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John E. Priest

Western Connecticut State University, johnepriest@gmail.com

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THE EFFECTS OF VERBAL AND NONVERBAL LEARNING STYLES ON
STUDENT ATTITUDE, INTERPRETATION, AND INTEGRATION OF CONTENT
WHEN READING GRAPHIC NOVELS

John E. Priest

Master of Science, Western Connecticut State University, 2005
Bachelor of Science, University of Connecticut, 1993

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Education in Instructional Leadership

in the

Department of Education and Educational Psychology

at

Western Connecticut State University

2013

THE EFFECTS OF VERBAL AND NONVERBAL LEARNING STYLES ON STUDENT
ATTITUDE, INTERPRETATION, AND INTEGRATION OF CONTENT WHEN READING
GRAPHIC NOVELS

John E. Priest

Western Connecticut State University

Abstract

This study examined the effects of cognitive learning styles on how middle school students internalize and comprehend graphic novels. Using a qualitative approach the multiple case study examined student survey data, class assignments, interview responses, and focus group transcriptions in an effort to describe students' perceptions of using graphic novels in a social-studies setting. After obtaining a convenience sample of 109 grade-eight students, an examination of the Otis-Lennon School Ability Test (OLSAT) scores took place. A purposeful sample of 11 students was drawn to construct three bounded case study groups representing varying verbal, nonverbal, and balanced learning styles as determined by the OLSAT. Upon the completion of all data collection and analysis a smaller sample of three students was chosen for a focus group. Emerging themes facilitated the generation of protocols for both interviews and focus groups and complemented the themes addressed in the PRGNS.

Within and cross-case pattern analysis of data drawn from case study groups and the focus group yielded both similarities and differences. Verbal, nonverbal, and balanced subgroups believed there is potential depth and challenge to graphic novels, an engaging

storyline is essential in maintaining focus while reading, prior knowledge impacts their ability to recognize symbols, and images provide focus and prevent mind wandering while reading. When preferences for reading genre were examined it was found that both the verbal and balanced subgroups had an overwhelming preference for fiction while the nonverbal subgroup preferred nonfiction. Finally, the reading attack strategies used by the subgroups differed based on their use of visuals with the reading. The verbal subgroup indicated reading the text of a textbook assignment first and later looking at visuals such as charts and pictures. Nonverbal participants discussed skimming the images and captions before reading the text, and the balanced group generally used bold headings like titles and subtitles to preview the content before reading text.

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John E. Priest, EdD

Approval Page



School of Professional Studies
Department of Education and Educational Psychology
Doctor of Education in Instructional Leadership

Doctor of Education Dissertation

THE EFFECTS OF VERBAL AND NONVERBAL LEARNING STYLES ON STUDENT
ATTITUDE, INTERPRETATION, AND INTEGRATION OF CONTENT WHEN READING
GRAPHIC NOVELS

Presented by

John E. Priest, EdD

Karen Burke, CSJ, EdD Primary Advisor	 Signature	6/25/13 Date
Jane M. Gangi, PhD Secondary Advisor Committee Member	 Signature	8/19/13 Date
Cindy R. Scope, PhD Secondary Advisor Committee Member	 Signature	6/25/2013 Date

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professionally and personally, and I truly would not have been able to succeed in this effort without him.

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DEDICATION

There was no way I could have reached this point without my best friend and wife Heather. It was not long after our wedding that I told Heather about my plans to start the EdD program. After two long house renovations, the birth of beautiful twin girls, a few career changes, and numerous life challenges her support, sacrifice, and love have never wavered. My heart and this degree belong to you, Adelaine, and Maryn.

My parents, Adele and William Priest, are the source of so much in my life. Their patience, acceptance, and unconditional love has not only nurtured my siblings and me, but has touched the lives of so many people fortunate enough to have met them. My mother's selfless care for others and my father's dedication and compassion fuel my commitment to making the world a better place.

Finally, I dedicate this work to the children in our classrooms who struggle with antiquated approaches to learning. As public school systems waffle between standardized accountability and differentiation they are withholding receptive and expressive learning opportunities that you deserve. Know that there are people around you, such as this researcher, who dislike the act of reading, but love to learn.

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CHAPTER ONE: INTRODUCTION

Every year districts across the nation administer state and district standardized tests in an effort to track the progress of the students in their schools. If a child scores well in the areas of reading and mathematics they are almost assured an easy road to academic success. Conversely those children who struggle with these subjects find it a most arduous task to be successful and maintain a love of learning. Struggling readers in our public schools can quickly become disengaged and disenfranchised as they attempt to maintain pace with students who are on goal. The causes of their struggles vary in nature and have been the motivation for many studies and an equal number of proposed instructional methods. Gersten, Fuchs, Williams, and Baker (2001) discussed the complexity of the reading process as it includes decoding the text, summarizing content, identifying main ideas, creating questions based on the reading, and looking for answers to those questions. Unfortunately, most of the classroom strategies and efforts of quality reading consultants, hard working researchers, and teachers in our schools focus only on what Vasudevan (2006) refers to as the sanctioned literacy and Kress (1999) calls an insider literacy that are part of the long history of schooling and standardized testing.

To develop the balance of skills not addressed in the sanctioned literacy a curriculum differentiated with multimodal instruction is needed. This study addressed the importance of the graphic novel as one multimodal approach. This qualitative study employed a multiple case study approach to examine the perceptions of eighth-grade students as they read *The United States Constitution: A Graphic Adaptation*, the graphic novel by Jonathan Hennessey and Aaron McConnell. Through a deep examination of students' interaction with the book, this study generated insight into how graphic novels can facilitate better knowledge acquisition for the wide range of learners in our public schools.

Rationale for Selecting the Topic

Given its place of prominence in the academic setting, language arts and literacy have been the primary focus of schools attempting to improve scores on yearly standardized testing. As such, many school districts are pressured into implementing myopic and uninspired writing and reading remediation programs. While they are often times presented wrapped in a new package, they essentially employ the standard approach of decoding text when what is needed is a multimodal strategy that allows for the effective reception and expression of ideas. Stein (2000) discusses the concept of multimodality as being more equitable and democratic than instruction that is one-dimensional in approach.

The purpose of this study was to explore the perceptions of middle school students with graphic novels and describe how those students process and integrate information found within the novel. Using purposeful sampling techniques based on Otis-Lennon School Ability Test scores (OLSAT), and the Perceptions of Reading and Graphic Novels Survey (PRGNS) the author hoped to explore a predisposition for effective and efficient interpretation of a graphic novel. By selecting a sample of students with contrasting learning styles this study can be used to inform curriculum decisions regarding language arts, adds to the discussion of multimodal literacy, and gives voice to those who may benefit the most from it.

Statement of the Problem

It is hardly controversial to state that language arts skills, with mathematics skills as a close second, is the single most important determining factor in a child's academic success in our public schools. For too many years the acquisition of knowledge has been resigned to decoding text in books (Hatt, 2007). The problem can best be summarized in our current view of the smart learner. In her research on socially developed figured worlds, Hatt (2007) discussed the figured world of smartness for children in an urban setting. These children described artifacts of

smartness as being the grades, diplomas, and books they see academically successful students possessing. As Hatt stated, these artifacts are the gate keeping mechanisms that will allow them to earn degrees from universities that assign books to be read and books to be studied.

Conversely the street smarts or interpersonal aptitude to communicate effectively within a dynamic group of one's peers does not hold much importance on a student's report card. A child's acute ability to design complex images may get her a solid grade in art class, but will not save her from a remedial reading program that makes her feel inadequate (Hatt, 2007).

Graphic novels represent one form of multimodal literacy that middle and high school aged students can read, visually interpret, and enjoy without the constraints of a text-only narrative. The use of graphic novels in the classroom is a relatively new instructional strategy. For years the graphic novel was synonymous with the comic book and hence was banned from school libraries and class curriculum (Jacobs, 2007). In recent years, graphic novels have been soaring in popularity and prevalence. In 2005, graphic novel sales topped \$250 million and in 2002 the American Library Association featured a keynote speech by Francisca Goldsmith addressing the literary value of graphic novels (Cromer & Clark, 2007).

Despite the recent validity and popularity that the graphic novel has received it still remains an untested area of literacy instruction. While numerous articles have been written on the subject of graphic novels and their use in schools, very few research studies have taken place. Hammond (2009) conducted a qualitative study in using the graphic novel *American Born Chinese* in a high school setting. Her study examined the general perceptions of high school students with this fictional book. Similar research studies conducted by Lamanno (2007) from Pennsylvania State University explored the use of graphic novels with struggling readers. While this study focused on similar themes as the Hammond study, and does address struggling adolescent readers it goes further by attempting to isolate levels of verbal and nonverbal

cognition as being determinants in student's comfort level with this nonfictional title. As verbal and nonverbal assessments like the Otis-Lennon School Ability Test (OLSAT) are readily available to many districts this study should be of great interest.

Potential Benefits of the Research

Current research in the field of multimodal literacy, as it pertains to graphic literature and graphic novels, has been limited to surveying the attitudes and perceptions of grade school students and their teachers. The studies in this area are limited, exploratory in nature, and have focused primarily on fictional graphic novels. The use of graphic novels in public schools across the United States has been growing exponentially in the past decade; however its legitimacy as a teaching tool and as a literary genre of worth has not yet been established. This research study adds to the growing body of literature related to this topic, while focusing on the attitudes and abilities of middle school students that possess varying levels of verbal and nonverbal learning styles.

Additionally, this research informs curriculum development in the language arts for middle school programs. As schools and educators look to differentiate curriculum in an effort to address the needs of a diverse population of learners, this study provides insight as to the benefits or pitfalls of using graphic novels as a means to introduce, develop, and comprehend themes in nonfictional subject matter.

For the growing number of reluctant and struggling readers in our public schools this research offers an examination of students' visual cognition at an age when they are able to develop vocabulary and sequence meaning from symbolic and intricate images. Educators will become more informed about the effectiveness of the graphic novel and its appropriateness for addressing the needs of learners from these varying levels of reading aptitude.

Definition of Key Terms

The following terms are relevant to this study:

1. **A Graphic Novel** is a story consisting of narrative text and/or dialogue that is combined with sequentially presented images and art (Eisner, 2008). Graphic novels are similar to comic books in that they use text boxes, speech bubbles and graphic panels. A graphic novel, however, is a full-length narrative where the reader must decode text and images (Simmons, 2003).

2. **Literacy** is, “The ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts.

Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society” (UNESCO, 2004, p.12).

3. **Visual Literacy** is a set of skills that allows one to create and interpret visual messages. As Brill, Kim, & Branch (2007) discuss, “A visually literate person is able to: (a) discriminate and make sense of visible objects as part of a visual acuity, (b) create static and dynamic visible objects effectively in a defined space, (c) comprehend and appreciate the visual testaments of others, and (d) conjure objects in the mind’s eye” (p. 36).

4. **Multimodal Literacy** is, “The complex interplay of different modes of contemporary communication including sound, gesture, music, visual images, and written and spoken language” (Kress & Van Leeuwen, 2001, p.8)

5. **Semiotics** is the process of creating meaning using signs of all kinds including pictures, gestures, music, and not just words (Siegel, 2006). Semiotics played an

instrumental role in the concept of a grammar of visual design discussed by Kress and van Leeuwen in 1996 (Unsworth, 2006).

6. **Mind Wandering** is, “engaging in cognitions unrelated to the current demands of the external environment.” (Schooler, et al., 2011, p.319)

Methodology

Research Questions

The following research questions will guide this qualitative study:

1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?
2. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?
3. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

Description of the Setting and the Subjects

The study took place in a suburban middle school located in western Connecticut. The participants in this study were selected as a purposeful sample chosen to fit the parameters of this qualitative study. Subjects consisted of six male and five female eighth-grade students. The students varied in ages between 12 and 14 years of age, and were drawn from a teamed eighth-grade population of 109 students. Based on the assigned academic team of the cooperating teacher in this study, 109 student Otis-Lennon School Ability Test (OLSAT) scores were examined in an effort to identify students in three groups: (a) students with high verbal scores as compared to their nonverbal scores, (b) students with high nonverbal scores as compared to their verbal scores, (c) students with minimal discrepancy between their verbal and nonverbal scores (DeStefano, 2001).

Given the standardized nature of the OLSAT, and in an effort to identify the socially constructed mindset of students as readers of traditional text-based instruction, the team of 109 students was administered the Perceptions of Reading and Graphic Novels Survey (PRGNS), a researcher-developed instrument. This instrument was used in concert with other qualitative data

to provide a rich description of the subjects and to inform development of individual interview protocols.

Research Design

The research design of this study was a qualitative, naturalistic study in which the researcher observed and engaged the subjects and the topic of study in their natural environment. A multiple case study was constructed based on the theoretical propositions constructed from a review of literature and the study's research questions (Yin, 2009). A holistic and context sensitive examination focused on individuals nested within the bounded cases of learning styles defined through the Otis-Lennon School Ability Test (OLSAT). The data collected in this study were coded, analyzed, and examined for emerging themes and patterns. Coding and within-case content analysis were presented based on data collection timelines followed by cross-case pattern analysis in an effort to answer the research questions and explore the potential value of graphic novels as an instructional tool (Creswell, 2007).

Instrumentation

Otis-Lennon School Ability Test. The Otis-Lennon School Ability Test, Eighth Edition, is a group-administered, 72-question, multiple-choice test that is available in seven levels (DeStefano, 2001). The test measures verbal, quantitative, and figural reasoning skills that are needed for children's success in school. The level used in this study, level F for grades six through eight, is an independent, timed test which takes approximately 60 minutes to administer. Tasks within the test are broken into verbal and nonverbal categories. Verbal clusters include verbal reasoning, and verbal comprehension, while nonverbal clusters include quantitative reasoning, and figural reasoning. Scores on the OLSAT are reported for verbal, nonverbal, and total scores. These are normalized standard scores with a mean of 100 and a standard deviation of 16 (Pearson, n.d.).

As reported by DeStefano (2001) the reliability results for total scores yield values in the low .90s and verbal and nonverbal subtest estimates are typically in the low to mid .80s. Score reliability and internal consistency reliability estimates are also reported with internal consistency using the Kuder-Richardson Formula 20 (KR-20) for grade and age, and the KR-21 for content clusters (DeStefano, 2001). Evidence for test content validity obtained through correlation of the OLSAT 8 with OLSAT 7 yielded scores that ranged from .74 (Level G) to .85 (Levels A, F). Internal test validity was established correlating raw scores across test levels and yielded scores varying from .50 to .70 (DeStefano, 2001).

Perceptions of reading and graphic novels survey. A researcher-created survey was administered to the subjects in this study. The survey consists of twelve questions containing Likert-type and short-answer responses. Questions related to students' attitudes about traditional reading and the reading of graphic novels (see Appendix A). This survey was administered to students electronically via the school's website where students use a personal account to log in.

Semistructured interview questions. Semistructured interview questions were used in this study as another method of collecting information from the students (see Appendix B). Gall, Gall, and Borg (2007) described semistructured interview questions including the use of specific, structured questions that allow for follow-up, clarification questions that yield a deeper understanding of the situation being examined. The interview questions helped inform Research Questions One, Two, and Three. The subjects were asked the same initial set of interview questions, and given equal measure of flexibility in order to elicit thick descriptions of the experience through follow-up questioning (Creswell, 2007).

Classroom observation checklist and field notes. During the course of the study classroom observations took place to help inform Research Questions One and Three. The 11 participants in the study were spread out among four different social studies classes that met

during varying class periods throughout the day. It should be noted that for each classroom observation the researcher attended four consecutive class periods in order to observe all 11 participants that particular day.

The role of the researcher was primarily observer, and occasionally participant-observer. A digital checklist form and field notes were maintained on the researcher's laptop in order to track both descriptive and reflective information (Creswell, 2007). Field notes included seating charts based on subjects' class periods coded numerically and using pseudonyms (see Appendix C).

Focus group protocols, recordings, and field notes. Following the collection and exhaustive analysis of data a focus group was drawn from the students in the three case study subgroups. The purpose of this group was to inform all three research questions and provide additional information regarding themes and concepts that emerged from cross-case pattern analysis of surveys, observations, work samples, and interviews (Patton, 2002). The researcher established a set of semistructured research protocols to guide the focus group interview (see Appendix D). The protocols were designed periodically throughout the study and a final edit was completed just before the focus group was conducted in December. The focus group interview was recorded using a digital recording device and then transcribed. Field notes were gathered during the focus group interview to record subjects' behavior and affect.

Student work rubric. During the course of classroom observations student work was examined (see Appendices E, F, and G). Open-ended written responses, pictorial responses, and storyboard completion were studied to assess students' level of visual interpretation, as addressed in Research Question One. Student work samples also explored how students used prior knowledge to process new information found in the graphic novel, as addressed in

Research Question Three. Additionally, independent assignments and group work helped inform interview protocols and advanced a deeper understanding of the student experience.

Description and Justification of the Analyses

Information gathered from the Otis-Lennon School Ability Test (OLSAT) was examined to establish bounded cases for the study. OLSAT scores were reported as a total score which is then broken down into verbal and nonverbal scores. Four students were purposefully sampled who had a verbal score at least one standard deviation greater than their nonverbal score. Four students were selected with a nonverbal score at least one standard deviation greater than their verbal score. Four students were selected that represented verbal and nonverbal scores with a range no greater than one standard deviation. Efforts were made to ensure that each of the three groups contained both male and female students.

Data collected during interviews, observations, and focus groups were audio recorded, and transcribed. Student work samples were analyzed using a rubric to inform Research Questions One and Three (see Appendix G). Results of the Perceptions of Reading and Graphic Novels Survey (PRGNS) were used to inform Research Question Two regarding students' attitudes about reading and the use of graphic novels. Having provided information towards students' preconceived notions related to graphic novels, the PRGNS allowed for a rich and thick description of the subjects and a well-informed selection of the focus group. Data were later coded, recoded, and analyzed within-case and cross case for emerging patterns and themes. A combination of content analysis advanced by Patton (2002) and Yin (2009) was used.

