives of our students (Knobel and Lankshear, 2006). It is no longer an enrichment for learning, but a there is a learning need that cannot be met through words alone. Addressing this, perhaps not new, but more pertinent need of multiple learning styles seems to be key to reaching the majority of students.

Annie’s pre-assessment response to the question was not as extensive as I would have expected from her usual work, but was right on par with her usual thinking. She writes that
“Cinderella is in almost all cultures because Cinderella shows that everyone can be beautiful. Cinderella was poor and disliked by her sisters but no matter who you are you can be beautiful.”

In this response Annie shows some ability at determining a central theme (RL.8.2), that of beauty, but the theme she has chosen is very surface level. She does not take her ideas further by explaining her arguments (W.8.1), supporting them with evidence (W.8.1b), or making connections (RL.8.3). She herself said that writing is not her strong suit, but this response was even less expressive than her usual work.

The PowerPoint presentation that Annie and her group put together was a perfect example of the term “multimedia.” It included video clips, still images, text, audio voiceovers, animations, live talk and inclusion of real life paper images. In keeping with Annie’s belief that students can learn better by addressing other learning styles, her work on the presentation was very visual and very successful at making her meaning known visually. The group began their presentation with the traditional opening scene to every Disney movie, the Cinderella's castle drawing shown to the tune of “When You Wish Upon a Star.” The group was setting the mood of their presentation and illustrating the visual and musical focus of it from the beginning. They were using this memorable and sentimental scene to place the audience within the Cinderella context emotionally, in a way that an essay could not do as effectively. Next, they included a picture of the Disney Cinderella and then transitioned into a screen with 15 different pictures of Cinderellas from around the world. Annie explained this transition aloud to the audience, but the visual shift from our local concept of Cinderella to the huge variety of different images is what really emphasized the theme of a more global view and intercultural connection (RL.8.3).

This use of transition animations is a very unique and effective way to make connections. Another example of this is a picture included of The Prince holding Cinderella while dancing.
The group then transitioned into a visual of little children holding hands as they encircle a globe. Another very visual transition from a local concept to a global one, and from a focus on romance to a focus on wider themes (RL.8.2). This is portrayed on the screen while Annie stated their thesis that many societies have Cinderella stories in order to motivate people to persevere and achieve their goals. The visual transitions served to take the audience on a journey from personal to widespread, from a one-dimensional theme to a multifaceted concept. These connections and themes, two minutes into the presentation, were already more insightful and impactful than Annie’s entire written response.

The next exciting multimedia turn intelligently combined video, music, and pictures. The group created a PowerPoint slide for each different area of the world that has Cinderella stories. Each slide contained visual images of the location in the world, a copy of the text itself, and sometimes a picture of the main character. Included on each slide was a video of one of the girls performing a rap song about a local Cinderella story and its importance in that area of the world. The integration of music, dance, and costumes creates a fun and engaging way of summarizing texts, which would have otherwise been potentially boring for an audience. This is the specific literary evidence that was lacking in Annie’s written response (RL.8.1). The rap videos were very impressive to me, largely because Annie and her groupmates are naturally shy and all expressed a fear of doing a presentation and being embarrassed. The ability to record these rap performances beforehand and incorporate them into the presentation resulted in the girls taking a risk. They would in no way have done this type of performance live, but preparing it beforehand allowed them a false sense of anonymity and a safety cushion. The song lyrics emphasized similarities across cultures and expressed themes not otherwise included in the presentation (RL.8.3). The singing and dancing engaged the audience and brought the motif of music and
visuals to the forefront. Using multimedia allowed a familiarity, anonymity and comfort that led to a much more confident and detailed representation of their information.

In a final interesting multimedia trick, the girls included audio recordings of themselves analyzing historical societies in order to connect them to the Cinderella theme of persevering and achieving goals (W.8.1b). While Annie and the other girls were nervous about presenting in front of students, the inclusion of a recording allowed them the freedom to speak confidently on their topics without floundering in front of an audience (SL.8.4). This also created a feeling for the audience that they were proceeding through a completely interactive multimedia experience. They were learning through all learning styles at this point and completely engaged. The girls used a variety of mediums to make clear arguments, support them with relevant evidence, make connections across genres, and use specific details as support. Their presentation definitely illustrated mastery in all six Core Curriculum Standards and earned these typically B students a solid A on the project.

An interesting shift took place in Annie throughout the course of the project. As she gained confidence, the stress and fear that she anticipated having during her presentation seemed to melt away. In her after survey and comments in the focus group, her previously tentative appreciation of this type of presentation shifted into a more decisive love. She stated, “I love oral and regular presentations. I find them very enjoyable. I was not nervous at all because I knew the information and was able to explain myself. I really enjoyed this project.” Prior to the project, Annie was so nervous that she jokingly suggested that she might faint! It is possible that this reduction in stress and increase in confidence is based on solid research and preparation, but Annie herself attributes it to the use of multimedia technology. She explained:
I thought I was able to accurately express my ideas using this project because the technology helped us show it in many ways. Using multimedia in the classroom is great because the students are allowed to explore new ways of interpreting something.

There is a success here not measured by the Core Curriculum Standards. Annie and her groupmates were able to make insightful connections and express their creativity because they leaned on multimedia technologies that helped them to feel confident and reduced their stress.

Annie was also bolstered by the assurance that her audience was able to learn extremely well from her presentation. She went into the process believing that multimedia helps students to learn better and express themselves well, and that feeling was affirmed for her throughout the project. She states:

The [projects] that had technology provided us with pictures, animations, and videos that could really give the audience a better understanding of what they were trying to prove. Multimedia provides different resources that people can choose between based on how they learn individually. The benefits of using technology for this project are you can have a visual teaching. You can prove your point through pictures, videos, animations, and many more features. Being able to have access to both, informative evidence and videos and pictures is great which can really benefit your presentation.

Without knowing the term multimodality, Annie is referencing the idea. The original conception of the Multimedia Principle has expanded with the ever expanding possibilities for ways to communicate information (Mayer, 2008). Now that students have the idea of accessing multiple mediums at the same time as part of their learning schema, it seems to be a very successful way for them to learn (Andersen, 2000).
In her reflection, Annie illustrated tremendous growth in her understanding of the topic and her ability to communicate her thinking. In her pre-assessment, Annie had reduced the concept of Cinderella to a basic, fairy-tale understanding of beauty. After completing the research and presentation of her project, her response was more multifaceted and illustrated a significant change. She wrote:

I learned how Cinderella Stories could be found and told in so many cultures around the world. China, Italy, Africa, India, Persia, etc. You name it and there is some kind of Cinderella story present in that culture. I also learned how in all of the Cinderella stories, they are all different in order to reflect their own culture, values, and customs. Cinderella can be told in so many ways. Each culture slightly changed the story and plots to match their beliefs. I also realized how many real life Cinderella stories there are. For example, Oprah Winfrey. Oprah grew up on a farm and was sexually abused. She now is a billionaire and helps people around the world. There are so many other real life examples of Cinderella just in our culture.

This response illustrates growth in her ability to determine themes (RL.8.2) and to make a wide variety of connections (RL.8.3). She also refers to specific people and places to serve as support and evidence for her ideas (W.8.1; W.8.1b). Some of this growth is naturally due to time spent thinking and researching on the topic, but Annie herself attributes some of this growth to using multimedia to make sense of her thinking. She even went so far as to say,

I think you wouldn’t get the same results in writing an essay because in an essay you have no visual aspect to it. All you have as a resource is what is written on the paper, which could make it more difficult for someone to understand. Something that we can
make, either a PowerPoint or anything else. I really enjoyed this [way of creating], and I think it helped me learn a lot better than any other project.

Annie seems to appreciate the individualized aspect of learning in a way that is not one size fits all. She felt that using multimedia to “write” allowed her to process and express her thinking in her own way, and allowed the audience to better understand her. As a result, her stress disappeared, her confidence rose, and her creativity was released. The result was significant learning for Annie, her group, and the class.

**Profile of George.** George is a student with good critical thinking ideas, but he lacks follow through, struggles with adding details, and has trouble logically explaining his work. He is a bit high stress and worries about writing, presentations, and being successful in general. He is a member of a Bound Project group with two boys who are accommodated for learning disabilities who usually achieve “C”s in ELA class. George seems to feel a bit defeated by what he thinks was an unsuccessful school year. In his pre-survey George states:

“I would rather write an essay because every time I do one in this class, their [sic] is always room for criticism. And as the year goes on I feel I have grasped the type of essay you might want. But that is a big might, I just feel that an essay is now more easy to plan out then a project. I might do an essay that takes me all weekend and get an 80. But I just feel essay's are easier to plan out and are less stressing.

George’s writing shows that he is unsure of himself. He seems to be saying that he'd prefer an essay, because he thinks it would be easier. Yet, he is also making a point that every time he writes an essay, it is not quite right, which causes him stress. He also references the potential stress of presentations and concludes that essays are easier to plan and accomplish.
Although he would rather do an essay, Georges states, “But a presentation gives more room for capturing the viewers. It presents something for all the senses which for some is much more effective for capturing the main idea.” Here he acknowledges that multimedia presentations offer more learning opportunities for different styles, but his stress is the driving decision maker. He goes on to say that:

Social studies and ELA are my two hardest classes this year. With the pressure of the presentation and the information by itself, I might get a little nervous. But with the idea that I did something wrong combined with my already somewhat low grade, I will stutter and mess everything up. The idea of lowering my grade through this presentation will completely mess me up.

George mentions stress in almost every response and seems to feel that it will be hard to be successful in this project no matter what. Even though he prefers to do an essay for the project, he states that:

To be honest, I've never had this much trouble in ELA ever. I specialize in math and science, and last year, I scored higher in ELA then math on the NJ ask. This year is a constant challenge, I don't think I've ever even got an A on anything in that class, only C's and B's. It's like everything I do has a problem. When I write I might do one thing right but do something else wrong and it's been like this the whole year.

In this quote, he expresses concern that he may not be successful even if he does what he feels is simpler and writes an essay. The other two boys in the group share his stress about writing and, as a result, convinced him that a presentation would be the lesser of two evils.
Once they started putting their presentation together, George’s vision of what he was capable of and what he could accomplish in the presentation began to change. In the mid-project survey, George explains choosing to do a presentation after all:

Presentations are not hard unless you have to memorize. I feel when you have the option to look at you information, it makes you less stressed and gives you a little goal to not look. It is something outside all of our comfort zone as we all admitted that we are not the best at presentations. We did this (with multimedia) because it is something we all know how to do and we can all do it at any time.

In this statement, George does reference the stress of stepping outside his comfort zone, but this time his description is much more positive. He seems to feel that having the multimedia as a reference helps the stress of presentations because it relieves the concern of memorization. Also, he attributes part of this relief to a familiarity with the medium and the convenience of using technology. After beginning to work on the project, the power of the multimedia presentation seems to have relieved some of George’s concerns.