Data Collection Procedures and Timeline

Sampling procedures began in August of 2011 with a review of student Otis-Lennon School Ability Test (OLSAT) scores (DeStefano, 2001). This sampling process continued in

early September. The study group of 11 students was selected, consent forms were distributed, returned, and the study began in the third week of October.

The Perceptions of Reading and Graphic Novels Survey (PRGNS) was administered to study group members during the first week of the study. This instrument was administered online to students using the school integrated website. Results of the PRGNS assisted in establishing interview protocols and selecting a focus group.

An introductory observation and lesson was presented by the researcher regarding graphic novels on October 24th. During this observation and those to follow, field notes were gathered using descriptive and reflective notation (see Appendix C). Three additional observations were conducted over the course of the study.

Student interviews were conducted in 35-minute sessions in the school's library media center. Student interviews were conducted over three days during the week of November 21st. All interviews were recorded, transcribed, and coded for analysis.

Student work samples were collected on three separate occasions during the study. These work samples included short-answer responses for visual identification, visual interpretation, and integration of prior content with information from *The United States Constitution: A Graphic Adaptation* (Hennessey & McConnell, 2008), the graphic novel used in this study. A student work rubric was used to identify specific receptive and expressive skills (see Appendices E, F, and G).

The focus group meeting was conducted during the final week of the study on December 13th. Discussions were recorded and transcribed. Content analysis was then conducted from January of 2012 to February of 2012.

Limitations of the Study

The researcher acknowledges limitations in the study. As stated earlier the research design of this study is a qualitative, naturalistic study in which the researcher observed and engaged with the subjects and the topic of study in a natural environment. As such certain criteria were addressed to maintain appropriate levels of trustworthiness as mentioned by Krefting (1991).

A naturalistic, qualitative approach to research poses challenges in terms of establishing reliability and validity, constructs typically applied to quantitative research. As Krefting (1991) points out in her research, often times the aim of qualitative research is to further a discussion on a topic, not to test a hypothesis. Commonly used statistical benchmarks that establish reliability and validity do not apply. This study established trustworthiness using the four-part model developed by Lincoln and Guba. The four aspects of trustworthiness include truth value, applicability, consistency, and neutrality (Lincoln & Guba, 1985).

To establish truth value this study employed several different strategies. Reflexivity and self-disclosure will be documented in a researcher field journal. This journal documented the researcher's own background interests, bias, and perceptions as well as serving as a logistical record (Krefting, 1991). Triangulation of data methods, member checking, and peer examination was used to help ensure truth value. Method triangulation and reflexive analysis served to establish neutrality.

As Krefting (1991) explained it is not the researcher's job to prove transferability, otherwise known in quantitative research as external validity. It is simply the job of the researcher to provide a thick and dense description of all information so as to allow validity judgments to be made by others. In this way not only population validity concerns are addressed, but also many of the ecological validity issues related to reproducing the research at a

later time and place. Transferability for the proposed study will be established by providing very detailed information regarding the subjects and setting in the study. The techniques of member checking and repeated observations ensured that the data collected are typical for the respondents.

In order to ensure that the study is consistent and dependable a detailed description of the methodology was provided. While a stepwise replication technique cannot be employed in this study there will be code-recode methods, as well as triangulation of data methods used in order to enhance dependability (Lincoln & Guba, 1985).

Graphic novels are a new and emerging genre of literature that is being used in the classroom. It was found through administration of the Perceptions of Reading and Graphic Novels Survey (PRGNS) that the use of the graphic novel in this study was the first time most of the students had read a graphic novel. Generalizability of the study's results, albeit a qualitative study, can be threatened due to novelty; however the novelty itself could be generalized to larger populations (Gall, Gall, & Borg, 2007).

CHAPTER TWO: REVIEW OF THE LITERATURE

To create a context for this study, the review of literature is divided into four sections. The review begins with an historic overview of reading comprehension and the emphasis that has been placed on the role of traditional reading in public schools. This section will address the importance of differentiated instruction and its role in creating successful learners. The next section of the literature review examines literacy, communication and the various methods learners employ to transmit and process information. Semiotics, visual literacy, and auditory processing are all discussed in terms of the role they play in effective learning. The third section of the literature review examines working memory. The visuo-spatial, phonological, and episodic buffer areas of Allan Baddeley's working memory model are discussed and visuospatial binding's relationship to processing new information is explored. The literature review concludes with an examination of graphic novels, their evolution, and their impact on the literary world. Various graphic novel pioneers and their titles are profiled in order to describe their role in the present day literary landscape.

Reading Comprehension

Historical Context

Early instruction. Too often educators and administrators find themselves employing corrective measures for problems that originated in a time and place much different than today's classroom. Reading comprehension has been the cornerstone of formalized public education in the United States for centuries. As Jennifer Monaghan (1987) illustrates in her work chronicling education in colonial America, the importance of reading comprehension can be seen in the focus of skills instruction for boys and girls. Reading and writing were skills taught in all schools, but in places where there were no schools only the boys were taught to read and write.

Nonetheless, because of the critical role reading played in education girls were instructed in reading only.

In the late 1700s Noah Webster crystallized a formal approach to reading instruction when he created the blue backed *Speller* (Westerhoff, 1978). The *Speller* was one of three volumes in his larger work, *A Grammatical Institute of the English Language* which included a grammar and reader edition. In the spirit of Jean Piaget, Webster espoused an approach to education that focused on the cognitive development and readiness of the child. He believed that teachers should not try to teach a child to read before the age of five. Children of three or four simply were not developmentally ready for the task. Webster's *Speller* began instruction on the alphabet and progressed phonemically towards more complex words and sentence structure (Westerhoff, 1978). By 1837 the *Speller* had sold 60 million copies, making Webster's principles of reading instruction a staple in United States public education (Ellis, 1979).

Other volumes and titles aimed at reading instruction emerged on the educational landscape such as McGuffey's *Readers*, a series of grade level reading selections with reading comprehension activities for elementary level students. Utilizing phonemic awareness, enunciation, decoding strategies, and other commonly used skills that aid in reading comprehension, McGuffey's *Readers* series sold over 120 million copies as of 1960 (Westerhoff, 1978).

With these standard works of public education in place, reading comprehension was engrained in the public school model of Horace Mann, which established grade level classrooms introduced in Massachusetts in the mid 1800s (Hunt, 2010). With the industrialization and modernization of the United States during the early to mid 1900s, grade level primary and high schools around the country prepared students in factory modeled institutions with reading comprehension as the cornerstone of success for much of the curriculum.

Early instrumentation. For almost a century now educators and researchers in the United States have been creating and testing various reading assessments aimed at measuring students' abilities. Debates have occurred over the validity and accuracy of many of these instruments claiming that they do not measure what needs to be measured. In some cases, as Farr (1969) described, educators may not even be sure what it is they have measured. Too often reading instruments are administered and it is unclear whether they are measuring the strength of reading comprehension or rather the speed of comprehension. When examining subtests of vocabulary are results indicating verbal intelligence or are they measuring vocabulary knowledge?

As early as 1913, a report was published by Rudolph Pinter describing the comparison of fourth graders' oral and silent reading skills. Students were given a passage to read and asked to write down what they could remember without looking back at the passage (Moore, Readence, & Rickelman, 1983). In 1916 F. J. Kelly developed the Kansas Silent Reading Test. Within this assessment Kelly attempted to address four criteria that he felt were essential for an instrument. These areas include (a) measurability of skill, (b) simplicity of instrument, (c) measurability of ability and progress, and (d) testing time brevity (Gray, 1916).

Additional reading tests emerged in the early 1900s such as the Curtis Silent Reading Test, a timed test where a student had three minutes to read as much of a two-page story as possible. The student then had to answer yes-no questions that followed (Farr, 1970). The Chapman Reading Comprehension Test, Monroe's Standardized Silent Reading Tests, and Haggerty Reading Examination were additional instruments that emerged around 1920, each having some elements of time limits. Various elements of these tests are still seen today in some reading tests. The Monroe's Standardized Silent Reading Tests used short passages followed by a choice of four words, of which the test examinee needed to choose from appropriately. This

style is very similar to subtests of the Gates-MacGinitie Reading Test still used today (Gates, 1921). However, even in this stage of testing infancy during the early 1900's questions were being raised as to the validity of these reading comprehension tests. Joseph Dewey addressed this issue while reviewing the Metropolitan Achievement Tests for the *1938 Mental Measurements Yearbook*.

A valuable feature of the tests on reading comprehension is the effort to measure the pupils' ability to make inferences from the material read. However, portions of these tests may measure intelligence rather than reading ability. (Buros, 1938)

As more instruments of reading comprehension were developed in the mid 1900s many researchers and educators began to find deficiencies in the testing constructs. The time period from 1940 to 1970 was wrought with attempts at measuring reading comprehension.

Unfortunately many of these instruments contained inconsistent question structure and a muddled focus on reading skills (Farr, 1970). Clarence Derrick illustrated the dilemma while reviewing *The Survey of Reading* published in 1959. Derrick had examinees attempt to answer questions that followed reading passages prior to reading the selections. In one instance a student answered seven out of eight questions correctly without reading the paragraph demonstrating that prior content knowledge was being measured, not reading comprehension (Buros, 1965). In an attempt to legitimize the process Farr (1970) suggested an approach to testing reading comprehension focused on tasks and purposes that draw individuals to specific reading material. These purposes may be as simple as reading directions or locating information in an encyclopedia, yet they could be as complicated as determining a character's state of mind in a novel. In 1995, Farr provided an idealistic challenge in a keynote address at the International Reading Association Convention in Anaheim, California.

I have a dream that assessment will be accepted as a means to help teachers plan instruction rather than a contrivance to force teachers to jump through hoops... I have a dream that assessment will become a helpful means to guide children to identify their own literacy strengths rather than a means to conveniently label them... I have a dream that assessment will emphasize what children can do rather than simply what they know. (Farr, 1996, p. 424)

Today, across schools in the United States, a wide variety of reading assessments are being employed to assess students' reading abilities. While many of these assessments have been refined, improved, and focused on specific reading skills, questions still arise as to the correctness of their use in schools. The Degrees of Reading Power (DRP), a commonly administered reading test, while reviewed as having strong correlation to other instruments of reading and good reliability, has been criticized for having poor validity data and being narrowly focused (Marino, 2009). Gray's Oral Reading Tests-Fourth Edition (GORT-4) on the other hand provides a detailed look at a student's oral reading abilities in reading rate, fluency, comprehension, and accuracy. This instrument also targets areas of reading deficiency and strength thus serving as a strong diagnostic tool for schools attempting to identify students in need of special services (Wiederholt & Bryant, 2001).

While the history of reading assessment in the United States has spanned a century many questions are still being asked by educators and administrators in our schools. How do we address the issue of reading comprehension, the centerpiece of a child's education in the public classroom? What instruments should we use to measure reading skills? What do those instruments really measure? In what ways are we teaching reading? In what ways are we not teaching reading? Perhaps the latter is the most important question of all.

Differentiated Reading Instruction

One of the goals of educators working with adolescent students is to have students understand written text, make meaningful connections with the text, and ultimately think critically about the messages derived from the text. This is quite a challenge. Working within that critical area of cognitive development, that Vygotsky (1978) referred to as the zone of proximal development, teachers have employed various strategies to obtain success.

Differentiated instruction is one such manner in which educators have tried to address the needs of individual students. Tailoring instruction based on the individual needs and preferences of a student is not a new idea. Thousands of years ago Confucius taught by taking a vested interest in his individual students. As he sought to enhance the strengths of his students he would concurrently work on building their particular weaknesses. After discussing the same topic with two different students Confucius was said to address their individual questions with entirely different answers based on the personality of the individual (Sun, 2008).

In the United States differentiated instruction was a daily occurrence in the one-room school house, primarily out of necessity. Due to the isolated and compartmentalized nature of American society in the colonial era, the American classroom consisted of a variety of ages and learning abilities. The teacher of the one-room schoolhouse needed to address the needs of a myriad of students from primary to secondary school levels.

Models of differentiated instruction. After public schools in the United States were reconfigured by grade levels, thoughtful educators continued to see the inherent value in individualization of instruction, particularly in reading. In and around 1952, a groundswell was developing around the practice called, “individualized reading”. Veatch (1967) described this movement as being inappropriately named as the idea transcended reading into other disciplines such as mathematics and science. In many primary classrooms teachers began to employ “key

vocabulary” or “sight vocabulary” based on words children found personally relevant. These words would then be used to instruct that specific child in language arts, including an independent writing program free of teacher-driven prompts or themes (Ashton-Warner, 1963).

More recently various models of differentiated instruction have been employed to improve language arts skills. One such program researched by Gens, Provance, VanDuyne, and Zimmerman took place in a Chicago primary school (1998). Using a multiple intelligences model, teachers developed multiple intelligence portfolios for each student in first (n=16) and second grade (n=60). After targeting student issues with reading motivation and comprehension the teachers implemented a language arts curriculum that dovetailed with students’ multiple intelligence profiles. A twelve week study was conducted to examine student scores on the Gates-MacGinitie Reading Test. While the primary focus of the study was reading comprehension, researchers found that vocabulary development was positively affected with 19 second grade students showing a growth rate of a year or more. Winter administration of the Gates-Maginitie indicated that 67% of the first and second graders were reading in the above average range, as compared with 20% above average prior to the study in the fall (Gens et al., 1998).

A study conducted by Baumgartner, Lipowski, and Rush (2003) in primary and middle schools in suburban Chicago also focused on differentiated instruction as a means to improve reading achievement. Researchers analyzed probable cause data related to deficient phonemic awareness, reading comprehension, and general interest in reading using the San Diego Quick Assessment, Nonsense Word Test, a student survey, and a reading strategy checklist. The subjects consisted of students in second grade (n=25), third grade (n=27), and seventh grade (n=25) (Baumgartner et al., 2003). With a focus on differentiated instruction and student choice instructional strategies in this study focused on four areas: (a) flexible grouping, (b) student

choice on a variety of tasks, (c) increased self-selected reading times, and (d) access to a variety of reading materials. After a four month implementation Baumgartner et al. (2003) reported, “In addition to improvements in decoding, students exhibited marked improvement in use of reading comprehension strategies. More students claimed they were good at reading after the implementation than before” (p. 38). This idea of using student choice as one aspect of differentiating instruction is nothing new, as evidenced in work by Willard Olson (1952). He found that by creating individualized reading conferences between students and the teacher, the reading needs of each child can be dealt with at an appropriate level within a student-selected context (Olson, 1952).

Socio-economic factors present in urban school districts across the country represent an enormous challenge to educators attempting to improve reading comprehension and the language arts skills of children. These complex and often times discouraging conditions also represent an opportunity for reforming methods of reading instruction. In their study comparing four different literacy programs of first grade classrooms of the Boston city schools Tivnan and Hemphill (2005) found that each of the four programs implemented yielded moderate results, but one in particular positively affect reading comprehension scores. The four programs examined at 16 schools in this study were Building Essential Literacy (BEL), Developing Literacy First (DLF), Literacy Collaborative (LC), and Success for All (SFA). Using a wide array of targeted literacy skills researchers examined scores on the Woodcock-Johnson Diagnostic Reading Battery (WJDRB), Yopp-Singer phonemic awareness test, Peabody Picture Vocabulary Test III (PPVT-III), and Gates MacGinitie Primary I (GMRT-4). Tivnan and Hemphill (2005) highlighted the effectiveness of the DLF program as it related to reading comprehension by noting, “DLF...was the least prescriptive about the types of early reading materials, showed the greatest success in bringing children close to grade-level expectations in reading comprehension

at the end of first grade” (pp.434-435). Additionally it was found that teachers in the DLF classrooms, because of the wide range of texts available for differentiated instruction, used more challenging reading material than the other programs in the study. With a variety of more difficult texts, and adequate time allotted for discussion about the material, children in the DLF program showed greater growth on the GMRT over the other three programs.

A good deal of time has been spent by researchers examining ways in which differentiated instruction can lead to improved literacy skills for public school children, particularly those who are not meeting expectations. This justifiable and well-deserved attention can however overshadow the needs of academically gifted students. A mixed-methods study was conducted by Reis and Boeve (2009) over a six week period to examine how the School-wide Enrichment Model-Reading Framework (SEM-R) might facilitate greater self-regulation and reading fluency amongst academically gifted students. The setting was an urban primary school containing third, fourth, and fifth grades with a total population of 500 students. The five students in this qualitative study were exposed to higher order thinking questions, challenging materials, self-selected reading materials, and individualized attention during 12 after school sessions spanning six weeks. After implementation and administration of the Elementary Reading Attitude Survey (ERAS), Scales for rating the Behavioral Characteristics of Superior Student – Reading (SRBCSS-R), and Reading Interest-a-Lyzer the researchers concluded:

These five gifted students who spent all of their time in an urban school with a great deal of remedial content responded to individual attention and encouragement. This type of pedagogy and differentiation should be available to high potential students on a daily basis. (Reis & Boeve, 2009, p. 235)

Working within the regular classroom setting other researchers have investigated models and strategies to enhance instruction of reading. One such method used to develop reading

comprehension is reciprocal reading. Research reported by Brown and Palincsar (1986) described the practice of reciprocal reading as a cooperative, collaborative learning process. Students in reciprocal reading are supported by expert scaffolding, direct instruction, and modeling. By using four comprehension strategies of predicting, clarifying, questioning, and summarizing this technique has shown to be highly effective over the years.

In addition to using the key components of reading comprehension a central element in reciprocal teaching is reciprocal dialogue. As Freire (1997) points out in his research on collaboration, the only way to take part in critical thinking is through active communication. In a study done researching the effects of peer-led discussion groups Soter, Wilkinson, and Murphy (2008) found that when students were empowered with authentic, open-ended questions and a forum to express their views, longer and more elaborate ideas were generated. When students were given the proper amount of time to absorb material and express their views, there was a greater degree of higher level thinking and critical analysis.

As timely and poignant as these individualized programs seem they, and programs similar to them, have had to withstand the pressures of current standardized testing mandates. These mandates and the funding tied to them have extorted school districts, forcing them to marginalize progressive differentiation initiatives, and focus heavily on improving state test scores (Goodlad, 2002).

Identification as a means to differentiate. Regardless of the setting in which it takes place or the model being used, the implementation of differentiated instruction clearly addresses the needs of the individual. When given sufficient time, training, and financial support these programs are shown to assist students who are struggling with reading comprehension. This implementation process cannot be arbitrary, but rather must follow a thoughtful, analytic, and

detailed screening process. Once this is done sufficiently, a prescriptive strategy can be employed.

In a study of 230 fourth grade students at an urban elementary school Speece et al. (2010) developed a three-factor model to help identify at-risk readers. In an effort to move away from arbitrary test score benchmarks during the screening and identification of students in need of reading interventions, the researchers compared group-administered tests and teacher rating scales with growth estimates and individually administered tests. What developed was an identification model that used reading comprehension, word reading, and reading fluency. Phonological accuracies and word reading have been the focus of many studies of struggling readers including a five-year longitudinal study by Wagner et al. (1997), however Speece et al. (2010) found that by fourth grade the skills of fluency and comprehension were discrete enough to isolate and therefore provide a more complete reading profile.

In an attempt to improve the identification process of first and second grade students who may have reading difficulties, Sofie and Riccio (2002) challenged the use of traditional norm-referenced reading achievement tests as the sole determinant in assessing a child's reading proficiency. Researchers in this study looked at varying methods and measurements of reading ability including curriculum-based measurements and phonological processing and found that a proactive approach to targeting specific areas of a child's reading development can facilitate accurate and expeditious intervention early on in a child's schooling. When this purposeful and targeted method is employed educational and socioeconomic variables that have contributed to delayed reading skills acquisition can be isolated from processing issues (Sofie & Riccio, 2002).

Summary

As a consequence of the numerous studies conducted and books written about differentiated instruction we are left to behold a myriad of programs and possibilities that have yielded varying levels of success, focused on multiple aspects of curriculum, with varying groups. This reality is as encouraging as it is complicated to the educator who embraces differentiation. When instruction in the classroom contains differentiated and rigorous instruction that is based on sound data collected from the participants it leads to improved reading instruction and greater student success (O'Connor & Simic, 2002). In its true form, differentiation of instruction honors the individual differences of students and contributes to positive growth in all learners. The problem lies in the fact that too many instructors are unaware or unwilling to participate in diversifying their teaching repertoire to suit the needs of the students.

Reading Motivation

In classrooms across the country educators routinely encounter students with a wide range of reading skills. The reasons for the discrepancies in reading achievement are many and represent a myriad of social, cognitive, and psychological factors that influence a child's performance. Put in its simplest terms the more a student reads, the greater the chance he or she will become a better reader (Gambrell, 2009). A skilled and talented reader who faces few challenges in the way of cognitive processing and reading comprehension will undoubtedly read often. In the same way that physical limitations and time constraints prevent individuals from being concert pianists or professional athletes, so too there are obstacles that prevent children from being avid readers and experiencing the reinforcement of successful, fluid reading. What then motivates students with a range of reading difficulties across these obstacles and towards success? What breaks the cycle of this self-fulfilling prophecy?

Theories on Reading Motivation

Reading motivation for children in today's classroom often revolves around the idea of success and how a child views his or her likelihood of succeeding at that task. As Guthrie and Wigfield (1997) explain researchers have found consistently that the beliefs children have in their abilities, and thus their chance of succeeding, greatly predicts their performance on achievement tests in reading. In addition to their beliefs about their own abilities, students' perceptions about how they expect to perform on a given task, as well as their self-efficacy plays an important role in predicting reading achievement (Guthrie & Wigfield, 1997).

Bandura (1977) discussed self-efficacy as a person's ability and capacity to put his or her skills into action. A person's belief that he or she can actually accomplish a task is known as his or her efficacy expectation and is found to be a major factor in determining the activities people choose to participate in, how willing they are to put effort into a task, and how long they will persist at a given task (Bandura, 1977). In his research with students, Schunk demonstrated that by teaching children to become more efficacious and believe that they were efficacious he was able to improve their performance. Additionally he found that when children believed they were more efficacious and capable they were more likely to engage in reading (Schunk, 1991).

Drawing on aspects of Bandura's social cognitive theory, the expectancy-value theory for motivation described by Wigfield and Eccles (2000) incorporates both a student's perception of their competence (expectancy) with their appreciation of reading engagement (value). Both intrinsic and extrinsic motivational factors are considered. Based on this theory if a student does not expect to perform well or he or she do not see value in the reading task, then he or she will be unlikely to be motivated to engage in reading (Wigfield & Eccles, 2000).

More recently Guthrie (2004) and his colleagues developed a theory of motivation that focuses on the characteristics of an engaged reader. This engagement theory draws support from

a 1998 National Assessment of Educational Progress (NAEP) report that showed a high correlation between engaged readers and reading comprehension achievement. It was found that nine-year-olds from low-income and low-education family backgrounds, but who were highly engaged readers, substantially outscored students who came from high-education and high-income family backgrounds, but were less engaged readers (Gambrell, 2011). Guthrie (2004) noted that it was remarkable to find that engaged readers could overcome factors such as parental education and socio-economic disadvantage in this regard.

In an attempt to analyze motivation and students' engagement with reading Wigfield and Guthrie (1995) developed The Motivations for Reading Questionnaire (MRQ). The revised version of this questionnaire contains 54 items covering 11 constructs of motivation (see Table 1). Of these constructs the most clearly defined in their first study of 100 fourth and fifth-graders were social reasons for reading, reading competition, reading work avoidance, reading efficacy, reading challenge, reading curiosity, and involvement (Wigfield & Guthrie, 1995). This study along with a second using the MRQ with 600 fifth and sixth-graders yielded several conclusions. First results indicated that many different motivators for reading relate positively to each other. This means that students have a variety of intrinsic and extrinsic motivators that contribute to their motivation.

Table 1

Motivations for Reading Questionnaire Constructs and Examples

Construct	Example Indicator	Number of Indicators
Reading Efficacy	I know that I will do well in reading next year	4
Challenge	I like hard, challenging books	5
Curiosity	I read about my hobbies to learn more about them	6
Involvement	I enjoy a long, involved story or fiction book	6
Importance	It is very important for me to be a good reader	2
Recognition	My friends sometimes tell me I'm a good reader	5
Grades	I read to improve my grades	4
Social	I sometimes read to my parents	7
Competition	I like being the best at reading	6
Compliance	I always try to finish my reading on time	5
Reading Avoidance	Complicated stories are no fun to read	4

Text Connections to the Reader

While many of the indicators addressed in the MRQ by Wigfield and Guthrie represent extrinsic factors such as recognition, grades, or compliance, the intrinsic motivators relating to engagement will sustain a student's independent learning better over time. The connection that a student makes with the text has been studied in terms of the novelty, ambiguity, and intrigue that it presents (Wigfield & Guthrie, 1995). For students who are assigned reading in school it is essential that a level of text-based interest exists. That is to say that the reader must be drawn

into the reading through unexpected or surprising items, words that trigger imagery, or characters that they can relate to.

In a study designed to test memory and interest level of textbook versions, Graves et al. (1991) presented 16 students with four separate versions of a high school history textbook. The first version was the standard textbook. Three other versions were rewritten by magazine editors, composition teachers, and text linguists respectively. Findings suggest that the composition teacher authors who incorporated the use of detailed examples, colorful language, and entertaining anecdotes wrote texts where students recalled a higher degree of information than the other three textbook versions (Graves, 1991).

Perhaps one of the most consistent findings in research in regards to making text connections with readers is that of the narrative. Stories have a natural connection with readers. Rosenblatt (1978) developed a reader response theory that described a relationship that the reader has with the text. In this relationship the reader develops meaning from the text based on his or her own experiences and values. The text does not create meaning in the mind of the reader, but rather draws out meaning (Rosenblatt, 1978). In this way we can conceptualize the natural affinity experience has for the narrative. Fischer (1989) wrote about how people see their entire world in terms of a narrative structure:

The presuppositions that undergrid the narrative paradigm are the following: (1) Humans are essentially storytellers. (2) The paradigmatic mode of human decision making and communication is “good reasons”, which vary in form among situations, genre, and media of communication. (3) The production and practice of good reasons are ruled by matters of history, biography, culture, and character... (4) Rationality is determined by the nature of persons as narrative beings... (5) The world as we know it is a set of stories... the means by which

humans realize their nature as reason-valuing animals. The philosophical ground of the narrative paradigm is ontology. The materials of the narrative paradigm are symbols, signs of consubstantiation, and good reasons, the communicative expressions of social reality. (Fischer, 1987, pp. 64-65)

Fischer, in his discussion regarding the narrative paradigm did not isolate this phenomenon to a particular culture, but rather a universal human condition, or type of metacode. Developing this narrative is described as the natural process of socialization, one which transcends time and culture (Fischer, 1987).

Genre as a Motivator

What then moves certain learners towards one type of reading or narrative over another? What life stories determine one's preference for historical fiction, biography, nonfiction, or science fiction among others? Topping, Samuels, and Paul (2008) collected data on 45,670 pupils from first to twelfth grade, with the majority of the data collected from grades one through six. Data regarding reading achievement and preferences were collected from 139 schools in 24 of the United States over the course of one year. The study found that achievement gains for students who preferred nonfiction was considerably lower than for those who read fiction. Without exception, at each grade level, boys read more nonfiction than girls. At all grade levels girls had a higher reading achievement performance and read more fiction than boys (Topping, Samuels, & Paul, 2008). Additional data collected based on the difficulty of these self selected reading titles portrayed a complex and dynamic picture of how these styles of reading break down along gender lines.

Moss and Hendershot (2002) conducted a two-year, ethnographic case study examining the motivation and reading habits of 48 sixth grade students in the Midwestern United States. Over the two-year period researchers examined journal responses, field notes from group

observations, and student interviews. While the number of nonfiction books in the classrooms was greatly outnumbered by fiction titles when the study began, nonfiction titles were added to the classroom library at such a rate as to bring the number to 40% of the total collection. The researchers identified six factors that contributed to students' decision making when selecting nonfiction books. These factors include the need to know more, visuals, knowledge of the author, knowledge of book awards, personal connections, and peer recommendations (Moss & Hendershot, 2002). The need to know factor was reported by 75% of the students. While this was not surprising, it was interesting that the second most reported reason for selecting a book, 48% of the students, was because the visuals increased their interest level. Researchers reported that the increased variety of nonfiction topics and the increased volume of titles helped expose students to areas of learning they had not previously been aware of. In their study of nonfiction reading Topping, Samuels, and Paul (2008) found that in all of the counties surveyed 84% reported using fiction titles for reading instruction as compared to 56% using nonfiction, an underrepresentation often seen in school classrooms. As one student in the Hendershot study noted, "Before you told me about nonfiction I read strictly fiction books. Every time I heard the word nonfiction I thought of reports. Now I know nonfiction can be just as fun as fiction" (Moss & Hendershot, 2002, p.20).

Clear connections can be seen between motivation factors regarding nonfiction, like the need to know more, and the constructs within Wigfield and Guthrie's MRQ such as curiosity. The abundance of fiction titles used in classrooms may alienate readers whose personal narrative does not gravitate toward these stories. Could an increase in exposure to and familiarity with nonfiction titles facilitate stronger connections with the learner's own personal narrative? Perhaps greater consideration should be given to the strong role visuals play in middle school students' selection of nonfiction titles.

Summary

In schools across this country children are reminded every day that reading is a critically important academic skill. Without it, they know that they will have an increasingly difficult time succeeding in all their content area classes. Those that struggle with reading will certainly avoid it, for why would anyone want to be reminded of their shortcomings. It is imperative to understand those things that motivate students in order to break the cycle of this self-fulfilling prophecy that has become institutionalized in our public schools.

Researchers such as Bandura (1977), Guthrie and Wigfield (1997) have each addressed the role that perception and efficacy have to do with children's motivation. Children are not easily fooled and the academic reality that they have created based on social comparisons of their peers is reinforced in any classroom that contains books. A child with strong self-efficacy is a child who raises his or her hand for read-alouds, enjoys book talks, and sees standardized assessments as a chance to shine. This child expects to do well because for years he or she has been succeeding. Motivation exists because that portion of the Wigfield and Eccles (2000) expectancy-value theory has been fulfilled. For those lacking the history of success, how do we strengthen the value they assign to reading?

As Gambrell (2011) found in his study, student engagement with their reading was a key to successful reading achievement. Wigfield and Guthrie (1995) examined constructs of motivation and engagement including curiosity, challenge, and involvement among others and developed The Motivations for Reading Questionnaire (MRQ) which indicated that students have a range of factors that impact their motivation to read.

In the end could the key to motivation lie in the old adage, "Everyone loves a good story"? In Fischer's (1987) discussion of the narrative structure he deconstructs humans as storytellers whose reality is determined by an elaborate set of stories they have experienced and

interpreted. It may be prudent to consider the strong role visuals play in students' motivation while selecting reading titles as illustrated by Moss and Hendershot (2002). The relationship that the reader develops, or does not develop, depends on what he or she draw out from the text. How does that narrative speak to them? Rosenblatt might ask, "How does the reader respond?"

Literacy and Communication

Social Semiotics

The acquisition of language is one of the first and most critical stages of childhood development and learning. However it is a slow, gradual process that yields remarkable results evidenced in the communicative abilities of children ages two to four. Halliday (1993) points out that when children begin to use language and communicate they are not simply using one form of learning; they actually are developing a foundation of all learning. This learning is not confined to the spoken word of language, but extends to written word, gestures, images, sounds and other modes of meaning-making (Bezemer & Kress, 2010).

Semiotics is the study of signs and the process by which signing occurs. This is an area of study closely related to linguistics and was the focus of research for Swiss linguist Ferdinand de Saussure in the mid 19th century.

It is... possible to conceive of a science which studies the role of signs as part of social life. It would form part of social psychology, and hence of general psychology. We shall call it semiology (from the Greek semeîon, 'sign'). It would investigate the nature of signs and the laws governing them. Since it does not yet exist, one cannot say for certain that it will exist. But it has a right to exist, a place ready for it in advance. Linguistics is only one branch of this general science. The laws which semiology will discover will be laws applicable

in linguistics, and linguistics will thus be assigned to a clearly defined place in the field of human knowledge. (Chandler, 2007, p. 2)

While semiotics focuses on the creation and usage of signs in general the more specific field of social semiotics has become the focus of researchers like Halliday and Kress in contemporary education. Introduced into the field of linguistics by Michael Halliday, social semiotics studies how meaning is constructed in a social context. Halliday (1993) discusses the irony that despite the fact that most educational information is dependent on learning that is verbal, there are few theories of learning that are drawn from studying how children's language develops. Halliday proposes that the only reason language exists today in the manner that it does is because of the functions it has evolved to serve in people's lives (Halliday, 1978).

Learning and making meaning from the world around us is a semiotic process, one in which language plays an integral and essential role. When language and meaning is communicated through signs a dynamic and fluid interaction occurs between the producers and users of the communication. The message that the producers create has an intended meaning, often designed for a particular audience. The users of this message recreate the intended message through a social, political, economic, technological, and cultural filter that is as unique as the story of their lives (Bezemer & Kress, 2010). In his book, *Multimodality: Exploring Contemporary Methods of Communication*, Kress (2009) furthers his discussion on how social life is a reshaping force.

Makers of signs, no matter their age, live in a world shaped by the histories of the work of their societies; the results of that work are available to them as the resources of their culture. Inevitably, what has been and what is "around and available," has shaped and does shape the interest and attention of the maker of the sign. (Kress, 2009, p.74)

Multimodal Literacy

In considering how important it is for students to properly comprehend meaning from materials and instruction in the classroom, we must consider its mode of delivery. Previous discussions have addressed the acquisition of knowledge through written text. Relying solely on written text for learning is no longer acceptable. The traditional educational staples of reading and writing, while still critically important to a child's learning, can no longer be thought of as discrete and in isolation of a wide array of other learning modalities. The environment in which students now operate is an interactive paradigm which they need to manipulate actively (Walsh, 2008).

The practice of addressing a wide range of instructional modalities and targeting a child's zone of proximal development has been successful practice for many years. Kress (2010) discusses the importance of multimodality as it encompasses all modes of communication by which we learn. Through the lens of social semiotics we have seen how Kress analyzes the dynamic nature of creating and interpreting messages.

In her study examining student-created projects Walsh (2008) examined nine teachers' classrooms that incorporated the used of multimodal or digital texts in their classrooms to study the effects of multimodal learning, and in doing so established an operational definition of multimodal literacy.

We can define multimodal literacy as the meaning-making that occurs at different levels through the reading, viewing, understanding, responding to, producing, and interacting with multimodal texts and multimodal communication. Multimodal literacy incorporates the traditional literacy strategies of reading and writing with the use of different modalities and semiotic systems. (Walsh, 2008, p.106)

The third grade students in this study participated in literacy activities already defined in the current curricula such as reading, writing, listening, talking, and viewing while researching and collaborating to make an eight-minute video podcast about an animal. Data were gathered through a variety of observations, journals, and digital and print work samples. Analysis of the data revealed connectivity among images, sound, and text. An interdependence and critical relationship was found among the modalities (Walsh, 2008).

With an increase in the breadth and depth of digital information and the assistive technology that accompanies it, literacy in the content area is being delivered and acquired in various ways. Children are learning in new ways that differ from adults that were brought up in a text-only, print-dominated environment (Bearne, 2003). The acquisition of content from sources that are not traditional, text-only material means that the student will process, and structure the meaning of information differently. As Bearne discussed, with a change in the modality of delivery, there may also be a need for a change in the modality of assessment.

The work of Reed (2008) examined the dilemma of multimodal assessment in various English classrooms. Students were instructed to create various two and three-dimensional projects such as film storyboards and models that extended their study of a novel. Qualitative data revealed the inherent weakness in the multimodal approach: ambiguity regarding the assessment. While many students agreed that a formal grade on their project would validate the hard work that they put forth, other subjects stated that there was no way to appreciate their message using standard rubric indicators (Reed, 2008).