In his pre-assessment, George showed a sample of the writing that stresses him out so much. He answered the question on Asian perspective by saying:

Not coming from an Asian background nor ever being to Asia, I would not know specifics. But I know that they would see other cultures as weird or different as it is far from their own. They will see what other people eat as weird and see other peoples lifestyle as weird. Anything that is too far off from their own culture they would see as odd. Something like how I find that chopsticks are weird they might see silverware as weird.
In this response, he does emphasize a central theme of “weirdness” (RL.8.2), though he does not follow through on thoroughly explaining what that means (W.8.1). He tries to include support with the chopsticks example, but it is not sufficient to really show mastery in supporting claims with relevant evidence (W.8.1b). As with his usual writing, there is some strong thinking when he starts with the acknowledgement that he has no personal experience with these ideas. However, the response would be stronger if he was were able to make some connections between familiar and unfamiliar cultures (RL.8.3). Overall, the response is lacking in a logical organization that would make it a clear response (SL.8.4), and it therefore comes across as a little rambling.

In the presentation itself, George actually showed great poise and was able to follow through on explaining his critical thinking in ways that he struggles with in writing. He led the group on developing their thesis, which stated that “If we grew up in an Asian country our views would be different from what they are now in our beliefs and our culture, due to what we are exposed to,” which already represents an improvement on his pre-assessment work. Here, George is able to support the idea that his beliefs and culture would be different by adding the supporting argument of why they would be different, which they claim is due to exposure to different ideas (W.8.1). George begins the presentation by discussing artistic elements in Chinese culture. Like Carl, George chooses very visual aspects of Chinese culture to discuss, perhaps because they were best illustrated by a visual medium. He first discusses the origins and significance of Calligraphy in Chinese culture. He is able to support his ideas with facts about writing materials and dates from ancient Chinese history (W.8.1b) and also draws conclusions, such as “the elevated status of calligraphy shows the power of the word, which promoted calligraphy to a work of art” (RL.8.2) This illustrates an ability to create themes from
information, which he then tracks throughout his presentation. He goes on next to connect this factual information with the fictional significance of calligraphy to the character Xing Xing in the book “Bound” (RL.8.3), using specific quotes from the text to do so (RL.8.1). He wraps up this section by extending his analysis into the role calligraphy plays in modern Chinese society and making a comparison to American society, which provides a logical conclusion to a unique subject (SL.8.4). He transitions by stating that “Art is one of the many topics that we can see might be viewed differently from a more Asian perspective, which impacts your worldview,” which represents an unusual insight for George. In traditional writing, he seems to lack the ability to draw conclusions from his thinking and reconnect back to the main focus, yet he seems able to do that with ease in his presentation.

While George was talking, his verbal transitions were matched with visual transitions of imagery from ancient Chinese calligraphy, modern day China, American art, and the book “Bound.” In fact, the images on the screen seemed to signal for George reminders of what he was supposed to say and helped him to orally explain transitions between pictures. The visual medium was serving, not only as a reminder, but as trigger for thinking that sometimes escapes him in his writing. George describes this change by saying, “Definitely, [multimedia] loosens the tone for me which allows the information to get in my head more clearly compared to physical written papers.” He seems to attribute his success to stress relief, which makes sense because stress seems to be such a driving factor in George’s life. In fact, George completely changes his thoughts on presentations from the pre-survey to the after-survey. In a dramatic turn around, he states, “I like the presentation because it is more forgiving on technicalities and you get to choose a format that you are comfortable with.” Prior to his experience in this project, George felt that a presentation would be a stress-inducing, miserable prospect. After the Bound Project,
he changes his mind, perhaps due to the support of his group or time spent on task. However, George himself feels that this change is due the use of multimedia. He says:

I feel fine with multimedia in the room, it makes learning more relaxing compared to reading whole pages about something that can be broken up into a power point or seen in a video. This project was so open that if you couldn't present your ideas one way then you can present it a different, every project is varied to the presenter which is good.

George expresses the idea that having flexibility in the mode of presentation allows each presenter to find what fits best for them, which then helps them to relax. George does not seem to acknowledge any improvement in his abilities or his achievement, but characterizes his experience by how nervous it made him feel. In the pre-survey and mid-survey, George seemed focused on his lack of success, the pressure, and his nervousness. In the focus group and project walk-through, he seems much more positive about the project in general and his experience with using multimedia seems to have opened his mind about the possibilities of self-expression. He states:

We organized our presentation this way because it was the least time consuming and it was something I knew we were all capable of. I think that technology only helped. It was there to show pictures of what we were saying to give the audience a better picture of the differences between societies and times. And if I wrote an essay I definitely would not have gotten the same results.

He, like several other students in the study, aligns using multimedia technology with being able to express oneself more clearly and learn in a better way. Without knowing the terminology, he is referencing the idea of multimodality and accessing different learning styles when presenting (Stein, 2008). For George, the ideas of connectibility and stress relief are tied to multimodality.
He goes on to explain that “A project allows a person to get rid of specific steps and create something. There are so many styles out there that allow for talent, creativity, etc. for the user to pick and be comfortable with.” The idea of comfort clearly links to having a schema for your choice of project and he also connects here to creativity and choice, which then leads to a more relaxing experience, even for a student who is petrified of presenting in front of others (Anderson, 2006). In a serious change from the beginning of the project, George ended the focus group by saying, “Overall I like this project format better than an any other project that I have done, It really give the students the freedom they need to make a good, informative project.”

Recurring Themes. These sample student data profiles effectively represent the ideas raised by all nine students. The improvement in student work and the students’ own reflective comments seem to highlight two main themes. First, the student surveys and comments identified eight advantages to using multimedia digital literacies for teaching and learning. Second, the growth in student work when using multimedia tools provides evidence that these eight advantages can actually lead to improved performance according the state and classroom standards. These two themes are further explored below.

Student Conception of the Advantages of Multimedia Digital Literacies

The third research question for this study desires to know how the students themselves conceptualize the use of multimedia in teaching literacy skills. In order to gain insight into this area, I coded the student pre-surveys, mid-surveys, post-surveys, project walk-throughs, and focus group conversations using the Theoretical Frameworks/Learning Preferences coding system outlined in Appendix E. Overall, the students felt that teaching through multimedia
digital literacies offers certain advantages over teaching with traditional literacies alone. The first five of these codes arose from the students’ ideas in the pilot study I completed two years ago and were still very prevalent in the student documents for this current study. They include Choice, Interest/Engagement, Technology Interest, Creativity, and Ease. The last three codes in this section are new ideas on advantages that arose from the current student data and represent a shift in overall student feeling. These three include the ideas of Learning Better, Stress Relief, and Connectibility/Familiarity.

Figure 1 above illustrates how many of the nine students referenced each of these eight advantages in their documents, indicating how widespread these ideas were amongst the students. Figure 2 above indicates how many times each of these advantages was mentioned overall, potentially indicating how important each of them was in the eyes of the students. The sections below explore, in order of frequency, the students’ ideas on each advantage and how these ideas impacted the students’ work.

**Learning Better.** Over the course of their surveys, documents, and conversations, all nine students indicated that they felt using multimedia digital literacies helped them to learn and
express concepts more thoroughly. With forty mentions across the student documents, this theme was by far the most often mentioned advantage of using multimodal tools. Whether due to a well developed schema for this type of technology or the brain’s hardwired ability to learn through multiple modes, all the students felt that their performance was improved in the project, not simply by time spent on task or further research, but by access to multimedia digital literacies.

One specific example of this idea comes from Sid’s experience. Sid, an intelligent member of the high level group who struggles with his work ethic, felt that using multimedia would allow the students to provide a higher level answer than they might otherwise be able to do. In his survey Sid states, “It seemed like the most straightforward, yet intricate way to present our topic, answer the question in a...much more vivid way to express all of the ideas that the group wanted to present than an essay.” He indicates that mere words on a page could not capture the detailed, in depth ideas that a multimedia presentation can communicate. This, in fact, did seem to be true in Sid’s case, perhaps because of his natural lack of “go getter” spirit when it comes to his writing. In his pre-assessment, he answered the Cinderella question by stating that “They have Cinderella stories to provide a spark of hope for societies when things are looking bad, as well as providing an uplifting story to look at in a society's history.” Coding this response in terms of the standards was actually quite easy, because it only addressed one of them. In this minimal response, there is evidence of standard RL.8.2, because he does seem to determine the central idea of the story and have a clear response to the question. However, there is no tracking of this themes development, no relevant evidence, no making connections, and no opportunity to show logical reasoning.
His performance in the presentation was very different. Obviously, I acknowledge that the students had time to work on their projects, had the assistance of group mates, and had the opportunity to research. However, when asked to compare his project work to the pre-assessment, Sid himself attributed the difference to multimedia, stating that “My ideas were generally the same as my pre-assessment. As I thought, I could explain everything better using multimedia and technology, and that was what I showed in my final presentation.” During the presentation he uses images and voice overs to reference another text we read in language arts class entitled “Jared.” Sid states that “Jared shows hope like Cinderella. Even though he is scared of judgment based on his burn scars, he still confronts Meghan at the end of the story.” He juxtaposes images from the story “Jared” with those from the Disney “Cinderella” to make his comparison more impactful. This idea relates back to the theme Sid initially wrote down in his pre-assessment, but better illustrates his ability to use evidence from a specific literary text (RL.8.1) and present information in a logical manner (SL.8.4). He then goes even further by delving into historical connections. He states:

Before the Mauryan empire there was only anarchy and turmoil in India. They united India and created a 2000 square mile empire by 300 BCE....Athens was originally a small province in Greece. After beating the Persians in the Persian War, they attained immense power and were known as the big olive. Their golden age involved a time of cultural and scientific achievements. Sumer was the first River Valley civilization and they faced great challenges due to the flooding of the Tigris and Euphrates Rivers. They still achieved success in Irrigation and inventions and they even developed a written language known as Cuneiform.
Here Sid makes links between these achievements and the concept of a Cinderella story, a story of achievement against the odds, by traveling between time and space with visuals on the Prezi map. The visualization of the rise to power of these civilizations on the map and the movement back to the Cinderella story helps strengthen the not so obvious comparison. This level of detail and thinking outside the box shows a major improvement in Sid’s mastery of standards related to support with relevant evidence (W.8.1) and the ability to make connections outside a text (RL.8.3). Sid himself explains this growth by saying, “I think that the difference is that exploring an idea with different methods allows you to get a much more detailed perspective of the idea, rather than a traditional view.” His understanding of his own performance is very accurate. Here, as with many of the other students, this idea of being able to express oneself clearly becomes synonymous with being able to learn well. Sid believes this is true of multimedia because “more evidence can be proven through using a variety of methods, rather than having to use only words to communicate,” which emphasizes this idea that multimedia may lead to more strength when making and understanding a point.

This is one example of many across the nine students that illustrates growth in student achievement based on the possibilities for learning made available through multimedia. Visuals, music, audio, and interactivity seem to help some students with skills such as making connections, drawing thematic conclusions, and providing specific evidence. This evidence, along with the Multimedia Principal, suggests that multimedia digital literacies might offer students the advantage of being able to learn in a more effective way (Stein, 2008). In a similar way to the students in Bearne’s study (2009) and Jocius’ study (2013), Sid and his group were able to create and understand new meaning in a more effective way using multiple modes. The
addition of familiar digital modes helped to scaffold the students’ learning even more effectively (Vygotsky, 1978).