Wyatt-Smith and Kimber (2009) explored multimodal assessment and its place in today's educational world in Queensland, Australia. Citing the New London Group (2000), they discussed the enormous complexity of multimodal creations. Multiliterate designs that incorporate images, written words, gestures, spoken words, and movement lead to literacy that

may need to be continually redefined and reconstructed alongside new technologies acting as conduits for communication. Wyatt-Smith and Kimber go on to define “working multimodality” and describe what it looks like in action. Driving their exploration into multimodality was the question of assessment. They concluded that it is critical to identify and define those unique elements of multimodal learning in order to construct legitimate multimodal assessments (Wyatt-Smith & Kimber, 2009).

Another critical aspect of multimodal learning is that of awareness and instruction. New technologies have afforded students and teachers opportunities to deliver and acquire information in unique ways. As Mills discussed in her research of emerging opportunities for multimodal expression, educators run the risk of assuming that all students have proficiency with new technologies. Interviews with administrators and classroom teachers reflected the overgeneralization of the term “digital natives” to describe all adolescents today (Mills, 2010). Assuming that all youth have a set of innate, digital skills can be dangerous and highlights the need to operationalize the emerging skills used in multimodal learning.

In her studies on multimodal literacy for art and design students at the Ontario College of Art and Design, Halliday discussed the importance of partiality as it relates to modes of literacy. Because of the discrete meaning that these modes hold for interpreting the complex world around us, it is critical to address these modes during instruction and while representing acquired knowledge (2009). Halliday finds her art students readily able to make these distinctions between the modes. More importantly she finds that students develop priceless skills by learning how to use visuals to create an appropriate mood or voice, grab the audience’s attention, or develop a message (Halliday, 2009).

Visual literacy. Since prehistoric times when humans first began to interact and communicate visual learning has played an essential role in the expression and reception of

thought. Prior to developing a language system, early humans were able to communicate through visual cues, evidenced in large, mammal skeletons with shattered bones driven off cliffs by what could only have been collaborative groups of prehistoric hunters (Ruhlen, 1994). Visual learning and expression developed permanence during the Paleolithic period as seen in the cave paintings found throughout Spain and France dating back over 30,000 years. As language evolved over time, oral tradition was replaced by a pictorial and then symbolic written language system in many areas of the developing world, however drawings and images remained a complimentary and, often times, necessary feature.

The term visual literacy was first found in the writings of John Debes (1969). As a prominent figure in this field Debes fashioned a definition that focused on the skills that a visually literate person possesses. These skills included the ability to interpret visual objects, symbols, and actions (Brill, Kim, & Branch, 2007). While writing about the ramifications visual literacy has for film media Robinson (1984) explained the term well.

Basically, visual literacy is the ability to process the elements of and to interpret visual messages, the ability to understand and appreciate the content and purpose of any image, as well as its structural and aesthetic composition. A visually literate person can perceive, understand, and interpret visual messages, and can actively analyze and evaluate the visual communications they observe. Visual literacy involves the interpretation of images, movement, design, color, and pattern in media messages of many kinds, from company symbols and street signs to television commercials and MTV. (Robinson, 1984, pp. 267-268)

Over the years this term has been the center of debate and disagreement. Brill, Kim, and Branch (2007) attempted to find a first generation definition of visual literacy. They conducted a study using the Delphi technique of qualitative research in an attempt to find consensus on this

issue. A group of 15 experts in the field of visual literacy were selected from an initial pool of 229. While consensus was never fully achieved in relation to all areas of the definition, one version stood out as the most widely accepted explanation of visual literacy.

A group of acquired competencies for interpreting and composing visible messages. A visually literate person is able to: (a) discriminate and make sense of visible objects as part of a visual acuity, (b) create static and dynamic visible objects effectively in a defined space, (c) comprehend and appreciate the visual testaments of others, and (d) conjure objects in the mind's eye. (Brill, Kim, & Branch, 2007, p.9)

As debates regarding the definition of visual literacy took place, Gunther Kress (1999), a leading authority in visual literacy, took up the fight against what he refers to as insider literacy. Kress describes how Western academia values written communication over all other forms. A type of social power was created privileging only those who could read and write this standardized form of communication (Kress, 1999). In this way the academic prejudice against texts that included more images than words was born, a topic that will be discussed in the following section on graphic literature.

Kress (2009) explored the complexity and usefulness of images in a study he conducted using a science textbook from 1988 and a science textbook from 1936. Two-thirds of the pages of the 1936 textbook contained written language. The other third contained illustrations that had already been described fully in the written areas. Conversely, the 1988 science textbook had images and illustrations covering two-thirds of the book with one-third written. Results of his study indicated that the dual-modality textbook from 1988 was not a simplified version of the material found in the 1936 version. Kress described how the writing and images in the 1988

textbook carried with them a functional, cognitive skill set. There was a different type of complexity to the task as compared to reading primarily words (Kress, 2009).

Today in American society the visual mode of learning has taken on an increasingly important role within the context of multimodality and the new digital landscape. In her study involving visual literacy McDougall (2007) discusses three aspects of visual literacy and the importance that each element is assigned. The visual message can be examined in terms of its structural development. The structural level of images involves identifying a visual elements' purpose with the form it has taken. Secondly, examining a visual in terms of the social and cultural context in which it was written and for which it was written validates the idea that literacy is more than simply decoding and encoding (Kress & van Leuwen, 1996). Finally, the third essential element in the analysis of visual literacy is the cognitive state of mind. This area of visual literacy addresses the relationship of the learner's cognitive processes and the images (McDougall, 2007). In an effort to understand the emerging views of new literacy paradigms McDougall conducted a qualitative study using 26 semistructured interviews with 26 elementary school teachers from 11 varying schools in Queensland, Australia. Discourse analysis of the interviews indicated that most of the interviewees were unfamiliar with the elements of visual literacy, although most agreed that children in their classrooms seemed to be highly visual (McDougall, 2007).

Matoush (2007) examined the idea that children entering public school bring with them an immense collection of discourses that can be strikingly different than their peers'. When isolated at their homes and within their immediate communities these children are often surrounded by explanation and interpretation for all they see in the world. All of the images and scenes that lead to questions are answered through the lens of the familiar caregiver or through the lens of the child's own immature socio-cultural lens. Classrooms for these children have

tremendous potential for the exploration of meaning through various forms of literacy, including visual literacy. In order for this potential to be realized children need to be taught the elements of critical literacy skills. This instruction fosters an environment where children recognize the different meanings that go into authoring pictures, and that those meanings can be questioned, accepted, or disputed by the learner. Observations of first and second grade book discussions led Matoush (2007) to conclude that with thoughtful instruction focused on visual literacy children are capable of negotiating multiple meanings contained within illustrations in picture books. Given the level of observed student capabilities related to these visual literacy skills Matoush questioned the approach of our public schools.

Could we be actively teaching our young children to ignore their own budding interpretive or critical thoughts in favor of blindly accepting historically prescribed, culturally dominant ways of thinking and doing by introducing school as a place where the role of the child is limited exclusively to receiving information without question rather than as a place where multiple perspectives are honored and negotiated? (Matoush, 2007, p.21)

While early instruction of visual literacy can facilitate deeper reflection within the visual field, it is often difficult for certain individuals to cognitively process images with the same fluidity and ease as others. In their study of field-dependent and field-independent learners Angeli and Valanides (2004) examined 65 undergraduates to see if responses to problem solving differed when presented with text-only and text-and-visual instructional materials. Field dependence-independence represents variations in the level of perception and comprehension of an image based on the effects of the surrounding visual field. This perception and comprehension is further altered by the complexity of tasks at hand. Field dependent learners have more difficulty with visual perceptiveness with a field than do field independent learners.

The 65 students in the study were administered the Hidden Figures Test (HFT) to determine assignment as field dependent, field-mixed, or field independent. After a series of computer-based, problem solving activities researchers found that when text was combined with visuals, field independent learners scored 1.8 standard deviations higher than field independent learners with text-only materials and 1.38 standard deviations higher than the field dependent learners with text-visual materials (Angeli & Valanides, 2004).

Table 2

Results for Problem Solving Activities for Field Dependence

	Field Dependent	Field Mixed	Field Independent	Total
	M [SD]	M [SD]	M [SD]	M [SD]
Text Only	1.45 [.69]	1.45 [.52]	1.55 [.52]	1.48 [.57]
Text and Visual	1.55 [.69]	1.45 [.52]	2.50 [.71]	1.81 [.78]
Total	1.50 [.67]	1.45 [.51]	2.00 [.77]	1.65 [.69]

The importance and complexity of visual learning has expanded in recent years with the explosion of the digital age. Children and adults alike have been exposed to a vast array of audio and visual medium that require new multi-literacy skills to navigate, comprehend, and critique. Whether it is fortuitous or the natural order of things, in recent years there has been a rise in the popularity and academic scrutiny of the graphic novel. To be discussed in greater historical and literary detail in the following section of this chapter, the graphic novel's combination of sequential visuals and text represents interactivity with the learner that is also found throughout digital media and represents a need to develop visual literacy skills. Goldsmith (2002) attempted to explain the complexity of students properly and thoroughly reading a graphic novel.

The reader is called upon to understand what is happening in and between the sequences of images (the panels of the graphic novel)...decoding facial and body expressions, the symbolic meanings of certain images and postures, metaphors and similes, and other social and literary nuances teenagers are mastering as they move from childhood to maturity... Like any other esthetic insightfulness, the ability to “read” images that portray character, mood, and tone must be developed through experience. (Goldsmith, 2002, p.2)

The codependent nature of images and the text found in graphic novels is both dynamic and essential for the reader’s experience. Two previously isolated messages often synthesize into one with its own meaning. The picture does not simply accompany the text, nor does the text simply add additional information to the image. The combination of the two creates new meaning for the reader (Werner, 2004).

Intertextuality

Reading a multimodal text requires the reader to understand how both images and text work together to create meaning, but it also requires a reader to apply that meaning to a larger context of culture and the text that exist within it. The application of critical thinking and critical analysis during this process is essential. This complicated process is what George and Shoos (1999) referred to as intertextuality. During the intertextual process readers were required to interpret multimodal texts culturally. In fact George and Shoos referred to the visuals one reads as “cultural artifacts”, each one reflecting both the readers individual experience and knowledge and the larger cultural construct (George & Shoos, 1999).

Summary

Multimodal instruction is not a new concept. From the first time an instructor coupled lecture with demonstration, or written text with a complimentary picture multimodal learning

occurred. What has emerged in recent years is interest in how these various modes of expression relate to each other. Effective teachers have understood that delivering instruction with varying modes of instruction facilitated learning to a broader range of students with varying learning styles.

The digital age has provided a landscape of expeditious and extensive learning that invites multimodal platforms. It is, however, insufficient to simply recognize the discrete qualities of these modes and the learning they evoke (Unsworth, 2006). It is necessary to identify the new and unique learning that exists at the intersections of these modes and define the elements of this metalanguage. This cannot be achieved without understanding the role of text, sound, gesture, and images within the social and cultural content in which they exist (Kress, 2009).

Using images and signs to communicate has existed for thousands of years, but only recently in the past 25 years or so have researchers begun to define what it means to be visually literate. Brill, Kim, and Branch (2007) took aim at finding a consensus agreement for a definition of visual literacy and did so by including those skills a visually literate person would possess. The impressive list of cognitive skills required to be visually literate under this definition gives pause to those who may dismiss images as a simplified form of communication. It is this academic prejudice that Kress (2009) was able to unravel in his study involving a comparison of science textbooks with varying levels of visual support.

When images are combined with accompanying text to learners who represent a broad range of cultural and socioeconomic background an incredibly complex synergy exists. Indeed there are challenges some learners face regarding visual acuity such as field dependency, but perhaps the greatest challenge is one which educators have created. As Matoush (2007) discussed we need to make sure that our schools are fostering varied interpretation of visual

learning tools rather than rushing to indoctrinate them with prescribed curriculum. This can only happen if time is taken to instruct students about visual literacy and provide time for them to explore the intertextuality that exists within their classrooms.

Working Memory

In recent years studies have focused on how learners' working memory affects their ability to comprehend text and, consequently, engage in practices like the ones mentioned previously. In his book entitled *Working Memory*, Baddeley (1986) discussed how the ability to make mental representations with text is crucially important for reading comprehension. This skill is an exhaustive process mentally and puts heavy demands on the learner. As a predictor of reading comprehension, various studies have demonstrated that scores on working memory measurements have been a good predictor of reading comprehension. Research studies conducted by Cain, Oakhill, and Bryant (2004) found that working memory in eight, nine, and ten year-olds was a direct contributor to those children's reading comprehension. Earlier studies using correlational and regression analysis by Leather and Henry (1994) found that working memory accounted for significant variance in the reading comprehension of seven and eight year-olds.

The origins of the term working memory can be traced to the writings of Miller, Galanter, and Pibram (1960) and their studies on behavior patterns. As the study of memory continued in the 1960s and 1970s cognitive psychologist began to apply working memory theories towards cognitive systems that are responsible for the temporary storage and transfer of new information. While some researchers considered working memory to be a single, short-term store for ideas (Atkinson & Shiffrin, 1968) other researchers created a model for working memory comprised of multiple subsystems.

Baddeley and Hitch Model of Working Memory

In 1974 Baddeley and Hitch attempted to challenge the notion that working memory consisted of a single cognitive store by proposing their three-component system of working memory (Baddeley & Hitch, 1974). The Baddeley and Hitch model of working memory has undergone many modifications, challenges, and examinations throughout the years. What began as a straightforward three-part system including a visuospatial sketchpad, phonological loop, and an intermediary central executive control area has evolved to include a fourth episodic buffer system and relationship with the crystallized, long-term memory system (Allen, Baddeley & Hitch, 2006). Components of this model can be seen in the figure below.

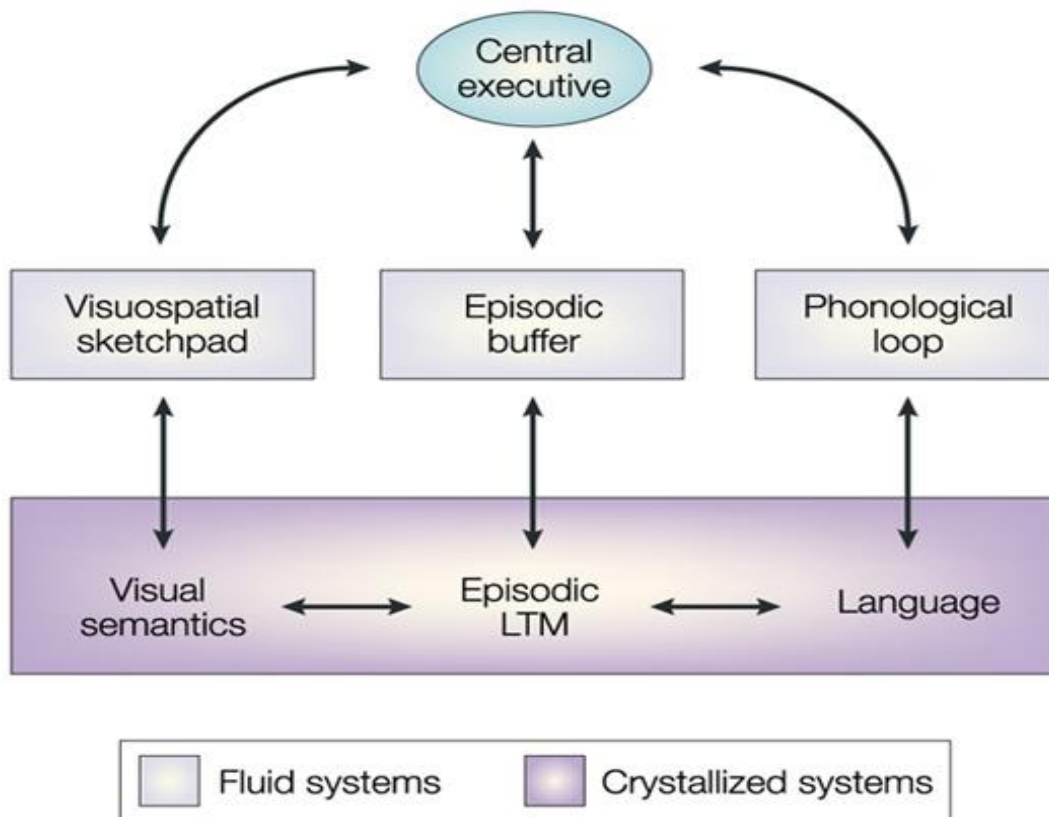


Figure 1. Schematic of Baddeley's model of working memory. Adapted from "Working memory: Looking back and looking forward," by A.D. Baddeley, 2003, *Nature Reviews Neuroscience*, p.830.

Phonological loop. The phonological loop is the first of what many researchers refer to as a slave system of the working memory model. This system handles the verbal and phonological information that a person processes. Within this system is a phonological storage area where this information is kept, but only for a very short time, perhaps several seconds at which point the information begins to decay (Baddeley, 2001).

Interestingly it is not only the reception of auditory stimuli that is processed in the phonological loop, but also visual. As visual representations are received they are articulated and rehearsed. As such, if a child saw a picture of a car crashing on a page of reading that image would be internally subvocalized and repeated.

The phonological loop was assumed to comprise two components, a phonological store and an articulatory rehearsal system. Traces within the store were assumed to decay over a period of about two seconds unless refreshed by rehearsal, a process akin to subvocalization and one that is dependent on the second component, the articulatory system (Baddeley, 2001, p. 86).

The phonological loop system of the Baddeley and Hitch model has faced challenges throughout the years. Researchers have questioned whether short-term forgetting was a result of the decay mentioned above, or was it because of the interference of additional stimuli processing (Brown & Hulme, 1995). Other examinations of this model have led to questions concerning the phonological loop's role in long-term memory (LTM). Some have proposed that the phonological store might actually be separate from LTM and provides no activation of areas within LTM (Cowan, 2005). Baddeley (2001) disagreed noting that neuropsychological studies involving patients indicated a mapping of information from working memory on to LTM.

Visuospatial sketchpad. The second slave system of the Baddeley and Hitch model is the visuospatial sketchpad. The sketchpad is the area of one's working memory where colors,

shapes, and movement of objects are temporarily stored. This area can be divided into two components. The first component is the visual cache which processes and retains information about shapes, images, and color. The inner scribe is second component and the area that handles kinesthetics and tracking movement (Salway & Logie, 1995). Logie also attributed the task of visuospatial rehearsal to the inner scribe, whereas Baddeley (2001) indicated that the central executive area of the working memory may be responsible for this function of memory.

Central executive. In the earliest models of Baddeley and Hitch's working memory framework the central executive was a control system that made decisions regarding the information processed by the phonological and visuospatial slave systems. Baddeley described the central executive in this model of working memory as a sort of unexplored frontier of brain activity, a place where questions regarding the functioning of the other two slave systems could be thrown for later exploration (Baddeley, 2001). Over the past several decades however, the role of the central executive has become more defined. The work of Shallice and Burgess (1991) and their study of the supervisory attentional subsystem (SAS) added to the development of the central executive's profile. Studies conducted using patients with frontal lobe damage and Alzheimer's disease indicated that the central executive was responsible for attention on three different levels: (a) the ability to focus attention, (b) dividing attention to tasks simultaneously, and (c) switching attention (Baddeley, 2001).

Episodic buffer. The early model of working memory by Baddeley and Hitch served as an important building block in understanding the processing of new information. What the model did not do, however, was explain how the central executive transmitted information from the two slave systems (phonological loop and visuospatial sketchpad) to long term memory (LTM). Studies conducted testing subjects for word and story retrieval indicated the necessary use of LTM in tasks such as chunking of prose (Vallar & Baddeley, 1984). The central

executive system, being seen as exclusively an attention control center, did not account for the chunking of words into phrases, phrases into generalized concepts, and so on. The episodic buffer, an interface between the crystallized LTM and the fluid slave systems did this. The episodic buffer, closely linked to the central executive system, was also responsible for the binding together of information from the phonological and visuospatial subsystems (Chincotta, Underwood, Abd Ghani, Papadopoulou & Wersinski, 1999). This conscious process of binding, chunking, and storage, as well as facilitating retrieval from LTM made the episodic buffer a most necessary component of the newer Baddeley model of working memory.

Binding

The process of binding plays a critical role in the understanding how working memory operates. Binding is the process whereby chunks of processed information are bound together in a meaningful way so that the retrieval of one component can evoke the meaning of the others bound to it and the possible new meaning attributed to the collection (Allen, Baddeley, & Hitch, 2006). The type of binding that occurs can vary dependent upon whether the acquired information came from one or more of the slave systems included in working memory and long-term memory. Object-feature binding occurs when the attributes of an object are combined in our working memory to identify that object. An example of this could be conceptualizing a red, brick house. Location-binding occurs when an object is associated with the spatial location that it exists within (Wheeler & Treisman, 2002). While most researchers agree that binding is an essential process in working memory, there is dispute as to whether this process places demands on the central executive attentional control.

In an investigation as to whether verbal-spatial binding requires attentional resources Elsley and Parmentier (2009) presented 46 undergraduate students with an array of stimuli that needed to be recalled. The subjects in this study were presented with the visual of four upper-

case, consonant letters on a computer in distinctly different locations on the screen. Then a single lower-case, consonant letter appeared in one spot on the screen. Subjects were asked to decide whether this lower-case letter represented an upper-case and location previously shown. In an effort to assess the need for attentional resources the subjects were required to remember the order of three distinctly different tones played before each visual task (Elsley & Parmentier, 2009). Results of the study suggested a reduction in the ability to bind information with the additional memory load of sound tones. Drawing on earlier research that indicated no disruption of object-feature binding Elsley and Parmentier (2009) concluded that there may be distinctions in attentional needs when binding occurs exclusively within one of the slave systems as opposed to across both. When object-feature binding occurs it utilized the visuospatial sketchpad alone and the additional memory load variable did not have an effect on binding. The experiment described above, however, utilized verbal-spatial binding and involved the visuospatial sketchpad, phonological loop, and, consequently, the episodic buffer (Elsley & Parmentier, 2009).

Allen et al. (2006) conducted similar studies with cross-modal binding. They held that the episodic buffer and executive control were closely related and that both had a limited reserve of attentional capacity. Given this, expectations were that an attentionally demanding task would limit the success of cross-modality binding. When results did not indicate this to be true they concluded that attention may take both an ambient form, and a focused form (Allan, Hitch, & Baddeley, 2009).

Ambient attention allows us to continue to be aware of our surroundings, without explicitly focusing on them, whereas focused attention allows us to emphasize one aspect over others if necessary. Binding features within ambient attention (do) not appear to depend on explicit attentional focus, hence objects do not break

up into separate features when we switch our attention from a scene to our internal thoughts. The distribution of focused attention almost certainly changes, through a shift in the balance between externally and internally focused attention. (Allan, Hitch, & Baddeley, 2009, p. 99)

Summary

The concept of working memory is critical in understanding how people effectively process information from the world around them, and in appreciating why they may not be able to do so in a particular manner. The Baddeley and Hitch model of working memory that was first proposed in 1974 created a structure for defining the complicated processes that occurred when people read, heard, observed, encountered, and organized stimuli in their environment. This structure provided an explanation about cognitive processing, and a foundation for research to be conducted against. The model has withstood the test of time, but not without modification and evolution. The visuospatial sketchpad and phonological loop, both part of the original Baddeley and Hitch (1974) model, act as foundational gateways of receptive learning. In the year 2000 the addition of the episodic buffer accounted for the necessary functions of chunking, binding, and communicating with long-term memory. This designation also allowed for the more defined role of executive control to be that of attention, amongst others (Baddeley, 2001).

Set against the educational landscape previously describe in terms of reading comprehension and multimodal instruction one can begin to see how important the role of working memory is in the classroom. The cognitive processing of a learner is visual and phonological. It is fluid and crystallized. It is complicated, but becomes more defined as research continues. Much in the same way that struggling readers incorporate digital audio to facilitate deficiencies around the phonological process of working memory, perhaps reading material rich in visuals can do the same for a learner's visuospatial sketchpad. This research,

considered alongside research in the field of visual literacy, multimodal and differentiated instruction, allows for the prescription and application of diverse teaching strategies and materials including graphic novels.

Graphic Novels

Historical Context

In 1978 Will Eisner published *A Contract with God and Other Tenement Stories*. This work combined intricate and elaborate visual images and text into a full length narrative that he self-described as a graphic novel (Serchey, 2008). This book appealed to a wide audience because of its visual nature, one in which comic-style, sequential pictures were presented alongside text and speech bubbles. While this was not the first graphic novel to be published, it was the first significant literary work to be given this name. What had earlier been seen only as comic book stories, the graphic novel represented an expansion, evolution and maturation of visual storytelling (Versaci, 2007). What the graphic novel name did not necessarily bring with it was an immediate legitimacy and respect as a literary form. The graphical novel began to weave its way into popular culture evidenced by cinematic productions and increasing sales of graphic novel titles. With both struggling and fluid readers gravitating towards this highly visual genre researchers have begun to examine how the multimodal text can access skills of learners and facilitate deeper learning.

Definition of a graphic novel. Graphic novels are not clearly defined by the publishing industry or by the authors themselves. If you stop the average person on the street and show them a copy of a popular graphic novel many will undoubtedly use the word *comic* to describe it. Given the history of comic drawings and their positioning centuries before the first full-length comic narrative, it is an appropriate classification. Eisner defined comics as sequential art and discussed how pictures, words, and images are arranged specifically to relate a story (Eisner,

2008). One of today's foremost authorities on the design, construction, and meaning of comic art, Scott McCloud, presented a definition of the graphic novel in his book *Understanding Comics: The Invisible Art* as, "Juxtaposed pictorial and other images in deliberate sequence, intending to convey information and/or to produce an aesthetic response to the viewer" (McCloud, 1993, p. 20). While graphic novels consist of a wide variety of styles and genres they share the essence of visual storytelling. Graphic novelist Neil Gaiman recounts a story when he realized that a graphic novel, by any other name does not sound as sweet. In an interview Gaiman gave to *The Los Angeles Times* he discussed how a reporter from the *London Daily Telegraph* expressed interest in his profession.

The gentleman came up to me, introduced himself, and asked what I did. I replied I wrote comics, I wrote *Sandman*. He replied, 'My dear boy, you don't write comics, you write graphic novels!' And I honestly felt like a hooker who's just been told she's a lady of the evening. (Gaiman, 1995)

Stigma of graphic novels. In his book entitled *Everything Bad is Good for You*, Johnson (2005) discusses the premise that many of the popular culture pastimes like viewing television, online gaming, and online social networking rob our youth, and adults, from worthwhile, meaningful learning activities like studying encyclopedias. In this work Johnson discussed the concepts of John Dewey and collateral learning, citing that some of the most powerful learning for youths comes from non-direct instruction within their environment (Johnson, 2005). Skills needed to participate in the activities listed above include things like following multiple plot lines, using emotional intelligence to interpret relationships, pattern recognition, interactive discussion and debate, and other skills that educators have cited that are necessary for adult, life-long learning.

Reading in general has larger implications than the simple act itself. Reading is a very personal and exploratory process, not only about learning new information, but also learning about oneself. This is an intimate act. Friere (1987) points out that reading actually acts as a cultural barometer. He explains that within a culture there are dominant and subordinate languages that develop. These languages are part of a dominant and subordinate culture that begins to dictate what literature is beautiful and which is bourgeois or adolescent (Freire, 1987). For further evidence of the sociological ramifications surrounding graphic novels one needs only to consider the name itself. As mentioned above, graphic novels are really just a long sequence of comics. The more legitimate interpretation of the graphic novel allows elitists in the publishing industry to, as McCloud explains, "...separate the serious material from the serial material." (1993, p. 29). After all, don't all parents look forward to that magical developmental stage when their children graduate from picture books to text only books? As Marsh and Millard (2000) discussed, it is assumed that those who cannot read text-only narratives well require pictures to guide them through the book. Dominant culture voices believe that reading something akin to a graphic novel is a form of cognitive prosthesis. Rosenblatt (1994) addressed the idea of this elitist perception regarding literature.

...the social and intellectual atmosphere...sets up "good literature" as almost by definition works accessible to the elitist critic or literary historian, and that leads the average reader to assume that he simply is not capable of participating in them. Our whole literary culture tends to produce this defeatist attitude.

(Rosenblatt, 1994, p.142)

Does this stigma really boil down to such a Puritan ideal? If something is pleasurable, it must be bad for you. What do we then make of those who love to read long, epic novels and challenging text-only titles? Are all graphic novels and picture books simply watered-down content that

amount to nothing more than the equivalent of a literary junk-food diet? Evidence for the graphic novels legitimate place in dominant culture can be measured not only by the success of the titles in popular culture, but also in yielded effects in the classroom.

Success of graphic novels. Eisner (2008) noted that the years from 1967 to 1990 were a watershed period for the graphic novel. During these years comic book stores grew rapidly in number and exposure of the comic artists and writers to the public widened. Comics also began to mature and reflect topics that had previously been the focus of movies, live performances, and academic texts. Critics began to see what comic artists and writers intuitively knew all along, that comics were much more than visual candy. As McCloud (1993) noted comics are limitless in terms of the ideas, topics, and images they can communicate.

In every sense, this misnamed form of reading is entitled to be regarded as literature because the images are employed as language. There is a recognizable relationship to the iconography and pictographs of logographic writing systems like Chinese *hanzi* or Japanese *kanji*. When this language is employed as a conveyance of ideas and information, it separates itself from mindless visual entertainment. This makes comics a storytelling medium. (Eisner, 2008, p.1)

In the 1980s, several graphic novel stories were published that received great critical acclaim and public interest. *Watchmen*, by Alan Moore (1987), was one such novel that used the comic-style superhero but demonstrated sophistication as well as great sales potential (Wolk, 2007). *Watchmen*, published at a time in history when the United States was in a nuclear weapons race against the Soviet Union, uses a collection of superheroes to address the themes of utopias, good versus evil, heroic stereotypes, and world destruction (Van Ness, 2010). The popularity of *Watchmen* could not have been imagined. In 2005, *Time* magazine listed *Watchmen* as one of the top 100 English-language novels since 1923, the only graphic novel on

the list. With renewed attention given to the book in the summer of 2008, DC Comics had to print an additional one million copies to keep up with the sales demands at the time (Van Ness, 2010).

One year prior to the release of *Watchmen* another graphic novel was released, one whose story would overtake Hollywood in 2008. While comic book series titles had already achieved great success throughout the 1980s with movie adaptations such as *Superman*, *Batman*, and *Dick Tracy*, graphic novel adaptations became increasingly popular as a source of film inspiration. In 1986, Frank Miller's *The Dark Knight Returns* approached the superhero story in a dark, ominous fashion geared for adults. Years later in 2008 Hollywood would release the film version of *The Dark Knight* which achieved unimaginable success. According to the box office reporting website www.the-numbers.com (2012) the movie *The Dark Knight* has grossed over 1.1 billion dollars worldwide. Miller released his comic book series *300* in hardcover in 1999, recounting the ancient Greek battle against the Persian army. This story was transformed into a 2007 movie which grossed over 456 million dollars. With numbers less staggering, yet still impressive, graphic novel film adaptations of *Road to Perdition*, *Sin City*, and *Watchmen* all grossed over 150 million dollars worldwide (www.the-numbers.com, 2012).

In 1986, Spiegelman published the graphic novel *Maus: A Survivor's Tale*, which recounted his parents' experiences during the Holocaust. This intense narrative, told through mouse and cat characters, demonstrated that the graphic novel was not only a serious form of literature, but had potential for use in education. *Maus* won the Pulitzer Prize in 1992 and ushered in a new era for comic artists and writers (Weiner, 2003). As the poignancy and timelessness of the story became evident, and popularity soared *Time* magazine proclaimed that *Maus* was the seventh best nonfiction book published between 1923 and 2005 and fourth on their list of best graphic novels (Grossman, 2009). While some criticized Spiegelman for approaching

such a sensitive topic in comic form, the graphic novel was adopted by educators and historians for analysis and as a teaching tool for historical and social topics.

Graphic Novels Impact in the Classroom

The concept and construct of comics and cartoons has deep historical roots. In the United States the idea that comics could be used as an instructional tool began early. In the 1940s a manual was created for teachers instructing them on how to use comics as an effective teaching tool for their curriculum. From an original study group size of over 2,000 teachers from 27 states, 438 teachers completed questionnaires about their use of comics in the classroom. The questionnaires indicated that comics had been used to supplement content area materials in middle and high school levels more than primary. Many teachers reported that the comics had improved student motivation and interest in content. Increased reading was noted among many students. Not surprisingly some teachers indicated that the comics lacked the rigor and seriousness needed for education (Foster, 1940).

Recent studies have been conducted attempting to assess the effectiveness of graphic novels in the classroom. One study was conducted with high school students in grades nine to twelve who were reading below grade level (Lamanno, 2007). In this study Lamanno attempted to determine if the use of graphic novels along with effective reading strategies could improve students' motivation for reading or their reading comprehension. Twenty students with mild to severe reading difficulties were chosen from two public high schools in the northeastern United States. Scores from subtests of the Wechsler Individual Achievement Test–Second Edition, AIMSWeb maze passages, student questionnaires, examiner checklists, and behavioral record forms were analyzed in this study. The study yielded positive student attitudes toward reading the graphic novels and an increase in motivational behavior as found through self-reports in exit interviews. While the majority of the subjects showed no significant improvement in reading

comprehension, comprehension scores for the four students who already had the highest reading achievement scores in the study group did increase (Lamanno, 2007).

A qualitative study conducted in Malta examined 14 and 15 years old who were given instruction about Maltese history. Students were divided into three groups of 30 students each. The first group was given a text only version of the information. The second treatment was text with black and white drawings and black and white photos. In the third treatment the Maltese history information was presented in comic form with 36 black and white panel illustrations. Results from the study indicated no significant improvement in reading comprehension scores, but a questionnaire showed that students in the third treatment had greater recall of the historical facts and greater motivation to learn about the content (Mallia, 2007).

Another study by Hammond (2009) used the graphic novel *American Born Chinese* with 12 th-grade students in a political science class. This qualitative study examined interview transcripts, observations, and student work samples. Results yielded positive findings regarding student attitudes towards graphic novels, but highlighted the need for re-educating both the 23 students and their teachers in skills required to effectively use multimodal literature. Hammond (2009) found that the reading of a graphic novel was a new experience for many of the students in her study. After instructing students on how to read comics that students enjoyed the book and were able to effectively analyze the novel's social and cultural themes (Hammond, 2009).

Construct and Design of Graphic Novels

As Hammond (2009) indicated in her study involving the graphic novel *American Born Chinese* teaching students the elements, design, and conventions of reading comics and graphic novels is essential. Through the consisted and repeated use of images and symbols to create similar ideas a language forms, a language unique to the comic format (Eisner, 1985). When we speak of language we typically recognize both vocabulary and grammar as being essential

elements. For comics and graphic novels the vocabulary would be the images and the text, whereas the grammar would be rules pertaining to how the images and text interact to produce meaning (McCloud, 1993).

The first and most fundamental design element of comics and graphic novels is visual iconography. All of the images used to represent people, places, and ideas within the story are its vocabulary. These icons exist in both a pictorial and non-pictorial form (McCloud, 1993).

Pictorial icons are drawings that are intended to resemble their subjects. Through the use of abstraction or realism the artist can vary the degree to which these icons force the reader to use interpretation. In this way pictorial icons can either be realistic or abstract. More abstract representations would then lead the reader to become more actively involved in the story.

“The cartoon is a vacuum into which our identity and awareness are pulled...an empty shell that we inhabit which enables us to travel in another realm. We don’t just observe the cartoon, we become the cartoon” (McCloud, 1993, p.36). The most abstract form of icon would then be the non-pictorial form, that which includes words. These completely abstract icons require varying degrees of decoding and understanding. In the same way that pictorial icons can be more direct or realistic than abstract, so too can non-pictorial. With the use of more direct and specific words, messages can be processed faster than abstract, metaphoric wording (McCloud, 1993).