**Stress Relief.** All nine students in the study spoke of multimedia digital literacies as tools that helped to alleviate the stresses that naturally arise from school and projects. The thirty-seven mentions of this theme indicate that stress has, in fact, become a major concern for students in my middle school and anything that helps to mitigate schools stresses is viewed as a major advantage. Whether because of a comfort level with technology or the anonymity that multimedia can provide, all of the students felt drawn to multimedia in part because it made the presentations less nerve-wracking.

One example of how using multimedia can relieve stress came to light through Jack’s experience in the Bound Project. Jack is a member of the high level group who is extremely shy in public speaking situations. From the beginning, Jack expressed no desire to complete any type of presentation. In fact, he felt that a traditional essay would be best for his success. In his pre-survey Jack stated:

> I would rather write an essay for a project. This is because writing an essay would be easier for me. Instead of having a presentation in front of a class with a lot of pressure and I feel it is harder for me to work to the best of my abilities. Writing an essay is better for me to not have as much pressure.

Here Jack mentions pressure, which was a very strongly emphasized theme amongst students during this year’s project. He feels that the familiarity of writing an essay would be preferable to the stress caused by standing in front of the class for a presentation. Actually, Jack’s pre-assessment does not back up his belief that he would be able to achieve better using a traditional
In his response to the Cinderella question, he stated that, “All cultures have Cinderella stories because they are the stories that the cultures have. They play a role of giving entertainment and hope to them.” This is a repetitive, minimalistic response that contains no detail and makes no connections. The only standard that is potentially illustrated here is RL.8.2, as Jack does seem to determine “hope” as a theme. However, there is no elaboration, no evidence, and no illustration of making connections. Though clearly not his strength, Jack preferred writing as an option because of the stress caused by a live presentation.

In the actual project, multimedia offered Jack a stress-free way to be actively and meaningfully involved. Jack’s major contribution was the idea for the video, the research on the sports events, helping with the selection of the images, choosing the audio of the announcers, and creating taglines. Jack chose an interesting assortment of still images to include in the video. He specifically chose a series of before and after pictures to show the change that takes place over the course of Cinderella story. For example, he showed a football team’s abysmal record for one season, and then juxtaposed that with an image showing their meteoric rise to success. This illustrated a mastery of supporting claims with logical reasoning and relevant evidence (W.8.1b) and also an ability to make connections between the traditional Cinderella story and the sports examples (RL.8.3). His choice of audio material from announcers in each particular sport was a definite improvement from previous work. Having the announcers vocalize, with the natural excitement of the moment, the triumphant plays in an actual game added strength to the comparison. This illustrates a mastery in citing specific evidence (RL.8.1) that was definitely not present in his pre-assessment response and is not always present in his writing.

Standing in front of the class while the video was playing, Jack was moving his feet back and forth nervously and tapping his fingers constantly. He was clearly anxious, but, because the
information was prepared ahead of time in a video, his nerves did not impact his ability to make the connections he was trying to make. In this case, multimedia digital tools were uniquely able to alleviate the natural stress of the moment and they enabled Jack to shine through his prepared work. Jack was nervous about presenting, but felt that the technology allowed him to express himself well by using images and other voices, therefore allowing him to hide his own voice to some extent. In the after survey, Jack states that “open format is better because I can better share my ideas and creativity.” This represents an interesting change. What previously was a fear for him, because of the stress of a presentation, became a preference because he felt that he was better able to express himself in a stress-free way.

Jack is just one student who mentioned the stress of presentations, but all the other students in this study, from different academic levels, made similar comments about stress and academic pressure as key factors in their decisions making. All three groups discussed choosing a particular technology because they felt it would relieve the stress of a difficult project due to familiarity with the tool or relieve the stress of a live presentation by being able to prepare the nerve-wracking parts beforehand. This evidence implies that students who use multimedia digital tools have an advantage because they can grow in their work without the same intensity of academic stress.

**Ease.** I was not surprised to see that the third most often mentioned theme, with twenty-one mentions, was the idea of ease. Eight of the nine students discussed the idea that everyone seeks out tools that will help to make difficult tasks more manageable. For this generation, that mostly means using various types of technology. This means that teaching with multimedia
digital literacies offers the advantage of easing the amount and difficulty of the work, or at least
the students perceive this to be the case.

One interesting example of this idea arose from Rebecca’s comments. Rebecca, a
member of the mid-level group of girls, struggles with high level thinking, making connections,
and being creative in her work. She finds writing to be difficult and stressful. She was diagnosed
and accommodated for Attention Deficit Disorder, which presents itself when she tries to settle
down to a longer reading or writing task. In fact, because she finds writing very difficult, she is
the only one of the nine students included here that did not complete her written pre-assessment.
From the pilot study, I noted that students who struggle often prefer to use multimedia in order to
make up for deficits that they feel they have in other areas of learning. Rebecca confirmed this
belief in her pre-survey by stating, “I would rather do a project. Writing is more difficult for me
and I enjoy doing projects much better.” She references academic ease and engagement both as
important factors in her choice. She goes on to say that, “Presenting an idea through a variety of
methods is easier to understand. This is because if you don’t understand one method you can still
understand the others.” In this explanation Rebecca hits upon the power of multimodality to ease
learning, entirely based on what she feels works best for herself. In her pre-survey, she also
emphasizes the idea of individualized learning. She feels that writing reaches one type of learner,
while multimedia options allow for students to more easily achieve success in their own way.

The lyrics she wrote and performed in her rap video beautifully compared the themes in
Cinderella stories to the historical concept of the rise of Genghis Khan (Rl.8.2). Because the
structure was a rap song, she was not hemmed in by structural rules or even grammatical
restrictions, and she found the writing to be much easier. She also let some of her natural
insecurity slip away as she danced and yelled out connections between Genghis Khan and
Cinderella (RL.8.3; SL.8.4). By easing her path to academic success, Rebecca was able to lose herself in a fun way of expressing her thoughts and was able to pull specific details from various Cinderella stories and specific facts from her history notes to support her ideas (RL.8.1; W.8.1b). For Rebecca, success here was grounded in freedom from the difficulty of writing and an opportunity for engaged thinking outside the box.

Rebecca was able to shine in this project because she felt released from what she viewed as academic requirements that highlighted her deficits. Recording a free-flowing music video about her ideas was much easier than the torturous task of writing an essay, in Rebecca’s eyes. The confidence that came from the ease of this learning modality and the familiarity of the technology allowed her to achieve high level thinking that previously had eluded her.

Rebecca was not alone in her decision to use technology because it made the amount, type, and accessibility of work easier. In fact, each group mentions that their path to success was eased either by using online presentation tools, incorporating videos, or using pictures to illustrate a point. Especially for students who struggle with traditional literacies, like writing, multimedia tools offer an opportunity to reach a certain level of achievement in what is perceived to be an easier way. Multimodality explains this phenomenon by highlighting the idea that student comprehension is increased through the use of multiple and varied modes (Stein, 2008; Mayer, 2008). This evidence supports the idea that multimedia digital literacies offer opportunities for students who struggle academically to achieve success according to the Core Curriculum Standards and classroom expectations.

**Choice/Flexibility.** Seven of the nine students raised the idea that employing multimedia tools gives students a choice and freedom that is not offered by traditional literacies. This type of
choice creates space for students with different learning styles or learning disabilities to find successful ways to communicate their understandings outside of traditional literacies. According to multimodality theory (Stein 2008), this offers all students a learning advantage because they have the freedom to employ learning modalities that speak to their learning style or schema (Anderson, 2006).

One instructive example of this idea comes from Carl’s work. Carl has a learning disability, struggles with focus, and is extraordinarily shy. For a student like Carl, who has a hard time communicating clearly through writing or speaking, the ability to use multimedia offers him the freedom to actually be able to express his thinking. He states:

The difference [when using multimedia] is that their [sic] are more choices to what your presentation could be than just writing an essay. It could help you learn because it could help you find things that you would not be able to find in books or other things.

He alludes here to a fear of essay writing and also an awareness that his learning is limited by reading and writing. These areas of difficulty are illustrated in Carl’s pre-assessment response. He writes, “Beauty is different when you come from an Asian perspective is because Americans have different features that Asians, so what Americans find appealing, you would never see in Asian country's.” In this response, Carl conflates two separate questions and therefore focuses his response on one basic idea of physical beauty instead of expanding his thinking broadly. This piece of writing illustrates mastery of only one of the six standards. He is able to acknowledge the theme that a person’s thinking would be different coming from a more Asian perspective (RL.8.2). However, Carl fails to create arguments (W.8.1), make connections (RL.8.3), or find supports (RL.8.1). His ideas have an interesting beginning, but he seems to get tripped up by the words when writing.
The presentation itself provided a unique answer to the question and showed a significant improvement in Carl’s ability to communicate. The group chose to focus on artistic concepts such as calligraphy, painting, fashion and architecture, which are all wonderfully supported with visual images. The question they dealt with could have been answered in a variety of ways, yet it seemed almost as if they started with the idea of having a visual media presentation and then chose their subject matter from what would work best.

During the actual presentation I was impressed by what Carl was able to accomplish. Carl describes his contribution during the project walk-through by stating:

For my part of the project, I included pictures that related to the architecture and philosophy of Japan, and my group members picked pictures that related to their topic. We organized our project this way because you don’t have to write a paragraph, instead [sic] you can use pictures and explain why you picked them.

Even in discussing what he gave to the project, Carl comes back again to the idea of doing a presentation instead of writing. It is clear that writing causes Carl stress and that being able to present his topic using multimedia is an immense relief. During his portion of the presentation, Carl depended on the strong impact of the visual imagery on the screen and spoke of his research with a soft voice. He chose to illustrate what he felt is most different between American and Japanese culture. I was intrigued by the fact that he chose architecture and philosophy. Carl is a very literal thinker and the concept of philosophy could potentially be beyond his ability to comprehend and explain. He eased into his presentation by beginning with photos of iconic Japanese buildings to discuss visual structure. The concrete nature of this topic was helped by the images and Carl was able to stay focused on his topic (W.8.1) and organize his supporting details based on the changing pictures (W.8.1b), as if the pictures themselves served as his topic.
sentences. This represented a major improvement in Carl’s ability to explain and organize his ideas (SL.8.4). During the project walk-through, he said, “The message that my presentation sends is that people who live in Asian countries have different views than someone who does not live in Asia. I picked the pictures I used because I wanted them to relate to what I was talking about.” In this final comment on the meaning of his presentation, Carl returns again to the idea of the visuals. He himself feels that they were the backbone of his presentation and inextricable from the meaning he created.

Carl approached the difficulty of explaining philosophy by choosing a concrete image of the Torri Gate to discuss Shintoism. Having the visual of the symbolic gate for the audience, and truly for Carl as well, helped to provide a grounding point of understanding. Carl described the philosophy simply and then transitioned into a visual of a statue of Buddha and a discussion of Zen Buddhism. He illustrated great growth in his ability to approach and explain such a challenging topic. This improvement in Carl’s ability to argue a point shows definite development of his mastery of the standards and how this development was supported by the concrete visual images he used.