The next elements of graphic novel and comic design are what Eisner (2008) refers to as the grammar of the visual narrative. These are the elements of timeframe and closure. The author of a graphic novel organizes the layout of the page so that the icons within the panels, and the voids between them known as gutters, create a sequence and flow to the narrative. A sense of time and place is created for the reader, and in turn the author or artist can manipulate the position, size, and shape of panels in order to stretch or compress time, and flash back or jump ahead. Conversely an artist may choose to maintain a constant and uniform size and shape to

panels in order to create a flow and rhythm to the story. Periodically this rhythm can be intentionally interrupted for effect much in the same way that the author or artist can redirect a reader's attention from one spot on the page to another using motion lines from panel to panel.

Between the panels, spaces called gutters create the element of closure for the reader. By reading from panel to panel, across these gutters, the reader engages in what McCloud refers to as a partnership between the artist and themselves.

Here in the gutter, human imagination takes two separate images and transforms them into a single idea... Comics panels fracture both time and space, offering a jagged, staccato rhythm of unconnected moments, but closure allows us to connect these moments and mentally construct a continuous, unified reality.

(McCloud, 1993, pp. 66, 67)

Helping connect the grammar of the comic are the transitions of the panels. McCloud (1993) defines six types of transitions including moment to moment, action to action, subject to subject, scene to scene, aspect to aspect, and non-sequitors. These transitions range from very simple to follow (moment to moment), to most abstract (non-sequitors) with the latter including a seemingly misplaced panel without purpose. It would be a gross miscalculation to neglect these panels however, as they force the reader to define its meaning through interpretation.

The final elements of the comic design structure are found within words, images and color. Within the context of the graphic novel words take on a very different purpose than that of simply delivering ideas within sentences. The line between words as text and words as symbolic image is often blurred. The shape, width, and thickness of words can be used to represent sounds. The presentation of words can modulate to represent different characters' voices within a story. The volume of a character's voice can be controlled by the text appearance, and sounds within a scene can be expressed with combinations of letters. In her

article exploring the semiotic nature of typography Norgaard (2009) discussed Van Leeuwen's studies on typographical metaphor and the meaning making involved by the reader with variations on styles of text.

The DaVinci Code is set in Palatino (font), but when Brown's protagonist, Robert Langdon, does a computer search to solve one of the many riddles he is faced with in the novel, Courier is used for the presentation of the text that pops up on the computer screen. The meaning that the passage creates through the choice of typography partly seems to be acquired through contrast. (Norgaard, 2009, p.157)

When words are examined alongside images they can be used to duplicate the message conveyed by the image. Words and images can complete each others' meaning, picking up where one has left off with an idea. In an attempt to intentionally create contrast or discord the words can be used to contradict images next to them, forcing the reader to evaluate. The physical shape of the words can be used within an image to facilitate interpretation of an image or concept.

Given the ability for the comics artist to use varying degrees of abstraction and style in their panels, numerous levels of transitions, a wide range of text sizes, shapes, fonts, and colors, and a myriad of word-image combinations it would seem an impossible task for the artist's or author's message to be conveyed accurately. Because the reader's eye is intended to wander the page, many graphic novelists have described the art of creating a graphic novel more like directing a novel. In the same way that a theater or film director needs to guide their audience so too does the graphic novelist. Eisner (1996) described this process as a partnership or tacit cooperation between the graphic novelist and the reader, whereby the novelist make specific design choices with the goal of directing the reader's attention in a particular manner.

Summary

The story of the graphic novel is the story of an underdog. The graphic novel is a bit like the unlikely hero in the movie who gets no respect but battles through adversity to show his potential. It's the nerdy boy who saves the world from destruction and wins over the hearts of all who failed to see his relevance in the first 90 minutes of the movie. The birth of the graphic novel was an undefined process occurring sporadically among comic authors, visual artists, and novelists. The advent of Will Eisner and his coining of the term did more than provided structure to a nebulous form of storytelling. It allowed this new genre to build credibility and increase exposure to the public through various media.

Champions of the graphic novel emerged from the world of literature, art, and academia. Graphic novelists and researchers like McCloud (1993) and Gaiman (1995) discussed the subtle and overt bias that exists regarding graphic novels. Marsh and Millard (2000) describe an elitist attitude toward text-only books and how those elitists view images as a cognitive prosthesis. Framed in terms of a socio-academic class system this view of valued reading begins to mirror the writings of Kress (1999, 2009) as he describes insider literacy and the exclusionary effects it has for visually oriented learners.

Conclusion

The arrival of the graphic novel into American society was a subtle, dynamic and fluid process over the past twenty years. Its entrance into the literary scene was, and still is, not a smooth one. The graphic novel has upset the order of things in the education world.

The work of people like Noah Webster during 18th and early 19th centuries was critical and groundbreaking for education. The concepts of developmental readiness and scaffolded reading instruction were foundational elements for the emerging public school systems in the United States. As Westerhoff (1978) discussed, this approach to reading instruction and the

emergence of programs like McGuffey's *Readers* during the early 1900s crystallized a set of skills needed for success. Phonemic awareness, enunciation, decoding, and comprehension of written text became essential for successful instruction and assessment of children in Horace Mann's industrial model of education (Hunt, 2010).

Instruments developed to assess reading comprehension developed during the early 20th century such as the Kansas Silent Reading test and the Monroe's Standardized Silent Reading Test (Gates, 1921). These tests and others like them were scrutinized and often criticized by educators like John Dewey for not measuring what they intended to. Farr (1969) questioned the effectiveness of reading tests as many measured the speed of reading comprehension and not the strength of reading comprehension. Farr also championed the concept of using reading tests to identify relative strengths and weaknesses of learners as a means toward differentiated instruction, a trend that Veatch (1967) felt transcended reading and had overreaching implications for other subjects. Honoring the individual strengths of students through this approach has been found to improve reading achievement and increase student motivation.

Researchers like Gambrell, Wigfield, Eccles, and Guthrie have spent a great deal of time and effort trying to understand this idea of student motivation to read. Learners' perception of how they expect to succeed is a strong determinant in how often they will choose to read, thereby improving those skills. As Wigfield and Eccles (2000) outlined in their expectancy-value theory and Wigfield and Guthrie (1995) illustrated, there are additional considerations to reading motivation. Extrinsic motivators such as grades and social acceptance are determinants. Intrinsic motivators such as challenge, involvement with characters, and curiosity are also essential in satisfying what Fischer (1987) describes as the narrative structure built into the individual life stories of all humans.

The combination of written text and images has long been employed as a teaching tool to help visual learners acquire new information and connect with prior knowledge. As Bezemer and Kress (2010) explained, receptive learning is a multimodal world of images, gestures, sounds, and writing. The social semiotics and the meaning individuals assign to their world are culturally determined and require a range of visual literacy skills that Brill, Kim, and Branch (2007) attempted to define. The full range of educational benefits that multimodal instruction can offer cannot be realized until educators are informed and trained in terms of visual literacy.

This review of literature examined the role working memory plays in students' learning. The Baddeley and Hitch model of working memory accounts for the reception of information and stimuli through a visuospatial and phonological component (Baddeley & Hitch, 1974). Essential functions like binding and chunking were later attributed to the episodic buffer and its modulation with long-term memory. In terms of this study the Baddeley and Hitch model of working memory should be considered for its role in students' visual reception of the graphic novel and their cognitive predisposition verbally and nonverbally as indicated from the Otis Lennon School Achievement test.

Nested within the research on reading comprehension and motivation, visual and multimodal literacy, and phonological and visuospatial processing, graphic novels represent a new opportunity for learners. Previously marketed to comic or science fiction audiences, they now engage readers of all genres including nonfictional, educational topics. McCloud (1993), Kress (1999, 2003, 2009) and other researchers who embrace the complexity of the visual medium continue to provide strong evidence as to why the graphic novel is an acceptable, if not necessary, educational commodity.

For well over a century the formula for success in American public schools has been simple: learn to read and write well and the rest will take care of itself. Learners are not simple.

Learners are individuals. They are wonderfully complicated and cognitively diverse people, and if the formula for success is simple some will be left behind.

CHAPTER 3: METHODOLOGY

This study was implemented to examine how verbal and nonverbal learning styles impact students' interpretations, interactions, and attitudes while reading a nonfictional graphic novel in their eighth grade social studies class. Through a combination of classroom observations, semistructure interviews, survey responses, work samples, and a focus group interview the study found emerging patterns that will facilitate a better understanding of how graphic novels can be used effectively for content area instruction.

This chapter begins with a listing of the research questions that framed this study and focused the examination of student behavior, responses, and work samples. The second section of this chapter details the researcher's background, setting of the study, and the subjects involved. The third area of this chapter will describe the various instruments used to select the sample and generate data. The fourth section will discuss the research design and justification of the analyses and will be followed by a deep description of data collection procedure, timeline, coding, and content analysis process. This chapter concludes with an ethics statement.

Research Questions

The research questions for this study are:

1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?
2. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?
3. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

Researcher Background

When considering the idea of conducting research using graphic novels several years ago my thoughts were immediately drawn to personal experiences. As a teacher of fourth and sixth grade students I had become keenly aware over the past 15 years of how important reading is the classroom and what that skill set means for success in most school subjects. Middle school marks a time when teachers expect student to no longer simply learn how to read, but rather read in order to learn. As such this can be a difficult time for students who still struggle with the discrete skills needed to read fluidly. Each and every year of my teaching career I discuss the difficulties that learners can have with reading. As I describe to students my personal issues of decoding, mind wandering, and having to reread passages constantly I would see children nod and exclaim, "I do that all the time." Those same children would sit wide-eyed as I recounted my own struggles with reading and my inability to stay focused on even the most interesting subjects.

Teachers have been using methods to help scaffold reading instruction for many years. The use of pre-recorded audio files (previously CDs and tapes before them), and read-aloud practices have helped struggling readers by providing that bridge to decoding, and modeling fluid and expressive reading. Personally I have experienced tremendous improvements in my own ability to retain large amounts of information and increase my reading longevity by using reading audio software and pre-recorded audio files.

I first encountered graphic novels about 12 or 13 years ago. Manga and anime had found its way into United States teen culture and the Poke'man phenomenon had begun. I think that I, like many adults, dismissed the trend as just another flavor of the month for pre-teens and teens. What occurred instead was a steady rise in awareness and interest of this graphic storytelling genre. As the number of graphic novel titles in school library media centers increased it became

apparent that many of our school's struggling readers were reading these graphic novels. I considered the idea that this was simply an avoidance technique. Fewer words on a page meant less difficulty for a struggling reader and these graphic novels could easily be dismissed as glorified comic books. I then began to take notice of some very gifted readers who were also immersed in the genre, and wondered if there was more to this visual story.

Most educators are keenly aware about the importance of both auditory and visual stimuli in their classrooms. They provide visuals to support complex themes or concepts, and have both modalities coupled to support various learning styles. Some educators, such as me, reach further out and structure delivery of their curriculum based on more advanced and complex theories of learning such as multiple intelligences. What had not occurred to me or many of the colleagues I work with is the depth and complexity that can be found in some, but not all, of these graphic novel titles. A depth and complexity that our minds often visualize as we decode descriptions found in text. I began to wonder, if audio files can bridge a decoding deficiency could detailed images facilitate cognitive visualization?

During my first year of doctoral candidacy I researched the Baddeley and Hitch model of working memory. The phonological loop and visuo-sketchpad elements within the model provided a theoretical basis for an assumption that I had been considering. Review of many graphic novel titles yielded both quality graphic novels and those lacking depth. After corresponding with both the artist and author of a quality nonfiction graphic novel dealing with the United States Constitution I was able to secure a participating school and cooperating teacher.

Due to my close association with the themes of this study and in an effort to marginalize my positioning within the study it was essential that I bracketed out my experiences. While designing the study, establishing criteria and procedures for sampling, and implementing the

study itself it was critical for me to consistently be reflexive and keep track of questions, field notes, running personal notes, and observations that needed clarification. While the subtexts of my own personal experiences were critical in formulating design of the study I made great efforts to distance them from my subjects and the analysis of the data. This distance seeks to respect the voice of the subjects as well as the social, political, and educational implication that the findings of this study could influence.

Description of the Setting and the Subjects

This research was conducted in a suburban town in the northeastern United States with a total town population of 18,062 according to 2010 US Census Bureau reports. The district for this study is located in western Connecticut and had a total student enrollment of 4,151 students in 2010. Demographically, the student population is identified as upper class with a median household income of \$194, 362 (US Census Bureau, 2010). There are three elementary schools, one middle school, and one high school in this district. Research was conducted in the district's middle school which had a total enrollment of 1,068 students in the fall of 2011. The middle school is an academically teamed middle school consisting of grades six, seven, and eight. Each grade level contains three teams of approximately 105 to 110 students. There are six academic teachers on each team representing English, reading, science, social studies, world language, and mathematics classes.

Within this participating school 1.0% of the student population qualified for free/reduced-price meals, and 11.1% of the students were identified as having disabilities. Strategic school profile information also indicated that 56.8% of eighth-grade students were enrolled in high school level mathematics courses, and 83.3% were enrolled in high school level world language classes. In 2010 95.3% of the eight-grade students in this participating school had reached goal level on the Connecticut Mastery Test. In terms of racial and ethnic diversity this middle school

was comprised of 90.2% White, 7.1% Asian American, 1.6% Hispanic, 1.1% Black, and 0.0% American Indian with a total student minority population of 9.8% (Strategic School Profile, 2009-2010).

Sampling Procedure

Based on the assigned team of the cooperating teacher in this study, 109 student OLSAT scores were examined in an effort to identify students representing a high discrepancy between their verbal and nonverbal OLSAT scores. Four students were chosen with relatively high verbal scores as compared with the nonverbal scores. This group consisted of two males and two females. Four students were selected that have high nonverbal scores as compared to verbal scores. Of these 4 students 1 student was unable to participate in the study. Finally, four students were chosen representing verbal and nonverbal scores that indicated average scores with no significant difference between the verbal and nonverbal portions. It should be noted that one male subject in the high nonverbal subgroup was unable to continue with the study due to schedule changes in his program of study.

The participants in this study were a purposeful sample chosen to fit the parameters of this multiple-case study. Subjects consisted of six male and five female eighth-grade students. The students varied in ages between 12 and 14 years of age, and were drawn from a teamed eighth-grade population of 109 students. After an initial review of OLSAT data in September 2010, student information forms to participate in a study and parental consent forms were sent home. A listing of these 11 students and their OLSAT scores using coded names in Table 3.

Table 3

*Study Group List Indicating Subgroups, Discrepancies, Classification, and General OLSAT**Classification*

Student	Total OLSAT	Verbal	Nonverbal	Discrepancy	Case Study Classification	General OLSAT Classification
Rhonda	133	130	133	-3	balanced	very high
Susan	122	122	119	3	balanced	high
Sydney	107	107	109	-2	balanced	average
Brian	101	102	101	1	balanced	average
Sally	104	113	97	16	high verbal	average
Joe	132	137	121	16	high verbal	very high
Russel	143	146	130	16	high verbal	very high
Eileen	104	113	97	16	high verbal	average
Carlos	112	100	118	-18	high nonverbal	average-high
John	101	92	111	-19	high nonverbal	average
Doug	130	120	141	-21	high nonverbal	high

Following purposeful sampling, students were classified as balanced if their verbal and nonverbal OLSAT scores were less than 16 points of each other. Students whose verbal score was 16 points or more above their nonverbal were classified as high verbal, and students whose nonverbal score was 16 points or more above their verbal were classified as high nonverbal.

Instrumentation

Data was collected using a variety of instruments and qualitative methods as the students in this study use the graphic novel *The United States Constitution: A Graphic Adaptation* in their social studies class. These instruments include the Otis Lennon School Ability Test (OLSAT), Perceptions of Reading and Graphic Novels Survey, classroom observations, semistructured student interviews, examination of student work, and focus group interview.

Otis-Lennon School Ability Test

The Otis-Lennon School Ability Test (OLSAT), Eighth Edition, is a group-administered, 72-question, multiple-choice test that is available in seven levels. The test measures verbal, quantitative, and figural reasoning skills that are needed for children's success in school. The level used in this study, level F for grades six through eight, is an independent, timed test which takes approximately 60 minutes to administer. Tasks within the test are broken into verbal and nonverbal categories. Verbal clusters include verbal reasoning, and verbal comprehension, while nonverbal clusters include quantitative reasoning, and figural reasoning. Scores on the OLSAT are reported for verbal, nonverbal and total scores. These are normalized standard scores with a mean of 100 and a standard deviation of 16 (Pearson, n.d.).

In order to thoroughly understand the clusters of the OLSAT, and consequently the profiles of the participants in the study, the following table is provided.

Table ----

Verbal and Nonverbal Subtests of the OLSAT 8th Edition

Verbal	Nonverbal
Verbal Comprehension - Antonyms - Sentence completion - Sentence arrangement	Figural Reasoning - Figural analogies - Pattern matrix - Figural series
Verbal Reasoning - Logical selection - Word/letter matrix - Verbal analogies - Verbal classification - Inference	Quantitative reasoning - Number series - Number inference - Number matrix

As reported by DeStefano the reliability results for total scores yield values in the low .90s and verbal and nonverbal subtest estimates are typically in the low to mid .80s (2001). Score reliability and internal consistency reliability estimates are also reported with internal consistency using the Kuder-Richardson Formula 20 (KR-20) for grade and age, and the KR-21 for content clusters (DeStefano, 2001). Evidence for test content validity obtained through correlation of the OLSAT 8 with OLSAT 7 yielded scores that ranged from .74 (Level G) to .85 (Levels A,F). Internal test validity was established correlating raw scores across test levels and yielded scores varying from .50 to .70 (DeStefano, 2001).

Perceptions of Reading and Graphic Novels Survey

Given the standardized nature of the OLSAT, and in an effort to identify the socially constructed mindset of students as readers of traditional text-based instruction as well as their thoughts related to graphic novels, the team of 109 students was administered the Perceptions of Reading and Graphic Novels Survey (PRGNS). This is a researcher-created survey exploring student attitudes, perceptions, and prior experience with both traditional texts and graphic novels (see Appendix A). This survey consisted of 12 short-answer and multiple-choice style questions which was administered online. Information collected using the PRGNS was analyzed along with data from student work samples, interview responses, and observations in an effort to gather comprehensive information about individuals nested within the learning style case study groupings.