In the focus group, Carl continually attributed this growth to the use of visuals and technology. In his last comment, he said, “The major differences when using technology and not using technology is that when you use technology, you can show visuals but when you are writing an essay you can not. I feel that it could be useful to look at an important video or be able to listen to an important song.” For Carl, this is the ultimate explanation of the deficiencies in traditional writing as the only option. He feels that he cannot fully express his thinking without the help of multimedia technology to present them. His resultant achievement of a solid B on this project definitely supports his own beliefs that his learning and self-expression were both
improved by the additional multimedia options. His usual flaws in logic were hidden and he was able to make some connections that he had never made before. Carl’s learning was improved because of the choice to embrace his visual style of learning and teaching in order to express himself in the best way possible.

Carl is one compelling example, but this same idea of choice and freedom was emphasized by several of the students. When students struggle to find success with traditional literacies, they gravitate towards spaces where they can communicate comfortably. For many students the choice to incorporate multimedia digital literacies is a choice to understand and be understood within the classroom sphere (Kress, 2004). The student feedback in this study supports the idea that this is an advantage that could significantly improve student learning and growth.

**Interest/Engagement.** Seven of the nine students also indicated that multimedia digital tools increased student engagement because they are more fun than traditional literacies. This increase in engagement translates to more focused attention and a higher possibility of students improving their achievement.

In addition to ease, Rebecca also illustrated how engagement was another advantage to learning through multimedia. She explains her positive experience in the project by stating:

I felt that this project was a lot of fun! Being able to choose our groups and getting to pick which question we wanted to do and how we wanted to answer it was a really big help. I thought that because there was so much freedom that we had so we could really do any kind of presentation that we wanted to do. The project also made us more creativity because we had to think of ideas to present our information that were creative.
She attributes her enjoyment and achievement to freedom, which includes group choice, but largely has to do with the idea that multimodality allows learning to reach each child where they are and contributes to engagement.

These ideas extended beyond Rebecca’s own project to her learning from other projects. Her literal thinking often makes reading comprehension difficult, but learning through the use of multimedia seems to aid her understanding of larger concepts. In her reflection, she explained that:

All the presentation I saw used technology. But if I were to see a presentation that did not use technology I would have most likely thought that it was boring oppose [sic] to the presentations that did use technology.

This was so much so the case that she even let her little sister dance across the screen to add life and levity to her performance. Her enjoyment and engagement in the video recording aspect of the project led to a more focused work ethic and better retention overall.

This was not only the case for Rebecca, but for all nine students. Sid actually made an interesting, related comment when reflecting on his work on their group’s sports reel video. In an effort to explain how multimedia helped engage him in the project, he states that:

Just putting together the video, I felt something rising inside of me, and that adrenaline is what underdog teams, and their fans thrive and feed on in those same situations, and those moments still provide inspiration all these years and seasons later.

This thought from his work illustrates the how video clips, music, and voice-overs have the power to transport students into the moment, which helps them to feel and enjoy their work. The evidence seems to suggest that multimedia digital literacies engage students in the fun of learning, which could then result in overall growth and achievement (Bezemer and Kress, 2008).
Creativity. Mentioned less often, but still by eight of the nine students, the idea that multimedia fosters creativity in students is a key factor in student thinking. It is interesting to note that none of the students mention creativity in association with writing, even though they have been taught numerous types of creative writing. Instead, almost all the students reference multimedia technologies as an opportunity to show their creativity that might be hidden by traditional literacies.

Alice, a nervous and eager to please student, is a perfect example of this situation. She is a hard worker who struggles with higher level thinking and is nervous about class participation. She is, at times, fixated on the idea of writing paragraphs and essays “the” correct way, as if there is only one possible answer. She says that she prefers traditional writing assignments because she feels they are safe. In her pre-survey, she stated:

I would rather do a essay. When I do a essay, I feel like I can use my information in the best way I could and it will help me prepare for future essays. We will need to know more likely how to write an essay in the future for high school and for collage [sic] and even for my career. Also, an essay helps me organize and put together my thoughts together.

This statement perfectly illustrates Alice’s personality. She is a very in-the-box, by-the-book student. She wants to do things as simply and traditionally as possible. As a group they are not usually risk takers, which is why I was especially blown away by Alice performing in their rap videos. In the pre-survey, she states, “When I am having the presentation that period, I get very nervous and I start to panic, causing me to do worse than I should have done.” The stress of
performing is much more a factor than any consideration of creativity in Alice’s decision making.

Alice is always nervous when participating in class in any way and would never have performed a rap song in front of our class. However, because of the distance provided by recording her voice overs and rap performance, she was much more capable and confident in her work. In fact, all of the girls separately indicated in their Project Walk Through that the rap videos were Alice’s idea! When watching her video I was struck by how capable she was of expressing the connections between Cinderella and the Ancient Greek and Roman cultures while wearing sunglasses and dancing (RL.8.3). This creativity was a complete departure from her typical nervous, reassurance-seeking behaviors. Instead, she was confident and illustrating her knowledge in new and innovative ways. The fact that she was able to translate that into the classroom was due entirely to multimedia technologies. The voice-over recordings were full of strong literary details from the novel “Bound” and specific dates, names, and texts from the Ancient Empires (Rl.8.1; W.8.1b). Her singing and dancing allowed her to be actively involved in the presentation without actually having to feel embarrassed in front of the audience (SL.8.4).

Her part of the presentation was factually strong and creatively outside the box, which clearly made Alice feel strong and confident. In fact, she expressed this change in her after-survey and focus group comments. Alice states:

When you explore an idea with different methods, you tend to get more information and different views on your idea. Overall, I feel okay about presentations. It is very scary beforehand and at first in your presentation, but then I tend to not be as nervous as the presentation progresses.
Prior to the project she felt that multimedia did help students learn, but her explanation here is much more emphatic and confident. She aligns use of multimedia with much improved learning, improved ability to express oneself, and with increased confidence. Alice seemed to give a lot of thought to this change and expressed the specifics more eloquently than many of the others. In the focus group she stated:

"Presentations with technology usually gave out a lot more information and enjoyment. Before this project, I would have answered that an essay was the best way to get your knowledge. Although with technology, it adds something special to each project, and everyone had a unique technology presentation."

Here she clearly expresses the role of New Literacies in enhanced multimedia learning, engagement, and an increase in creative self-expression. This idea of a unique experience is really about individualizing learning both for the presenters and the students who are viewing the presentation.

"While Alice illustrates one clear example of multimedia digital literacies facilitating an increase in creativity, she is not the only participant in the study who showed this. Several of the students were able to use technology to help them step out of the box and try out innovative ideas. When working within a comfortable schema, students are free to access funds of knowledge that lead to creative and unique thinking (Moll, 1992; Anderson, 2006). The evidence here suggests that, whether filming a rap video, designing a Prezi, or editing a sports reel, the opportunity for creativity provided by multimedia can translate to improved academic achievement."
**Connectibility/Familiarity.** One of the new themes that emerged from the students this year was the idea that multimedia digital tools offer the advantage of familiarity, because students use them so often in their home sphere. This familiarity offers students the ability to use their built in communication schema from multimedia and social media tools to effectively communicate in the classroom. Six of the nine students in this study felt that this connectibility was a key factor in their success.

Bert is a special education student with learning disabilities related to processing and writing. In language arts class he typically has trouble clearly communicating his ideas in writing or speaking assignments. Considering the information pertaining to stress and nervousness on all of their pre-surveys, I was surprised to find out in Bert’s mid-survey that the boys were planning on doing a presentation. He states, “We decided to do a power point for the presentation and talk about each slide. We selected this method because we all know how to use power point and it is easy to do in a short amount of time.” He cites reasons of familiarity and ease here as changing their minds. Because the technology is familiar to them, the communication process could be completed more quickly and easily. Even though a presentation allowed him to get away from writing, he was still nervous about the presentation, but felt that technology could help. He explained his thinking by saying:

The most difficult task in ELA is probably performing or speaking in front of others. I feel that presentations are really nerve racking and sometimes scary if you have to memorize what you are saying. The role that technology should play is it should make what ever you are doing in the class easier and it should make it more entertaining.

Here he expresses that, although he is nervous, technology can alleviate that feeling through the ease of a familiar schema and the engagement of fun multimedia. All three of the group members
had used their presentation program before and were comfortable with it, which would make the process better overall. I was interested in seeing if these factors really did impact his performance during the presentation.

Bert’s pre-assessment response was a typical example of his writing and his struggles in language arts class. In response to the question on Asian perspective, he wrote:

My worldview might be different if I was coming from an Asian perspective, such as if I was from Japan. In Japan everything is about culture and technology, in Japan the culture is all about balance and nature, the language there is also different there isn’t multiple languages there is one Japanese. The technology is also very different you can kind of say more high tech if you will, for example they have robots and other cool thing.

This response does not illustrate mastery over many of the standards. He begins to develop a theme that his thinking would be different, but does not follow through on what that different looks like (RL.8.2). He then appears to have supporting examples (W.8.1b), but in fact the examples are illogical and are not really in response to the question. He starts by seeming to make connections with Japan (RL.8.3), but actually is not connecting ideas, but leaving unconnected thoughts strewn throughout his response. This is typical of Bert’s lack of focus or logic. His thinking has been waylaid by the cool robots in Japan, and he has forgotten the original intention of the question.

Bert focuses solely on India in the Google Slides presentation. He discusses Indian fashion and spices in a beautifully colorful way. He discusses the idea of how the outside influence of fashion and food can impact a person’s experiences and, therefore, perspective (RL.8.2). Beginning to make connections, he says that “Saris are commons (sic) worn in India just like how jeans are commonly worn in America.” Here we see Bert moving in a new
direction, not just differences but commonalities within the difference (RL.8.3) Bert shows images up on the screen of luxurious saris, elegant dhotis, and spices so colorful that they hardly look real. He comfortably switches between the images on the screen, using the projector, the clicker, and the software like a professional. The presentation is intensely visual and could not function without the images shown to the audience (W.8.1b). Our pop culture teenage society is not very familiar with Indian culture, ancient or modern, and the students would struggle to understand what Bert was talking about without visuals to point to. The audience during his portion of the presentation is staring with rapt attention at the colorful pictures, clearly transported by the imagery he has chosen (SL.8.4). Bert himself stares at the pictures while he speaks, using the as a signal for his memory and ideas. He describes his appreciation and the necessity of this technology in the after-survey. He states:

The advantages in using technology is it you get a cool visual of what you are going to see and its easier to use technology. I don't think you get the same results when writing a essay because you don't get the visual in an essay and you don't get to change your tone of voice in a essay.

After the project, Bert saw the value of using multimedia as going beyond engagement. Here he describes the visuals as crucial to the understanding of the topic, an understanding that could not be achieved through writing alone. This illustrates the impact of multimodality and that the students clearly understand that impact. Because the boys had a significant schema for the process of downloading images from the web and incorporating them into their presentation software, this beautiful presentation was made possible for a group of students who tend to choose the easier path.
Vygotsky’s (1978) work with the Zone of Proximal Development shows the significance of schema in helping students to scaffold their learning of new concepts. Bert is not the only student in this study who was able to access his technology background knowledge to connect easily to his presentation and therefore raise the level of his thinking and connections. The successful results support the idea that using multimedia tools accesses a vast array of background knowledge that can help students to reach success in classroom achievement and with the standards.

**Technology Interest.** Four of the nine students mentioned the idea that multimedia digital literacies offer an advantage because many students are interested in using them due to an interest in technology itself. With its infiltration into every aspect of our lives, technology has become the focus of many areas of study and excitement.

One example of this technology interest is Sid, who was in charge of creating the video portion of his group’s presentation. Sid explained this choice in the project walk-through by stating that he loves to work with technology and especially video editing tools. He and Jack worked together on the ideas they would include in the video and selecting pictures, but it was Sid alone who created and edited the video. He made a few interesting multimedia choices within this process. He decided to incorporate music to create a feeling and message for the video. What he chose was a pumped up version of the “Rocky” theme song, accompanied by a photo from the movie “Rocky I” at the very beginning of the video. The music continued through a variety of photo and video clips of various sports underdogs and definitely played on the emotions of the audience. This is the point in the presentation where the students watching became most engaged and the meaning of the Cinderella story was definitely communicated.
through the intense addition of the music. This choice illustrates, without words, an understanding of the underlying theme of the story (RL.8.2) and ensures that the audience would also understand. Interspersed throughout the images, Sid also occasionally incorporated the voice of sports announcers, energetic and excited by the accomplishment of the underdog athletes. This had the impact of creating an involvement in the audience, as if they were spectators at the actual events, with a building energy. The music, the video clips, and the announcer audio helped to make connections for the audience, communicating theme and larger ideas. Sid describes this phenomenon in stating that:

The benefits of using technology for this project were that it allowed us to connect many different topics well, and it enhanced the content by making it more modern. We wouldn’t get the same results in writing an essay, because it is impossible to explain pictures and videos in words.

It is true that some of what they were trying to communicate could not be explained in words alone, which lends credence to the applicability of the multimedia principle. Because Sid was exciting to use the multimedia tools, the audience was pumped up and excited by the multimedia additions and clearly understood the feeling of the underdog story. Sid stated that he:

felt that The Bound Project was a very enjoyable project, and one that let everyone use the technology that they were good at using, rather than having us do a traditional essay or test, which would not have let us learn the content as well as we did using this method.

He comments here on students being able to use a tool that they are familiar with and good at using, which leads to enjoyment and better learning. This comment seems to indicate that being able to access a mode of learning they were comfortable with helped the students to be more engaged in the subject matter and complete the tuning process, which improved their learning,
suggesting that the use of multimedia might in fact improve overall achievement for students (Stein, 2008; Gee, 2008; Widmayer, 2004).

It would have been difficult for me to pinpoint exactly was aspects of multimedia digital literacies impact education. The students themselves conceptualized these eight advantages from their own experiences with this and other classroom tasks. In the eyes of the students, using multimedia to teach literacy skills is effective because it goes hand in hand with these eight advantages. This information is useful for teachers to consider as they plan for ways to allow students to succeed in classroom or standards-based areas where they have continually struggled.

Results of Coding Student Data

The above data portrays nine students who each were able to overcome their usual limitations to achieve growth over the course of “The Bound Project.” While it is difficult to generalize about all students in all situations from these few examples, there are some important trends to note that help to shed light on the original research questions for this study. Using multimedia digital tools had an overall positive impact on student achievement and classroom performance. Also, the students themselves were able to pinpoint fascinating reasons for why this positive impact was illustrated.

As planned, the secondary coder and I each used three coding systems when scoring the student work: Theoretical Frameworks/Learning Preferences, Classroom Achievement, and Core Curriculum Standards (Appendix E). Between the pre-assessment and the presentation, there was definitely growth shown in all students in terms of both the core curriculum standards and in classroom achievement.
Figures three and four above illustrate improvement in student grades and a substantial improvement in the illustration of mastery of the standards. From the data collected, it is difficult to draw definite conclusions about what one factor may have most contributed to this growth. Some of this improvement can be attributed to time on task, research, and group work. However, these are not necessarily competing factors, but could be seen as mediating variables. For example, the use of multimedia could potentially lead to more time on task or allow for more research availability. As described in the student profiles, some of this growth would not have been possible without the multimedia digital tools that were used to present the students’ ideas. For example, Alice and Annie would never have performed their rap songs in class due to stress and fear. Without those pieces, their presentation would have lacked originality, creativity, and insightful historical connections. Similarly, Sid and Jack placed a significantly larger effort into this project because of a particular interest in film editing and video clips. Without the inclusion of these multimedia moments, their project would have lacked excitement and high level connections to the real world. The table below details how student achievement changed from their typical classroom performance to their growth in this project. The most interesting column
is the last one, which shows what the students themselves felt most contributed to their success in the presentations.

<table>
<thead>
<tr>
<th>Student</th>
<th>Class Grade Before Project</th>
<th>Pre-Assessment Standards Mastered</th>
<th>Presentation Media Used</th>
<th>Presentation Standards Mastered</th>
<th>Changes from Typical Classroom Performance</th>
<th>Grade on the Project</th>
<th>Student Attributes Growth to These Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>James</td>
<td>A</td>
<td>W.8.1b RL.8.1 SL.8.4</td>
<td>Prezi, Pictures, Audio clips, Self-Edited Video</td>
<td>W.8.1 W.8.1b RL.8.1 RL.8.2 RL.8.3 SL.8.4</td>
<td>Increased risk-taking and creativity</td>
<td>100</td>
<td>Learning better through multiple modes; Connectibility with the technology</td>
</tr>
<tr>
<td>Jack</td>
<td>B</td>
<td>RL.8.2</td>
<td>Prezi, Pictures, Audio clips, Self-Edited Video</td>
<td>W.8.1 W.8.1b RL.8.1 RL.8.2 RL.8.3 SL.8.4</td>
<td>Increased confidence and creativity; Improvemen tin work ethic</td>
<td>100</td>
<td>Learning better through multiple modes; Stress relief; Engagement</td>
</tr>
<tr>
<td>Sid</td>
<td>A-</td>
<td>RL.8.2</td>
<td>Prezi, Pictures, Audio clips, Self-Edited Video</td>
<td>W.8.1 W.8.1b RL.8.1 RL.8.2 RL.8.3 SL.8.4</td>
<td>Improvemen tin work ethic and ability to expand on ideas</td>
<td>100</td>
<td>Connectibility with the technology; Engagement due to use of multimedia technology</td>
</tr>
<tr>
<td>Annie</td>
<td>B</td>
<td>RL.8.2</td>
<td>PowerPoint, Pictures, Voice Over Recordings, Self-Filmed Rap Videos</td>
<td>W.8.1 W.8.1b RL.8.1 RL.8.2 RL.8.3 SL.8.4</td>
<td>Increased confidence and creativity</td>
<td>96</td>
<td>Learning better through multiple modes; Stress relief</td>
</tr>
<tr>
<td>Alice</td>
<td>B</td>
<td>RL.8.2</td>
<td>PowerPoint, Pictures, Voice Over Recordings, Self-Filmed Rap Videos</td>
<td>W.8.1 W.8.1b RL.8.1 RL.8.2 RL.8.3 SL.8.4</td>
<td>Increase in confidence and creativity</td>
<td>96</td>
<td>Learning better through multiple modes; Stress relief</td>
</tr>
<tr>
<td>Rebecca</td>
<td>B-</td>
<td>Did not complete pre-assessment</td>
<td>PowerPoint, Pictures, Voice Over Recordings, Self-Filmed Rap Videos</td>
<td>W.8.1 W.8.1b RL.8.1 RL.8.2 RL.8.3 SL.8.4</td>
<td>Increase in creativity and insight; Improved work ethic and level of detail</td>
<td>96</td>
<td>Freedom to choose how to learn; Learning better through multiple modes; Engagement due to use of multimedia technology</td>
</tr>
</tbody>
</table>
In the Bound Project, each student was able to show mastery of an increased number of core curriculum standards. Since there were other factors involved, it is impossible to say that use of multimedia alone led to this dramatic improvement. However, these results do show that Core Curriculum Standards in language arts can be taught and assessed using multimedia digital literacies and not traditional literacies alone. The students in this study were able to use new mediums to make connections, support their ideas, and draw theme related conclusions. This opens up new opportunities for instruction for teachers and new possibilities of learning for students.

The umbrella question for this study is “How does the use of multimedia digital literacies impact student learning in English Language Arts?” In order to gain insight into this large question, I divided the question into three sub-questions, each of which I will address below in terms of the findings from this study. The study itself was framed in terms of Multimodality
Theory (Stein, 2008), Schema Theory (Anderson, 2006), and New Literacies (New London Group, 1996). Theory so these same theories are used below to shed light on some of the results.

**Question 1A: To what extent does incorporating multimedia into student work help to improve or better illustrate adolescent skills outlined in the Core Curriculum Standards that are specifically related to analyzing text and presenting/supporting an argument?**

The Core Curriculum Standards provide a guideline for district wide curriculum writing and individual daily lesson plans for teachers. These standards outline the goals for teaching and learning over the course of each year and must be addressed in students’ daily learning. If multimedia digital literacies cannot be used to effectively teach the ideas detailed in the standards, then these tools would fall by the wayside for all but the most technologically-inclined teachers.

The data from this study helps to address this question by showing that every single one of the students in this study was able to better illustrate mastery of these six standards when using multimedia. It is not possible to disconnect this growth from research and group-work factors in the project. However, I specifically chose these six standards from the list because they were based on an ability to make connections, think, and explain oneself, instead of being based strongly on research. Also, the project walk-through information helped to isolate the contributions of individual students to help determine their individual progress. The improvements in many of these projects seem to be related to the opportunities that multimedia digital literacies provide for various learning styles and nontraditional learners. Another possible explanation has to do with how these tools help to boost engagement, creativity, and confidence.
James, Jack, and Sid are strong students who achieve relatively well in the realm of traditional literacies. However, their group showed wonderful growth in the six standards when using multimedia to present their ideas. All the group members improved in their ability to make connections and add layered support to their explanations. Some of this improvement would not have been possible without the audio-visual elements in their presentation. As previously described, their group included a simple graphic with arrows between the four major themes in their thesis. This graphic shows a unique reflexive relationship that would be difficult to describe in words. For example, the students are not simply saying that Cinderella stories illustrate hope and perseverance. Beyond that, this simple graphic illustrates the group’s understanding that hope begets perseverance and perseverance can give hope, which is an unusual insight for such young students to have. This illustrates real mastery of standards RL.8.2 and RI.8.3, which were both lacking in some of the boys’ pre-assessment work. This was made possible by the simplest multimedia graphics, but it changed the entire meaning and level of the thesis. This improvement is easily explained when one applies the idea of multimodality. All people communicate naturally in multiple modes, making their true meaning understood through gestures, images, music, tone, and many other means of communication (Kress, 2010). Limiting someone to the written word alone does help to focus skill improvement in that mode, but strips the writer of other strategies to fully communicate. When they were able to use visuals to communicate, their natural connections were innately displayed and picked up on by the viewer. In the written thesis the connection was not there and without the graphic presenters and viewers alike would have missed a wonderful thinking opportunity.