Semistructured Interview Questions

Semistructured interview questions were used in this study as another method of collecting information from the students in the study (see Appendix B). Gall, Gall, and Borg (2007) describe semistructured interview questions including the use of specific, structured questions that allow for follow-up, clarification questions that yield a deeper understanding of the situation being examined. The interview questions helped inform Research Questions One, Two and Three. An example of one of the interview questions is, “How is the reading of this graphic novel different from using other school instructional materials?” When a respondent made reference to a greater number of images per page one follow-up question was, “How did the increased number of visuals change you reading experience?” The subjects were asked the same initial set of interview questions, and given equal measure of flexibility in order to elicit thick descriptions of the experience through follow-up questioning (Creswell, 2007). All interviews used audio, digital recording and were later transcribed in order to be analyzed.

Classroom Observation Checklist and Field Notes

During the course of the study classroom observations took place to help inform Research Questions One and Three. The role of the researcher was primarily observer, and occasionally participant-observer. To initiate the study the researcher took on the role of instructor during the first classroom visit. During this visit the researcher conducted a lesson about the history and construct of graphic novels. This lesson included a tutorial on how to effectively examine graphic novels. Three additional classroom observations followed. A checklist was used (see Appendix C) in order to track both descriptive and reflective information (Creswell, 2007). During the course of the observations the researcher employed the use of classroom seating charts to track locations of subjects within the room and facilitate more accurate data collection.

Focus Group Protocols, Recordings, and Field Notes.

Following the collection and exhaustive analysis of data a focus group was drawn from the students in the three case study subgroups. The purpose of this group was to inform all three research questions and provide additional information regarding themes and concepts that emerged from cross-case pattern analysis of surveys, observations, work samples, and interviews (Patton, 2002). The researcher established a set of semistructured research protocols to guide the focus group interview (see Appendix D). The protocols were designed periodically throughout the study and a final edit was completed just before the focus group was conducted in December. The focus group interview was recorded using a digital recording device and then transcribed. Field notes were gathered during the focus group interview to record subjects' behavior and affect.

Student Work Rubric

During the course of classroom observations and the semistructured interview sessions, student work was examined. Open-ended written responses, pictorial responses, and storyboard completion were examined using a rubric to assess students' level of visual interpretation, as addressed in Research Question One (see Appendix F). Student work samples also explored how students used prior knowledge to process new information found in the graphic novel, as addressed in Research Question Three. Additionally, independent assignments and group work helped inform interview protocols and advance a deeper understanding of the student experience.

Description of the Research Design

The research design of this study is a qualitative, naturalistic study in which the researcher observes and engages with the subjects and the topic of study in its natural environment. A multiple case study was constructed based on the theoretical propositions constructed from a review of literature and the study's research questions (Yin, 2009). These propositions originated in extensive research and exploration into the theories described in Chapter Two. The graphic novel presented itself as an exciting and intriguing educational context in which students were situated. Brought together with elements of working memory, visual literacy, and the intricacy of graphic novels these propositions laid the foundation of the three research questions that drive this study. A holistic and context sensitive examination of data focused on individuals. These subjects were nested within the bounded cases of learning styles defined through the Otis-Lennon School Ability Test (OLSAT). The data collected in this study were coded, analyzed, and examined for emerging themes and patterns. In some cases data was examined for evidence of specific visual skills. Coding and within-case content analysis were conducted and presented in Chapter Four based on data collection timelines. Data were

also analyzed by cross-case pattern analysis in an effort to answer the research questions and explore the potential value of graphic novels as an instructional tool (Creswell, 2007).

Description and Justification of the Analyses

Information gathered from a review of the Otis-Lennon School Ability Test (OLSAT) was examined to establish the cases for the study. OLSAT scores are reported as a total score which is then broken down into verbal and nonverbal scores. Four students were purposefully sampled that had a verbal score at least one standard deviation greater than their nonverbal score. Four students were selected that had a nonverbal score at least one standard deviation greater than their verbal score. Four students were selected that represented verbal and nonverbal scores with a range no greater than one standard deviation (16 points) from the mean (100). While sampling for students with high nonverbal scores it was found that they were only males that fit this criteria.

The Perception of Reading and Graphic Novels Survey (PRGNS) was administered to the students in the study group via an online survey. While OLSAT scores allowed for students to be sorted based on verbal and nonverbal learning styles, the PRGNS provided the researcher with additional information pertaining to the students' perceived reading ability, attitudes towards graphic novels, and familiarity with graphic literature.

Data collected during interviews, observations, and focus groups were audio recorded, and transcribed. This study utilized an approach to case study analysis advanced by Patton (2002), Yin (2009), Creswell (2007), and Stake (1995) including using theoretical constructs to drive the data collection procedures and strategies, an exhaustive cycle of examination and re-examination of collected data, convergent pattern recognition within cases and across cases, and the development of assertions and conclusions. One such representation of the cyclical nature of this process can be seen in Figure 2.

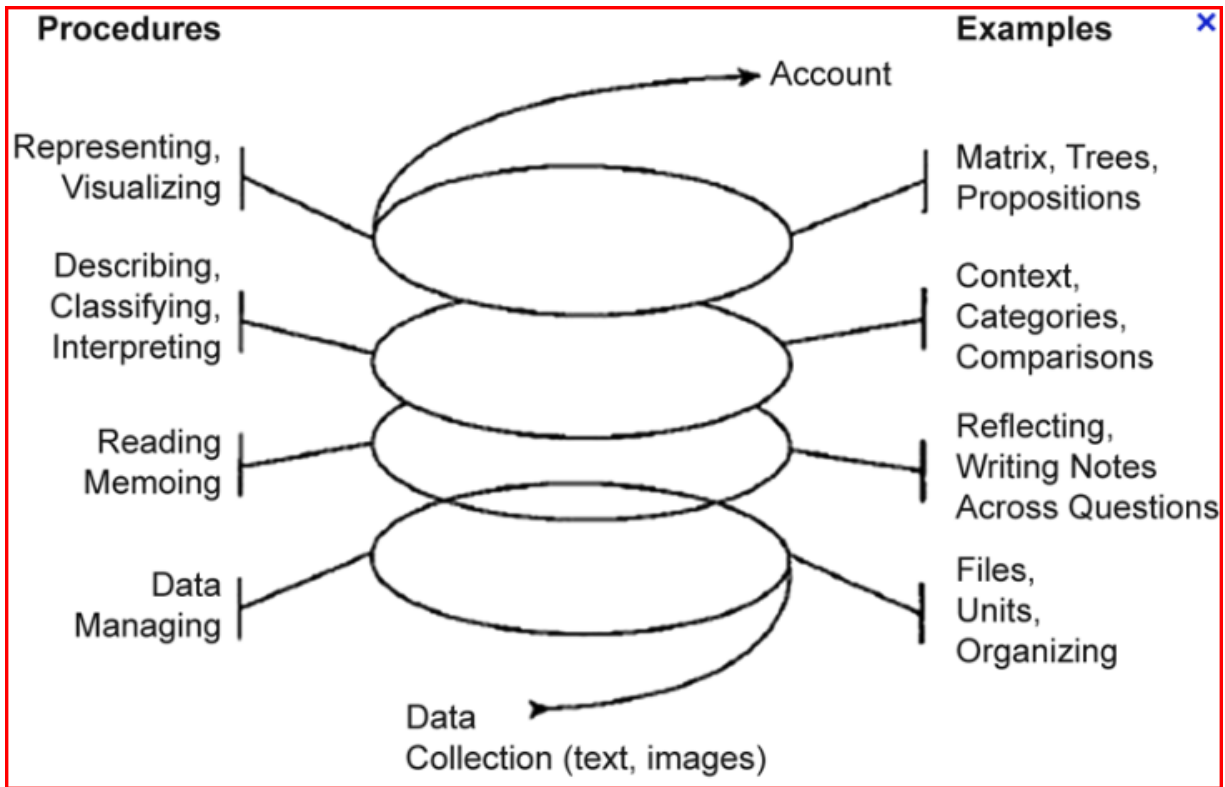


Figure 2. Creswell’s illustration of a qualitative data analysis spiral. Adapted from *Qualitative inquiry and research design: Choosing among five approaches* by J.W. Creswell, 2007, p. 151.

Data Collection Procedures and Timeline

General Data Collection

This research used a variety of data sources and methods to gather information. For instances where original documents and data were in hardcopy, sources were scanned and stored digitally. All documents were centrally stored and located online within a research wiki. This web-based storage area allowed for easy access and update throughout the study. In addition to reflexive notes that were recorder during observations and interviews an online wiki journal was kept to keep track of the researcher’s thoughts and questions. Additional notes were gathered and stored using the digital note feature of the researcher’s cellular phone. These were later transcribed onto the wiki journal as were hardcopy notes gathered for similar reasons.

The researcher worked within the framework of the schedules for the students participating in the study. The cooperating teacher made available to the research student schedules early in October while selecting the study group. It was determined that members of the study group were spread amongst four of the cooperating teacher's five class periods each day. Arrangements were then made to schedule the appropriate days for observations, interviews, and other data collection points.

Throughout the study the researcher kept an active and open line of communication with the participating teacher. Email, phone, and face-to-face contact were all utilized to varying degrees based upon the time of the study and the need for agenda creations, work sample design, work sample review, data collection, member checking, fact clarification, and a variety of other collaborative needs.

Peer review and member checking occurred frequently throughout the study as indicated in the timeline below. An eighth grade teacher familiar with the curriculum, graphic novel, and context of the study performed periodic peer review of coding and work sample scoring in order to maintain validity. Peer review notes were taken and stored in order to review and modify data shortly thereafter. Peer review of data occurred again in the spring and summer of 2012 to assure cohesion and clarity in the final content analysis process. All student data were presented to peer reviewers anonymously using pseudonyms.

The following table indicates the various data collection methods used to address this study's three research questions.

Table 4

Data Collection Methods

Research Question	Methods of Data Collection
1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?	Observations one and two Work samples one and two Individual interviews Observation three (timed reading) Work sample three Focus group interview
2. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel	Survey responses Individual interviews Focus group interviews
3. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?	Individual interviews Work samples one and two Focus group interviews

Timeline. The following section will provide a framework for the timing of the study.

Table 4

Timeline of Research Study

Date(s)	Event
April, 2011	Pilot Study, Survey
September, 2011	Review of Student OLSAT Scores
October, 2011	Research Group Determined, Student Consent Obtained
October 24, 2011	Participant Observation Conducted
October 25, 2011	Online Survey (PRGNS) Administered, Data Review
October 27, 2011	Classroom Observation #1 and Work Sample Collection Data Review, Peer Review
November 10, 2011	Classroom Observation #2 and Work Sample Collection
November 10-17, 2011	Continued Data Review, Peer Review
November 21-23, 2011	Student Interviews Conducted, Continued Data Review
December 7, 2011	Classroom Observation #3 and Work Sample Collection
December-February, 2012	Data Analysis, Coding, Member Checking, Peer Review
February 16, 2012	Focus Group Interview
March-April, 2012	Member Checking, Clarification, Peer Review
May, 2012	Recoding of Data, Peer Review
Summer-Fall 2012	Final Analysis of Data, Member Checking, Peer Review

Pilot study. In the spring of 2011 the researcher developed a survey to assess eighth-grade students' attitudes regarding reading traditional texts as well as their familiarity and perceptions about graphic novels. Once permission was obtained to conduct the study in the

targeted school, the researcher and cooperating teacher arranged for an appropriate time to administer the survey. The survey consisted of 12 multiple-choice and short-answer style questions and was administered in an online format to the entire team of 114 students during their social studies class in the computer room. Each student had his own computer and took the 15-minute survey independently. The school's integrated website housed the survey and was used to deliver the questionnaire as well as digitally store students' responses. The cooperating teacher reported no student issues related to the understandability of the questions.

Following the administration of the survey an online random number generator was used to select 20 students on the team. Results from these students were then examined. This examination led to the elimination of certain questions, the rephrasing of others, and other modifications that brought the instrument in line with the study's research questions. The modified survey was then uploaded for use in the study during October, 2011.

Review of student scores. As described earlier, student scores on the Otis-Lennon School Ability Test were examined to purposefully sample the students for the study. In early September, 2011 the researcher contacted administration in the cooperating school to request student scores on the OLSAT. A digital spreadsheet of scores was made available to the researcher who took two weeks to sort, code, and filter the scores for all 109 students on the team. Based on the criteria described earlier the study group of 12 students was chosen, and consent forms were distributed in early October, 2011. Within a week of distribution all consent forms were returned signed.

Initial lecture and observation. Based on discussions and conferencing held between the researcher and the cooperating teacher during August and September, 2011 an initial classroom visit was planned and delivered in the last week of October, 2011. Prior to the cooperating teacher introducing the graphic novel *The US Constitution: A Graphic Adaptation*

into the Constitution unit the researcher delivered a lesson on graphic novels. This lesson laid the framework on the history of graphic novels, the construct of a graphic novel, and how messages are conveyed through images. The five class periods were 42 minutes in length, and the original 12 students in the study were spread out amongst four of these classes. As noted earlier, one of these students dropped out of the study during the second week of November due to personal reasons.

This initial lesson proved useful in several ways. First it allowed the researcher to meet and connect with the subjects in the study before formal data gathering began. In this way seating locations and arrangements in the room were known ahead of the researcher's first entry into the classroom. Secondly this lesson exposed students to the graphic novel and provided clarification regarding what a graphic novel is and what it is not, an area of confusion evidenced in the pilot study survey given several months earlier. Finally this introductory visit allowed the researcher to plan the logistics of future observations. An observation point was chosen taking into account the positioning of each student within the U-shaped structure of the desks. The researcher and cooperating teacher were able to make adjustments and modifications to seating to allow for clear views of students while still being stealth.

Perception of reading and graphic novels survey. Modifications were made to the Perceptions of Reading and Graphic Novels Survey (PRNGS) during the summer of 2011 based on data from the pilot study conducted that previous spring. It was determined that several questions were improperly phrased and elicited unintended responses. The number of questions was reduced from 13 original questions in the pilot study to 12 in the PRNGS.

Table 5
Sampling of Questions from PRNGS

Question #
1. Which of the following describes you as a reader?
<ul style="list-style-type: none">• I am an avid reader and seek out opportunities to read new books.• When I have the time I enjoy a good book to pass the time away.• I am a capable, but reluctant reader.• I avoid reading at all costs.
6. What thoughts come to mind when you hear the term graphic novel?
7. Have you ever read a graphic novel?
8. How did it compare to reading a text-only novel?

Of the 12 survey questions, three questions focused on general reading perceptions as seen in sample question one. Two questions addressed the use of pictures while reading traditional texts, and seven questions specifically probed subjects' attitudes and familiarity with graphic novels, as seen in sample questions six, seven, and eight. A complete listing of these questions can be found in Appendix A.

Two weeks prior to administering the survey the researcher and cooperating teacher met to discuss the best procedure for having the subjects take the survey. It was decided that the entire team of students (n=109) would take the survey. This was done in order to provide the cooperating teacher with valuable data for the students on the team, as they would all be using the graphic novel in the class. Therefore, the survey was considered to be part of the normal educational practice.

On the specified date the cooperating teacher had all of the students in the five social studies classes complete the survey in one of the school's three computer lab rooms. The survey

was uploaded to the school's website and housed directly within the social studies web page for the cooperating teacher. By logging into their personal accounts the students were able to access and take the survey. On the day of the survey administration four students were absent from school including one student in the study group. Within three days each of the absent students was able to complete the survey while at school. Data from the survey were retrieved digitally through the cooperating teacher's account. Data were exported into a Microsoft EXCEL file and saved for analysis.

Observation one. The first observation in the study was conducted in late October. The researcher collaborated with the cooperating teacher in the weeks prior to the observation and determined the best day to observe given the timing of content and implementation of the graphic novel, *The United State Constitution: A Graphic Adaptation*. The focus of the lesson was the relevant leaders and events prior to the American Revolution. Students would begin class with a review of concepts delivered the previous day in class. The teacher utilized a digital white board to conduct a review activity and a transition was made into the material to be covered that day. Students participated in independent reading of the graphic novel and then a small group session to complete a worksheet related to the content in the graphic novel. This worksheet would later be collected as work sample one.

The focus of this observation was to gather data pertaining to the following research questions: 1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels? 2. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

The researcher sat in the rear of the room to the back right. Seats in the classroom were arranged in a large "U" shape with the teacher and main instructional area forward in the opening of the arrangement. The researcher took notes digitally on a laptop and used a classroom

desktop computer as a back-up. A classroom seating chart was developed prior to the lesson to indicate where subjects sat within the room based on each period. Subjects were coded with a number and assigned an alias to maintain anonymity in this observation and during all other data collection to follow in the study.

As the lesson began the researcher gathered both descriptive and reflexive notes regarding the actions and behaviors of the subjects. Particular attention was given to subjects' level of engagement in the lesson, specifically those parts of the lesson involving discussion and use of the graphic novel. When students were engaged in independent reading the researcher attempted to monitor task initiation and commitment, visual attack of the graphic novel and the pages within, and student affect. As the lesson moved from independent reading to small group discussion attention was given to subjects' level of continued involvement with the graphic novel, as well as their insight and interest in the discussions.

In the days following the observation the field notes were reviewed and collected within a spreadsheet format listing the specific observations for each of the subjects. In cases where clarification was needed to determine to interpret observed behavior the researcher coded the data and used the following observation date to member check with subjects.

Observation two. The second observation was conducted during the second week of November. The researcher met with the cooperating teacher a week prior to the second observation to clarify questions from the previous observation and review the upcoming lessons. It was decided additional information was necessary related to Research Questions One and Two, and a target date for the observation was established. The topic of the lesson was The Articles of Confederation and this lesson involved a review of previous day's lesson and an interactive class activity using the Smartboard. The students would then read nine pages of material in the graphic novel. After reading nine pages independently the students would begin

working on an activity sheet and begin grouping together as other students finished their reading. Unfinished work on the activity sheet was completed as homework that evening. This activity sheet was collected as work sample two.