Multimedia tools also enabled the group to show the innate global connections across large areas through the use of an interactive map. The different points in the presentation moved
the viewer across the globe, creating cultural connections with the click of a button. This type of understanding is much easier to illustrate and communicate visually, and therefore sometimes does not get translated into words. In fact, James, Jack, and Sid did not overtly explain these connections as they were speaking, but the audience was able to see the connections through the movement of the map. The map also allowed for a wide variety of support. In their written pre-assessments, very little support was added about other cultures, but the travel aspect of the presentation enabled the group to include pictures, facts, and support from places around the world. The students were therefore better able to illustrate mastery of standards W.8.1b and RI.8.3 by the very nature of the modality through which they are illustrating their work. The theory of multimodality emphasizes the idea that it is much more innate for students to use “communication ensembles” to make their meaning known (Halliday, 1978). This idea of multiple modes working together to communicate a layered meaning is clearly at work in these boys’ presentation. Without the visuals, the graphics, and the movement working together, there would be fewer connections illustrated and significantly less support offered. The ability to provide a more complex context for their ideas enhances the insightfulness of their ideas dramatically over their simple written responses.

Bert, George, and Carl have difficulty communicating when using traditional writing structures. Judging from their greatly improved performance in this project, they seem to truly be natural multimodal communicators. Their writing in the pre-assessment, and in general classroom performance, lacks connections and details for support. Yet, through the colorful visuals that were the focus of their presentation, they were able to provide support for their thesis in the form of pictures from various locations in Asia. These images from very different countries helped to illustrate high level connections across these cultures. The topics they chose
to consider, such as fashion and architecture, were also visually focused, illustrating that not only was their presentation multimodal, but their thinking was multimodal. Based on their responses in the pre-survey about their previous technology experience, these students spend much of their free time playing video games and watching YouTube videos. They have a lot of familiarity with and background knowledge of this kind of visual communication. Schema Theory explains this idea of scaffolded learning (Anderson, 2006). With such a strong familiarity with the visual, and an unfortunately limited familiarity with the written text, these students were much more able to explain their ideas using visual images. They were able to illustrate an improvement in all standards that was unheard of in their written work. For students who struggle with their learning, their existing knowledge structure for the written word is fraught with struggles, making multimodal opportunities a valuable alternative for assessing student thinking.

Students across the three groups have used new technology based literacy genres, such as the rap video, to communicate their ideas and thoughts in completely new ways. Annie, Alice, and Rebecca use rap videos to incorporate very specific examples from texts, history, and cultures around the world that were not included anywhere else in their project. These portions of the project illustrate mastery of standards W.8.1, W.8.1b, and RL.8.1, which are all related to providing supporting reasons and details. The primary function of the rap videos is to serve as a communication ensemble that adds heavy layers of supporting details. It was a wonderful, yet surprising addition. It was surprising that a group who all indicated in their pre-surveys that they were very stressed out about performing in front of an audience should choose to perform a rap video. New Literacies theory presents the idea that literacy is evolving to include wonderful new technologies that enhance the ability to communicate (New London Group, 1996). In their post-surveys, Annie and Alice both indicated that they felt using technology to communicate a both
safe and effective way to share a large amount of information in a short amount of time. A rap video is definitely a new form of literacy that is entirely technology based and provides the performer an opportunity to be creative while reducing their stress by providing a certain amount of distance and anonymity. In writing, the girls would have been able to include the detail provided by the raps, but without the creativity, effort, and sense of emotion. There is no substitute for the how excitedly and openly the audience received the information in the rap videos. In this case, new literacies allowed for enhanced communication, self-expression, understanding, and mastery of the standards.

New literacies also allows all the groups to provide more support because there are much faster and easier options for incorporating all different types of information. Including 5 quick images on a slide to help the audience draw a conclusion is a much easier thing than explaining them all in an essay format. This helps the students be better able to raise these types of ideas to express themselves and communicate their knowledge. In some ways, because of the constant exposure to new multimedia literacies, students seem to think more readily in these types of formats (Leu et al, 2004). For example, Annie, Alice, and Rebecca played their rap videos at the same time that text was appearing on each slide. They also included at least one image on each of these slides, some of which also included a voice over. This “communication ensemble” provides so much information at a glance, creating connections and expanding on ideas that would be difficult to explain in an essay.

These student experiences are not widely generalizable and it is difficult to isolate factors in order to attribute all growth to multimedia. However, it is safe to say that the results show that teachers would definitely be able to address these standards through the use of multimedia digital literacies in addition to or instead of traditional literacies. Measuring the standards by using just
traditional forms of literacy alone may be limiting to some students and may not fully address their potential for understanding.

**Question 1B: How does allowing use of multimedia prompt or illustrate new student understandings, insights and growth in ways that may be outside the literacy standards?**

Improvements in classroom achievement illustrated in Figure 4 and in Table 7 are measured by a numerical grade that takes into account factors that go beyond the Core Curriculum Standards. Part of what was included on the student rubric (Appendix A) for this grade were ideas such as creativity, responsibility, and risk taking, which are all key factors in student growth and success. As can be seen in the graph, all students showed overall improvement, often based on these unique classroom factors.

James, Jack, and Sid have always been good students, but the graph above shows that they improved their class performance to perfection in this project. As previously mentioned, Jack always wants to achieve well, but he does not always put forth the effort to complete tasks in detail. He is often likely to write a one sentence answer and, although it might be a correct answer, never backs it up with evidence or explanation. In his pre-survey, Jack himself affirmed that he was seeking the easiest method to accomplish this project. However, the video that he and Sid created together represents hours of work selecting video clips, matching them to audio clips, and editing the video. The schema Jack has for sports videos helped him to easily make connections to the concept of Cinderella stories. This is Jack’s personal passion and he was therefore willing to put more time into the project because he was excited about the connections he was able to make. Allowing students the freedom to access their schema creates an
opportunity for them to scaffold skills that may be lacking, which in this case was time spent on
task. Jack felt that the video editing work was easy and enjoyable because he was able to view
and work with sports clips that he remembered fondly and was familiar with (Tracey and
Morrow, 2006). Jack is a perfect illustration of how modern students’ schema for various
multimedia literacies can improve classroom performance. New Literacies emphasizes the idea
that new technologies are constantly creating new types of literacy and ways to explore literacy
learning (Leu et al, 2004). Jack was engaged in the work because of an interest in the video
editing technology they were able to use to communicate and the freedom they had to
incorporate scenes from his favorite adrenaline pumping sports moments. He found the product
they were creating to be fun and entertaining. Due to these factors, Jack put much more effort
into this project than is typical for his classroom work. Effort is not a factor that is represented in
the Core Curriculum Standards, but it certainly has a major impact on the resulting work, the
student’s self esteem, and the level of achievement that he was able to attain.

Alice, Annie, and Rebecca also triumphantly accomplished a feat not represented in the
standards, but which was reflected in their classroom achievement and grades. All three girls
indicated in their pre-survey and focus group data a tremendous fear of presenting in front of the
class. They were concerned about being able to successfully communicate their ideas and make
creative connections with everyone watching them. They were able to employ schema they have
for several types of literacy through multimedia that have exploded into the world. Over the last
few decades music videos have taken youth culture by storm and this is especially the case since
YouTube has made these new literary forms so accessible to young students. New Literacies
Theory explains how ever advancing technologies can be used to communicate in completely
new ways, which in this case allowed the girls an opportunity to creatively explain their ideas.
through the power of multimedia without the fear of live performance (New London Group, 1996). These music videos included details from the novel “Bound” and connections to historical events that added a great level of detail and insight to their presentation. It is easy to imagine what would have been lost without the opportunity for these students to express their ideas confidently away from the audience. The girls also added voice overs to some of their slides that included research they had discovered about Cinderella stories from around the world. Without multimedia technology offering them a form of anonymity, it would have been difficult for them to have the confidence to perform these pieces live. Their resulting project was layered with literary connections, historical details, and examples from cultures around the world. This richness of information arose from intelligent young minds combined with the technological new literacies opportunities available (Knobel and Lankshear, 2006). Beyond this, their ability to be creative in the face of their fears led to a previously unattained beauty in their project and a new found confidence that will hopefully stay with Alice, Annie, and Rebecca in their future academic endeavors.

Carl, George, and Bert found their own kind of success within “The Bound Project” that is not reflected in the Core Curriculum Standards. Each of these boys consistently struggled to achieve the grades they wanted to in language arts class. As a result, they seem to have developed stress directly related to writing assignments in class. All three boys mentioned in their pre-survey data a feeling that they could not be successful in their writing and could not communicate their ideas well. Perhaps as a result of this stress, these boys chose to do a Google Slides presentation that was almost entirely visual. They chose to deal with visual topics such as architecture and fashion. The photographs that they included were lively, colorful, and striking. With dramatic imagery, visually based topics, and an entirely oral presentation the boys were
able to explain connections and details that they typically struggle with in their writing. I was especially impressed by their poise and ability to communicate understandings about Zen Buddhism and the significance of spices in Indian culture. These are high level ideas that clearly these boys were able to form multimodally, but that they usually have trouble explaining in writing (Stein, 2008). The availability of the multimedia technology to create such a beautiful presentation that spoke without words helped to relieve a stress normally created by writing in language arts class. Two of the boys specifically mentioned in the focus group feeling that they were much better able to communicate their ideas using multimedia than they were in writing, which relates to the power of new literacies in education (Knobel and Lankshear, 2006). As a result, their oral presentation was relaxed, interesting, and effective. In the project walk through, all the boys exhibited a pride in their work that was striking compared to the usual defeated attitude with which they treat language arts tasks.

Education goes beyond what we are expected to teach our students through the Core Curriculum Standards. We are striving to build their entire beings as future students, thinkers, and contributors to society. Effort, creativity, and confidence are skills and attributes that will make a difference to their lives. While not the only tool that is able to inspire these kinds of improvements, multimedia in this project definitely helped to improve student performance in these difficult to measure areas for all nine students. Beyond the influence on standards-related skills, multimedia digital literacies is worthy of classroom use because of the wonderful opportunity for growth it provides in these sometimes intangible aspects of learning.
Question 1C: How do students themselves interpret the impacts of multimedia on their learning, their ability to illustrate learning, and their engagement?

The surveys, focus group, and post project walk-through were invaluable opportunities to gain insight into the minds of my fourteen year old students. Though young in age, they are nonetheless very self-aware and knowledgeable about teaching and learning. The previous section of this chapter entitled “Student Conception of the Advantages of Multimedia Digital Literacies” details the eight major ideas that arose from the students. The students claim, again and again, that using multimodal options for creating and presenting their ideas helped them to achieve better results as creators and as learners.

The attitude with which students approach their schooling has a dramatic impact on how well they learn. Maslow’s Motivation Theory maintains that human behavior is controlled by both internal and external influences. Also, he emphasizes that people have the ability to make decisions and exercise free-will, which resonates with education because students can choose to activate their learning based on motivation (International Study Project, 1978). Therefore, it is crucial to know what the students feel helps their understanding. All the data in this study shows that, not only do the students feel that multimedia digital tools help them enormously, but they are able to pinpoint the eight reasons why it helps them. There was not one of the nine students who felt the tools were distracting or ineffective. In fact, all nine students felt that using these tools in their own projects, and viewing other projects that used them, improved their ability to learn and remember new content, which is supported by the concept of multimodality (Stein, 2008; Halliday, 1978). All nine students also felt that using these tools reduced the level of stress created by school and assessments by incorporating New Literacies as a means of communication (Knobel and Lankshear, 2006). The majority of students felt that their familiarity
with these types of technology helped to make the work easier and more impactful, as explained by Schema Theory (Anderson, 2006; Widmayer, 2004). The students themselves understand that their built in schema for these types of tools make learning more effective and simpler. Again, there are other factors at play, such as group work and research time, so multimedia cannot be given full credit for the growth illustrated in this study. However, the fact that the students themselves largely contributed their improvements to this factor has important implications for curriculum planning.
Chapter 5: Implications

Implications for Classroom Practice

As previously stated, this is a qualitative case study based on nine students in one middle school and is therefore not generalizable. Having said that, this study illustrates changes and trends in our students and therefore does have implications for educational practice. Some teachers fear the slow creeping influence of technology in their students’ lives and, potentially, in their own curricular requirements. This study does not seek to force teachers into using technology in their classrooms on a daily basis. However, there is a certain responsibility that educators have to not only prepare students for the world they are going into, but also to meet students in the world they are coming from. Multimedia digital literacies play an integral role in both those worlds.

In thinking about the significance of these digital literacies, it is impossible to ignore the issue of the digital divide. Previously the definition of the "digital divide" has been solely that of a difference between areas that have physical access to computer equipment and areas that do not. However, this idea oversimplifies the problem of technological access and its implications for social inclusion, which is described as “the extent that individuals, families, and communities are able to fully participate in society and control their own destinies” (Warschauer, 2004). Before teachers can fully embrace the use of multimedia tools, communities need access to equipment, but more importantly knowledge of how these tools can improve their lives and time to develop the relevant schema. Once that is accomplished, teachers can think about potential changes for the classroom.
**Student Choice.** This study indicates that it is possible to effectively address some key Core Curriculum Standards by using multimedia tools as an option for self-expression. As a teacher, it is easy to focus on teaching literacy skills through traditional literacy practices of reading and writing. However, students can effectively create themes, make connections, and support their ideas through other methods of self-expression. When possible, teachers may want to offer students a choice in how they express their thinking in order allow for every possibility of learning and growth. For many students, their schema for multimedia digital literacies offers them access into learning that they cannot achieve through traditional means. In the changing landscape of communication, New Literacies, are a valid option for sharing ideas in the workplace and in our social lives (Gee, 2003). Educators should be responsive to these changing trends and make the same options available for certain classroom practice or assessments. This does not mean teachers should never require traditional literacies, but rather means giving students a choice of modality of self-expression when the opportunities arise. Students within the Bound Project responded by one hundred percent of them choosing to use multimedia technology and all nine students in this study improving their performance according to the standards and classroom requirements. There was also a pervasive reduction of stress and increase in creativity. These are results that would be positive in any classroom environment.

**Instruction.** Teachers are all individuals and imposing strategies and methods upon an unwilling teacher can have unfortunate results. However, if, as this study implies and Multimodality Theory explains, students learn better when accessing information through a variety of modes, then some teachers may be willing to adapt their teaching to use a variety of digital modes (Stein, 2008). At the very least, this study shows that multimedia digital literacies can be used just as effectively as traditional literacies to learn certain skills. The
traditional concept of a literacy classroom in which students simply read books and write responses needs to be adapted to a modern world in which students are learning differently. Of course, there will always be a strong presence of those traditional literacies in language arts classes, but New Literacies also provide opportunities for teaching and learning that can improve students’ literacy skills through videos, online conversations, and creating multimedia posters (Gee, 2003). In their private lives, many students today have developed a full schema for learning through images, music, and video clips. Schema theory helps to explain how accessing this kind of familiar background knowledge can only serve to improve the students’ abilities to make connections and access all their learning styles. The majority of students in this study commented on how they learned much better from the other presentations that engaged them through the use of multimedia digital literacies. This is by no means the only way to teach engagingly. However, teachers of modern literacy skills may want to acknowledge that they are preparing students for a new world of communication and adapt their teaching accordingly in order to more successfully reach more students.

**Professional Development.** The positive results of this study and others like it are not dramatically unexpected. Students respond well to learning in ways that access their schema, use different learning styles and modes of communication, and engage learners through modern technology (Jocius, 2013; Bezemer and Kress, 2008; Yandell, 2008). This has always been the case, but in most school districts the infrastructure of education has yet to catch up. In order to reap the benefits of multimedia digital literacies in the classroom, teachers need ongoing professional development that is specific to teaching literacy using these tools. It is, of course, helpful to receive general training on how to use digital tools, but unless that training is specifically geared towards rich instruction using those tools, then there will be no real influence
on classroom practice (Avila and Moore, 2012; Hagood, 2011; Luke, 2000). Teachers need training, not on how to wow students with multimedia displays, but on how to properly address the standards and encourage critical thinking skills through the use of digital literacies. This training needs to be ongoing to help address the follow-up questions that always arise when using technology in the classroom. It is important not to introduce these ideas and then abandon teachers to figure things out on their own, which invariably results in a return to familiar methods of teaching (Yeo, 2007). There should be a supportive environment created where ongoing instruction for educators can take place. Only then will the students truly benefit from a change in instruction that will change their potential for learning in the 21st century.

Implications for Future Research

After completing this study, I have multiple suggestions for future research regarding multimedia digital literacies in the classroom. One suggestion is to take a project similar to The Bound Project and incorporate a few control groups who were asked to use traditional literacies to prepare their project. This would help to isolate learning factors and determine more verifiably what most influenced student improvement. Another suggestion that could add to the available literature would be to have students work independently on multimedia projects to eliminate the benefits and complicating ideas of group work. Also, a study delving into the question of how much the students’ perception that multimedia helps actually impacts their performance. Finally, it would enrich the body of knowledge to shift the focus from student work to teaching instruction. A study comparing lessons, one based on traditional literacies and one based on multimedia digital literacies, completed by the same teacher to teach the same literacy skill to a similar population of students. Following these research paths would provide more information to help teachers, administrators, and policy makers to inform their decisions.
A Final Note: Implications for Personal Practice

My twelve years of teaching so far have been a journey exploring new literacies. I have striven to balance traditional literacies, classic literature, and essay writing with use of social media communication, multimedia lesson creation, and daily access to computers for my students. However, lurking in the back of my mind was the constant fear that I was taking time away from “real” literacy instruction to pursue a cultural interest in technology. While the results of this study are not widely generalizable, the student data and feedback are more than enough to affirm my teaching direction.

The students in this study were able to learn and better communicate their learning in a variety of ways through multimedia. They were also able to identify for me eight specific reasons why I should continue to introduce these multimedia opportunities into my literacy instruction. Beyond the implications this study has for all teachers’ classroom instruction, it has definitely helped to reassure my pursuit of learning through multimedia digital literacies. Students need, above all else, an opportunity to learn. Providing options for learning style, comfort, background knowledge, and engagement provides all students with an equal playing field in order to pursue that opportunity. Using multimedia digital literacies in the classroom is not only about being culturally literate, but is about providing students with the best chance to excel in all types of literacy. It is about having another tool in our educational toolbox to reach the student who struggles with writing, the student who is terrified of speaking in public, the student who is too stressed out to be creative, and the student who finds nothing similar between their life in the classroom and their life out in the world. As we educators step further into the 21st century, it is time to acknowledge the power of technology to reach these students and transform true literacy learning into a task that each and every child is able to accomplish.
References


Vintage.


Appendix A
IRLA and Social Studies
Open Format, Multi-Media, Creative Explosion Bound Presentation

Part 1 - Group
Choose one of the questions below:

1) What is beauty?
2) How might your worldview be different if you are coming from a more Asian perspective?
3) Why do almost all cultures have Cinderella stories? What role do they play in society?
4) What has been the image and role of women throughout history and have they changed in the modern era?

Your job is to answer the question you chose by creating a presentation that thoroughly explores the issue. Each question is open. There are many, many possible answers and many ways to express those answers.

Your presentation Must include the following information:

- How is the question you chose related to Bound? Please use specific evidence from the text.
- How have you seen the question illustrated throughout the year in Social Studies or IRLA class? Consider what themes in S.S. or other texts in IRLA we have done that might be related to your questions.
- At least one interview with a real life person who has an interest in answering the question. Please use quotes!
- Using information from your Social Studies class this year, what does history, cutting across cultures and time periods, tell us about your question? Please use specific notes. For example, if you do the 4th question, You MUST use your River Valley Herstory, Sparta Athens Comparative Chart: Role of Women sheet, and the Tang and Song Dynasty notes from powerpoint.; role of women in Mongol society. Or, if you do question 1 you should be using your Greek Beauty notes.
Your presentation **Could** include the following information:

- How you yourself would answer the question?
- How would pop culture answer it?
- How would other cultures answer it differently?

**Part 2 – Independent**

Write a 2 paragraph reflection on this project. The first paragraph should be a discussion of what you learned from exploring your question. For example, you could include something new that you found interesting, enlightening, or shocking. The second paragraph should be a discussion of what you learned from the other presentations you watched in class.

**Structure**: This is an open format presentation. That means you can do absolutely any type of presentation. Choose a medium that would best showcase your natural talents and skills. For example, you could do:

- A powerpoint presentation, A movie, An art exhibit, A musical presentation, A play, A poster presentation and many more! OR a combination of these!

Be careful to choose a type of presentation that you can work on at home, since most of the work will be homework. It is your responsibility to choose an appropriate medium that can be worked on at home, but viewed at school. You have to figure out the logistics. If you are using technology, it is **KEY** that you test it ahead of time or you cannot use technology.

**Format**: Presentation No More or Less than approximately 5 minutes

1 Copy of the Reflection (Times New Roman, 12)

**Resources**: Magazines, Newspapers, Music Videos, Movies, Music, Literature, People, Interviews, Advertisements, Bound, S.S. Notes, Your Own Ideas
Appendix B

Part 1 Survey Questions

Completed Before Project

Would you rather do the project this way, as an open format presentation, or write an essay?

Why?

What do you think is the difference between presenting an idea using different methods and writing a traditional essay about it?

Do you think you will be able to express your ideas in this project?

What does literacy mean to you?

What kinds of technology do you use, how often do you use it and for what purpose do you use it?

What role should technology play in a language arts class?

What do you find to be the most difficult task to perform in ELA class?

Is writing easy or difficult for you?

How would you structure an expository essay?

In an argument, written or verbal, how do you prove your point?

What is “evidence”?

How do you feel about presentations?
Part 2 Survey Questions
Completed Midway Through the Project

How is work on the project going?

What have you completed so far?

How have you divided up the work?

Have you run into any difficulties?

Have you decided how to present your ideas to the class?

If so, why did you select that method?
Part 3 Survey Questions
Completed After the Project

Would you rather do the project this way, as an open format presentation, or write an essay?

Why?

What do you think is the difference between exploring an idea with using different methods and writing an essay about it?

Do you think you were able to accurately express your ideas using this project?

What does literacy mean to you?

What role should technology play in a language arts class?

How do you feel about using multimedia (technology that mixes picture, videos, music, etc) in the classroom?

Do you think using multimedia in the classroom helps you learn?

What do you find to be the most difficult task to perform in ELA class?

Is writing easy or difficult for you?

How would you structure an expository essay?

In an argument, written or verbal, how do you prove your point?

What is “evidence”?

How do you feel about presentations?
Appendix C

Part 1 - Student Focus Group

The first part of the focus group will be composed of 6-10 eighth grade students who have participated in the project. Participation will be completely voluntary and based on parent consent. Students will be asked to participate in one after school group discussion, with the potential for one follow up meeting if needed.

Guiding Discussion Points

1. How did you all feel about The Bound Project?
2. What did you learn that was new during the course of this project?
3. Many of you were present for (name specific presentation)….What made that presentation so strong and interesting to watch?
4. You guys have all watched many Bound presentations. What were the major differences between the presentations that used technology and those that did not?
5. What were the benefits or drawbacks to using technology for this project? Do you think you would get the same results in writing an essay?
6. I saw from your surveys that many of you thought…(fill with specific reference)……Tell me about why you thought that?
7. Take a look at your own written pre-assessment that you did. How are the ideas the same or different than what you put into your final presentation?
8. What do you think would be a good follow up project for you guys to do?
9. What did you guys like about the project? And what can I change for the better next time I do it?
10. Is there anything else you would like to tell me about this project?
Part 2 – Student Focus Group

During the second part of the focus group, I will lead each group separately through a think aloud while viewing their presentations. I will ask the following questions to each group of three and also to each member individually. Other questions will be improvised depending on the nature of the presentation itself.

Tell me about how you’ve designed your presentation.

Who completed what part of the project?

How did you decided what music or pictures to include?

What caused you to organize your presentation this way?

What did you struggle with as a group?

What message do you think your presentation sends?

What did you learn through the process of creating the presentation?

How did you select this particular video clip/photograph/URL?

What program did you use to pull this all together?
### Appendix D

**Selected from the Core Curriculum Standards for Language Arts**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL.8.2</td>
<td>Standard related to determining the central theme or idea and tracking its development</td>
</tr>
<tr>
<td>W.8.1</td>
<td>Standard related to creating arguments to support claims with clear reasons and relevant evidence</td>
</tr>
<tr>
<td>W.8.1b</td>
<td>Standard related to supporting claims with logical reasoning and relevant evidence (not specifically text related necessarily)</td>
</tr>
<tr>
<td>RL.8.3</td>
<td>Standard related to how to Analyze How a Text Makes Connections</td>
</tr>
<tr>
<td>RL.8.1</td>
<td>Standard related to citing specific evidence from literary text</td>
</tr>
<tr>
<td>SL.8.4</td>
<td>Standard related to presenting information in a focused, coherent, logical manner</td>
</tr>
</tbody>
</table>
Appendix E

Three Coding Categories

Core Curriculum Standards

<table>
<thead>
<tr>
<th>Code</th>
<th>Explanation of Code</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>SL.8.4</td>
<td>Standard related to presenting information in a focused, coherent, logical manner</td>
</tr>
</tbody>
</table>

Theoretical Frameworks/Learning Preferences

<table>
<thead>
<tr>
<th>Code</th>
<th>Explanation of Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice/Flexibility</td>
<td>Students indicate that choosing their groups, their questions, and their medium for presentation was an important factor for them.</td>
</tr>
<tr>
<td>Interest/Engagement</td>
<td>Students indicate that they did well with the project because they were more engaged in it for a variety of reasons, not exclusive to multimedia use.</td>
</tr>
<tr>
<td>Technology Interest</td>
<td>Students indicate that using technology itself plays a role in their success with the project.</td>
</tr>
<tr>
<td>Creativity</td>
<td>Students indicate that they were excited about the project because it offered an opportunity to be creative.</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ease</td>
<td>Students indicate that they found the project easier than writing an essay, for a variety of reasons.</td>
</tr>
<tr>
<td>Stress Relief</td>
<td>Students indicate that multimedia relieves stress caused by traditional learning tasks and expectations.</td>
</tr>
<tr>
<td>Learn Better</td>
<td>Students indicate that the use of multimedia technologies allows students to better understand material they are presenting and that is presented to them.</td>
</tr>
<tr>
<td>Connectivity/Familiarity</td>
<td>Students indicate that multimedia technology is easier and more engaging to use because students are very familiar with this type of medium across every aspect of their lives.</td>
</tr>
</tbody>
</table>

**Classroom Achievement**

<table>
<thead>
<tr>
<th>Code</th>
<th>Explanation of Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal Response</td>
<td>Student gives a response that gives a very basic answer with no support included or conclusions drawn</td>
</tr>
<tr>
<td>Change</td>
<td>Students response indicates a change from their previous written response or usual class performance</td>
</tr>
<tr>
<td>Extensive Response</td>
<td>Student response is clear, well supported with evidence, and illustrates thoughtful conclusions drawn.</td>
</tr>
<tr>
<td>Unusual Insight</td>
<td>Response indicates a level of drawing conclusions, synthesis and evaluation that is not usually seen in student’s classwork.</td>
</tr>
<tr>
<td>Evidence Used</td>
<td>Student uses outside research or references to the text in order to support ideas.</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Themes and Connections made</td>
<td>Student bring all explanations together to bridge gaps and connect larger themes.</td>
</tr>
</tbody>
</table>
Appendix G

Consent Form

Dear Students and Parents/Guardians,

As many of you know, I have been working on completing my Doctor of Education in Literacy at Rutgers University. As part of my degree completion, I will be working a research study in preparation for some of my courses and my dissertation. Your child has been invited to participate in my research study to determine how multimedia technology fits into the language arts classroom.

Every year, my students complete work on a wonderful 3 week project called The Bound Project and every year I am blown away by how wonderful their work is. As this is part of the regular curriculum, all students will complete this work. However, this year I would like to take some students’ projects on a volunteer basis for my research.

I would like permission to anonymously use your child’s work related to the Bound Project, including pre-assessments, pre and post surveys, audio and video recordings, reflections, and the projects themselves, in my research. Any permission would be a great help, but is by no means a requirement for students. The use of your child’s work as data is completely voluntary and there are absolutely no repercussions for not participating. If you do decide to allow me to use your child’s work, you can depend upon the following:

- Students will not be asked to complete any work that is additional to what they would normally complete as part of my class curriculum. The data is taken from the existing work they complete on the project.
- There is no foreseeable risk or direct benefit to your child associated with this study.
- Participation may be withdrawn at anytime.
- This research is confidential. The research records will include some information about your child and this information will be stored in such a manner that some linkage between your child’s identity and the response in the research exists. Some of the information collected about your child includes Bound project pre assessments, surveys, research, group planning, class discussions, and the actual Bound projects and
performances. Please note that we will keep this information confidential by limiting individual's access to the research data and keeping it in a secure electronic location.

- The research team, professors and the Institutional Review Board (a committee that reviews research studies in order to protect research participants) at Rutgers University are the only parties will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, pseudonyms will be used for all students. All study data will be kept for three years beyond completion of research and analysis.

  Parent/Guardian
  Initials ______

- Students will also be asked on a strictly volunteer basis to participate in an after school focus group, which will meet twice, to share their thoughts on the project.

If you would be comfortable giving me access to your child’s Bound Project work, please initial the previous page and sign below. If you have any questions at all, please feel free to send me an email at DLang@livingston.org or you may contact my faculty adviser Dr. Lesley Morrow at Lesley.Morrow@gse.rutgers.edu. If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Email: humansubjects@orsp.rutgers.edu
(732)235-9806

Thank you greatly for your consideration,
Dakashna Lang, M.S. Ed.
8th grade Language Arts Teacher
Heritage Middle School

We have read and understood the above information. We give full consent for Dakashna Lang to use the requested information as part of her course work, research studies, dissertation, and publications.

____________________________________  ______________________________________
Parent/ Guardian (Printed Name)          Parent/ Guardian (Signature)      Date

Dakashna Lang

Principal Investigator (Printed Name)   Principal Investigator (Signature)  Date
APPENDIX G

AUDIOTAPE AND/OR VIDEOTAPE / PHOTOGRAPHY ADDENDUM TO CONSENT FORM

You have already agreed to allow your child to participate in a research study entitled: The Bound Project: Exploring the Boundaries of Learning Through Multimedia conducted by Dakashna Lang. We are asking for your permission to allow us to photograph, video and audio tape the class discussions, performances, and focus groups of your child as part of that research study. You do not have to agree allow your child to be photographed and/or recorded in order to participate in the main part of the study.

The photographs and recording(s) will be used for analysis by the research team, research writing and possible use as a teaching tool. Pseudonyms will be used for all students.

The photographs and recording(s) will be stored in secure, private, electronic databases.

Your signature on this form grants the investigator named above permission to record your child as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Name of Child (Print) ________________________________

Name of Parent/Legal Guardian (Print) ________________________________

Parent/Legal Guardian’s Signature __________________ Date ________________

Principal Investigator Signature __________________ Date ________________
Appendix G

STUDENT ASSENT FOR PARTICIPATION IN RESEARCH

Investigator: Dakashna Lang
Rutgers University

This assent form may contain words that you do not understand. Please ask the Mrs. Lang or your parent to explain any words or information that you do not clearly understand before signing this document.

1. Mrs. Lang is inviting you to take part in his/her research study. Why is this study being done?
   We want to find out if using multimedia helps students to improve their language arts skills.

2. What will happen: As part of our regular unit, everyone will complete a project called the Bound Project. This will be done whether you want to take part in the research or not. What you need to decide is if you would be willing to let Mrs. Lang use all of your project materials for her research. Also, some students can volunteer to take part twice in an after school discussion group to share your thoughts on the project.

3. There will be no risk to you in taking part. Mrs. Lang will change your name on any work that you agree to let her use.

4. Are there any benefits that you or others will get out of being in this study? The knowledge gained with your help will help teachers decide whether or not to use multimedia in English classes in the future.

   It’s completely up to you! Both you and your parents have to agree to allow you to take part in this study. If you choose to not take part in this study, we will honor that choice. No one will get angry or upset with you if you don’t want to do this. If you agree to take part in it and then you change your mind later, that’s OK too. It’s always your choice!

5. CONFIDENTIALITY: We will do everything we can to protect the confidentiality of your records. If we write professional articles about this research, they will never say your name or anything that could give away who you are. We will do a good job at keeping all our records secret by following the rules made for researchers.
6. **Do you have any questions?** If you have any questions or worries regarding this study, or if any problems come up, you may contact the principal investigator Mrs. Lang at: DakashnaLang@gmail.com

You may also ask questions or talk about any worries to the Institutional Review Board (a committee that reviews research studies in order to protect those who participate). Please contact the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Email: humansubjects@orsp.rutgers.edu
(732)235-9806

Your parent or guardian will also be asked if they wish for you to participate in this study. You will be given a copy of this form for your records.

Please sign below if you assent (that means you agree) to participate in this study.

__________________________________________________________________________
Signature: __________________________________________
Date: ______________

Name (Please print): __________________________________________

Investigator’s Signature: ___________________________ Date: _______________
APPENDIX G

STUDENT AUDIO/VIDEOTAPE ADDENDUM TO CONSENT FORM

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The photographs and recording(s) will be used for analysis by the research team, research writing and possible use as a teaching tool. Pseudonyms will be used for all students.

The photographs and recording(s) will be stored in secure, private, electronic databases.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Signature ________________________________ Date __________________
Name (Please print): __________________________________________
Investigator’s Signature: ______________________ Date: ________________