Similarly to the first observation the focus of this observation was to gather additional data pertaining to the three research questions: 1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels? 2. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge? 3. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

The researcher sat in the rear of the room to the back right. Seats in the classroom remained arranged in a large “U” shape with the teacher and main instructional area forward in the opening of the arrangement. The researcher took notes digitally on a laptop and used a classroom desktop computer as a back-up. The classroom seating chart was utilized again to indicate where subjects sat within the room based on each period. Subjects were coded with a number and an alias to maintain anonymity in this observation and during all other data collection to follow in the study.

As the lesson began the researcher gathered both descriptive and reflexive notes regarding the actions and behaviors of the subjects. While attention was paid to the level of subjects’ involvement throughout the lesson particular focus was given to the independent reading time. Given that the student had nine pages of material to read this provided an extended opportunity to monitor how student attacked the reading page by page. Throughout the independent reading time the researcher repositioned himself to gain a better view of subject’s eye movement and facial expression. As the lesson moved from independent reading to small group work on the activity sheet, attention was given to subjects’ level of continued involvement

with the graphic novel, as well as their insight and interest in the discussions. At this time the researcher moved in close proximity behind discussion groups. During this second observation session the researcher checked with study group subjects to clear an appropriate time for interviews the following week. The researcher made certain subjects approved of the pre-determined time slot chosen by a review of their academic schedule.

Following the final observation of the day a brief conference took place with the cooperating teacher and the researcher to discuss previous days' lessons. Notes were taken in order to better interpret subjects level of prior knowledge with the material. Two additional emails were sent for clarification purposes over the next three days in order to follow up on additional questions related to prior teaching of the content.

Student interviews. Individual subject interviews were conducted during the third week of November. Interviews were conducted in the library media center of the participating school. The library media center is a large, open area with several small work areas scattered to the the perimeter. The interviews were conducted at a table in a quiet area, free from distractions in the front left area of the media center. The researcher sat with back facing the wall and the student interviewee sat across the table with their backs to the larger area of the room, free from distractions. The researcher used a laptop computer with recording software to record the interview, with a back-up digital voice recorder.

Six weeks prior to conducting the interviews a review of student schedules was conducted to determine available and appropriate times for the interviews. During the last week of October the researcher contacted the participating subjects to get approval of the selected interview times in November. Adjustments were made based on student requests, academic needs, and availability of both researcher and subjects. There were three days dedicated to the

interviews. Five interviews were conducted on day one of the interviews, four on day two, and the final two interviews were scheduled on day three.

Interviews lasted approximately fifteen minutes and were designed to inform all three research questions. The researcher used these questions in a manner that Creswell describes as “the core of the interview protocol” (Creswell, 2007, p. 133). The semistructured interview protocol consisted of seven main questions and sub-questions developed around the research questions, and informed by previous classroom observations conducted in the weeks leading up to the interview sessions. Subjects’ responses on the Perceptions of Reading and Graphic Novels Survey (PRNGS) were also used to design the interview questions and sub-questions.

Table 6

Sampling of Semistructured Interview Protocols

Interview Question	Research Question
4. When you read something of your own choice, what types of material do you read?	RQ2
5. When learning new information, what helps you remember things?	RQ1, RQ3
7. How much previous knowledge did you have about the United States Constitution before reading of the graphic novel in class?	RQ3

A complete listing of interview protocols can be found in Appendix B. It should be noted that for each subject all seven of the main interview questions were used, however sub-questions, clarifications questions, and follow-up questions varied based on the responses of the subjects. Responses from subjects were later coded for analysis and were used to inform and design

protocols for the focus group as well as establish targets for observation during the third and final observation.

Observation three. The third observation was conducted during the first week of December. The researcher met with cooperating teacher to review lesson plans and goals for classroom activities. A date was established for the observation. The topic of the lesson for the observation date was The Bill of Rights. During this lesson the students begin class with a review of a homework assignment that required interpretation of graphic novel images assigned to various articles of the Bill of Rights. This assignment would be collected as work sample three of the study. After 10 to 12 minutes of small group discussion results were shared out together by the class. The teacher then transitioned the lesson into a 15 to 20 minute silent reading period where students were required to read the graphic novel. The lesson concluded with about 5 to 10 minutes of small group discussion about the reading.

The focus of this observation was to gather additional data pertaining to the following research questions: 1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels? 2. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge? A review of student responses from the interview sessions led to the researcher targeting students' reading rate for this final observation. The period of silent reading was designed by the researcher and cooperating teacher to facilitate a long enough period of time where students could be observed and timed on a page-by- page basis.

The researcher sat in the rear of the room to the back left. Seats in the classroom remained arranged in a large "U" shape with the teacher and main instructional area forward in the opening of the arrangement. The researcher took notes digitally on a laptop and used a classroom desktop computer as a back-up. The classroom seating chart was utilized again to

indicate where subjects sat within the room based on each period. Subjects were coded with a number and an alias to maintain anonymity in this observation and during all other data collection to follow in the study.

As the lesson began the researcher gathered both descriptive and reflexive notes regarding the actions and behaviors of the subjects using hardcopy notes. The small group discussion that began each class allowed for the researcher to move about the room and overhear discussion related to the interpretation of symbolism and visual metaphors found in the homework assignment. These hardcopy notes were later transferred to digital form for analysis. As the lesson transitioned to the silent reading period the researcher returned to a desk area where the laptop and desktop computer were prepared for timing reading rates of subjects. Using multiple digital stopwatches the researcher was able to time subjects' per-page reading rate. The researcher was able to record time for a minimum of seven page shifts per subject. Any missed page timings were recorded as events without time.

During the final minutes of each class the researcher returned to taking descriptive field notes. The researcher moved about the room to capture subjects' conversations. Following the final observation period of the day a brief conference took place with the cooperating teacher to clarify questions regarding subjects work throughout the day. Notes were made regarding student instruction prior to the lesson to more accurately assess any data that informed Research Question Three relating to students integration with prior knowledge. No additional correspondence was needed following observation three with regards to the lesson.

Focus group. During the first and second weeks of January, 2012 a focus group of three students was selected. Based on previously collected and coded transcripts, work samples, and field notes two females and one male subject were selected to meet for one focus group session in an effort to deepen understanding of the emerging themes (Seale, 2004). The selection of

these three subjects was based on several factors. First the subjects selected represented each one of the three learning styles groups: 1. Relative high verbal 2. Relative high nonverbal 3. Balanced verbal and nonverbal. While representation from these three groups was needed these subjects also yielded qualitative data that was insightful, intriguing, thoughtful, and provided great depth to the study.

Timing of the focus group was established in order to fall conveniently within the parameters of the subjects' schedules. A 35-minute period was scheduled and a computer classroom adjacent to the school's library media center was chosen for its location, free of distractions. The focus group interview took place the second week of February, 2012. The researcher and subjects sat at a circular table in the room. The structure of the focus group was designed to be simple and allow for open discussion of topics with the researcher acting as a moderator rather than an interviewer (Patton, 2002). The group activity consisted of subjects responding to statement cards that were designed to explore several emergent themes. The statements used to illicit discussion were developed based on preliminary findings drawn from coding and data analysis in December, 2011 and January, 2012. A Likert-type rating scale was used for students to indicate agreement or disagreement with each statement. Subjects would rate the statement directly on their card which was then used to generate open discussion. Some of the statements included the following: 1. It takes a long time to read a graphic novel because it involves careful observation and visual analysis 2. Graphic novels are like picture books that are only useful to students who cannot read as well as other students 3. I recognized specific images in the graphic novel from things I learned before.

The focus group began with students arriving in the computer classroom. The researcher explained the guidelines and protocols for the study group. Subjects were instructed that they would be given an index card with a statement on it. They were to read the statement and then

rate their agreement or disagreement based on the five-point, Likert-type scale that the researcher posted on the whiteboard of the classroom. The subjects were told that they then would have a few minutes to share their response, hear the other subjects' responses, ask questions, and provide clarification. The subjects were also informed that there were additional statement cards which would follow the same procedure. While the researcher encouraged the subjects to be actively involved with the discussion they were also free to simply choose the rating of undecided which would limit their input on a particular topic. The focus group began with the first statement card and continued as expected. All six statement cards were addressed and discussed with input from all subjects. During the final eight minutes of the period the researcher was able to review notes and clarify some of the subjects' responses.

The researcher recorded the focus group using digital recording software on a laptop computer as well as using a digital voice recorder as backup. Both descriptive and reflective field notes were taken during the focus group. At one point the focus group was interrupted by a staff member looking for a student but the discussion re-engaged immediately with no apparent effect. As moderator, the researcher made efforts to have equal participation among the subjects. A tally was kept of the number of times each subject shared information and the researcher consistently checked to see if all subjects had anything to add before moving on the next area of discussion.

Coding of the Data

The researcher conducted the qualitative analysis of the data in a way that addressed what Patton refers to as both the convergent and divergent nature of the data (Patton, 2002).

Perceptions of Reading and Graphic Novels Survey (PRGNS)

The PRGNS represents the first piece of data collected by the researcher. This survey was administered early in the fall of 2011 to inform all three research questions and provide

background information for each of the study's subjects. Due to the focused and close-ended nature of the survey the information in it was not coded for analysis, but rather used to inform individual interview questions and to provide a description of the subjects.

Interview and Observation Coding

Observations one and two of this study were conducted in October and November and were the first point of data to be reviewed and read. Memos and reflective notes were kept on observation checklists immediately following the observation sessions. Checklists and notes were coded, reviewed, and recoded three to five times, with a range provided in order to account for the emerging codes and the need to recode only a portion of certain records. In a manner consistent to what Patton (2002) calls first-cut coding these raw notes ultimately formed the generalized categories used in the coding procedure. The interview sessions provided the researcher with the opportunity to gain further insight into a variety of study-related topics directly from the subjects themselves. Interview protocols were developed using the theoretical propositions providing the framework for this study (Yin, 2009). An examination of previously collected survey data and work samples was required to refine and edit some of the interview questions. It was anticipated that these interview sessions would generate the widest array of data to be coded based on the representation of all three research questions and the number of questions being asked. A similar first-cut reading, or open-coding of the interviews, took place in the final week of November and into the first weeks of December.

Coding of the observations and interview sessions began with an initial reading of the transcripts and the field notes. During an inductive process described by Patton (2002) as a first-cut coding, shorthand codes, notes, and memos were taken. This process is also referred to as an open-coding procedure (Creswell, 2007). Content analysis continued in December with several more readings of the data. The numerous codes were examined and collapsed into 23 categories

(see Appendix I). These categories included what the researcher considered both emergent and prefigured categories (Creswell, 2007), the latter being drawn from the themes of reading attitude, interpretation, and knowledge integration as outlined in the study’s research questions. These categories reflected themes and theoretical propositions discussed in Chapter Two. As review of data and content analysis continued the researcher winnowed data and practiced what Creswell (2007) refers to as lean coding, attempting to limit the number of categories. Throughout this convergent process themes became evident among the categories of codes. Ultimately six themes emerged as being central to the categories. These themes would become key points of data for within-case and cross-case analysis in Chapter Four, as well as part of the final assertions and conclusions of the study.

Table 7

Listing of Interview and Observation Themes

Themes
reading attitude
reading focus
learning style
visual literacy
graphic novel attitudes
prior knowledge

Following the content analysis of the interview sessions and observations the researcher conducted follow-up contact with subjects via email and brief interviews to clarify questions and review preliminary analysis with the subjects. Following this member checking the researcher requested a review of the interview coding by a peer familiar with the study. The categorical and

thematic code list was provided to the peer reviewer to provide some context and structure and expedite this complicated process. The reviewer used this categorical list to code the data. Notes were gathered at an informational meeting and suggestions were considered for further analysis.

The final stage of content analysis occurred in the spring and summer of 2012. The researcher recoded the data in the interview sessions in May of 2012 using the categorical and thematic list of codes. Results of the second coding were compared with the first. In June and July of that year the researcher reviewed the data for analysis, and checked with any members via email and phone regarding clarification and correction of data.

Student Work Samples

Throughout the study the researcher gathered student work samples on three different occasions. The initial intent of the researcher was to code these work samples according to a similar procedure used in the individual interview and observation sessions. During the preliminary data analysis in the second week of November, 2011, it was decided that the work samples reflected a limited number of specific and discrete visual literacy skills. The researcher then targeted the skill(s) for that particular work sample and established frequency charts for the subjects to track these skills.

Work sample one. This work sample consisted of seven questions. The subjects were required to read the question and examine the illustration from the graphic novel that accompanied it. Subjects then responded to the question in the box to the right of the picture (see Appendix E). It was determined that subjects' ability to interpret symbolism and metaphors was the dominant skill required. The researcher developed a scale to rate each answer based on the strength of their response. This work sample was scored in January, 2012 and then rescored in May, 2012 with peer review.

Work sample two. This work sample consisted of a timeline that required labeling with years and nine additional questions. For the nine additional questions the subjects were required to read the question and examine the illustration from the graphic novel that accompanied it (see Appendix F). While the content of work sample two had changed from that in work sample one, the format and design of the work had remained the same. Subjects then responded to the question in the box to the right of the picture. It was again determined that subjects' ability to interpret symbolism and metaphors was the dominant skill required. The researcher employed the same scoring scale to rate each answer based on the strength of their response. This work sample was scored in early February, 2012 and then rescored in May, 2012 with peer review.

Work sample three. This work sample covers information related to the Bill of Rights and had a set of ten questions. Each question related to an amendment of the Bill of Rights. Subjects needed to find the missing information from speech bubbles and text boxes indicated with a star. Upon interpreting the images and remaining text they were to provide the missing dialogue or information by writing it on the lines below the images. It was determined that this work sample required subjects to demonstrate three skills of visual literacy: 1. Symbol and metaphor recognition 2. Decoding expression 3. Authority independence. A rubric was established for these skills and the subjects were scored on their ability to demonstrate them.

Table 8

Work Sample Three Scoring Rubric

Decoding Expression	Symbol and Metaphor Recognition	Authority Independence
Student accurately identifies and interprets facial and/or body expression in all—images - 4	Student accurately identifies and interprets metaphors and symbolism represented in the—images - 4	Student demonstrates an ability to skillfully bridge meaning when explicit information in text or images is withheld - 4
Student accurately identifies and/or interprets facial and/or body expression in all/some—images - 2	Student accurately identifies and/or interprets metaphors and/or symbolism represented in the—images - 2	Student attempts to bridge meaning when explicit information in text or images is withheld – 2
Student does not accurately identify and interpret facial or body expression in any of the—images – 0	Student does not accurately identify or interpret metaphors or symbolism represented in the—images - 0	Student does not attempt to bridge meaning when explicit information is withheld - 0

Observation Three

During November, 2011 preliminary reviews of data and individual interview sessions indicated that it would be beneficial for the researcher to establish a rate of reading using the graphic novel. The researcher met with the cooperating teacher and targeted a date for an observation that would contain sufficient time to track students reading. Timing was conducted according to the procedures described earlier in this chapter, and each subjects' per-page timed entry was averaged to allow for easier analysis. There was no coding of data for this observation.

Focus Group

Following an exhaustive process of coding, member checking, and peer review during the months of December, January, and February, 2012 emerging themes were identified by the researcher. Patterns and trends within the data necessitated a more specific exploration of these findings. On February 16, 2012 the focus group was conducted. Digital audio recordings of the focus group were then transcribed for coding. Protocol statements used to conduct the focus group were a product of the data analysis mentioned above. By default, all three research questions were addressed to varying degrees. The focus group was the final source of data to be collected. Due to the rich descriptions and responses given in this small and personal setting, the focus group responses did not require member checking and provided great insight into this research. Trends and patterns were identified and will be discussed in more detail in Chapter Four.

Statement of Ethics and Confidentiality

Permission to participate in this research was sought from each district's superintendent, the school principal, subjects and their guardians, and all participating teachers. To assure confidentiality, each participant was assigned a coded identification number and given an alias.

All data was collected by a neutral person. Any and all audio recordings transcribed using the outside service contained alias names at all times. Master lists of subjects' names, aliases, and corresponding data were kept locked and confidential, known only to the researcher. Data were only made available to the researcher and other researchers for whom the data was essential regarding member checking or peer review. Data were made available to those participating principals, subjects and parents who request it. Data were also presented in complete form to subjects upon member checking for clarification.

Conclusion

A qualitative study was employed as the framework for this research study. This chapter outlined the methods this researcher used to investigate the areas of student interpretations, attitudes, and knowledge integration while reading a nonfictional graphic novel about the United States' Constitution. It began with a description of the researcher's background, setting, instrumentation, and sampling procedures. This was followed by a discussion of the research design, data analysis, data collection and timeline, and coding procedures. The chapter concludes with a statement of confidentiality and ethics. The next chapter will report the results of the study.

CHAPTER 4: ANALYSIS OF THE DATA AND FINDINGS

The purpose of this study was to examine how eighth grade students with varying verbal and nonverbal learning styles interacted with a graphic novel. The following three research questions were addressed:

1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?
2. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?
3. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

This chapter will present the results of this research in four major sections. The first section will address Research Question One. The results for the qualitative data gathered applying to this research question will be addressed chronologically within subsections. Most subsections will be divided further according to subjects' learning styles: high verbal, high nonverbal, balanced. The second and third sections of this chapter will address Research Questions Two and Three respectively, and will use the above-mentioned structure to discuss the findings. Due to the similar nature of the lesson design of both observations one and two, results for the qualitative data collected will be presented together in one section. Similarly, due to the replication of skills required and recorded in both work samples one and two results for the qualitative data collected will be presented together in one section. A section summary will follow each of the first three sections. The fourth section of this chapter will present the findings for the three members of the focus group, a group sampled and constructed to better inform emerging trends from previous data collection. This chapter will close with a summary of the findings.

Analysis of the Data

Research Question One

Research Question One: How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?

Observations one and two. The first two observations that took place during the study occurred in the participating teacher's classroom and were designed as introductions to both the content of the United States Constitution and the graphic novel *The United States Constitution: A Graphic Adaptation*. The first observation focused on the end of the American Revolution and discussed the ideas of Locke and Hobbs. The structure of the lesson included a group interactive activity using a digital whiteboard, independent reading, independent fact gathering, and small group collaboration. While the second observation covered content related to the Articles of Confederation, the format of the lesson was very similar. Observation two included small group activities, independent reading, and large group discussion including the use of digital whiteboard review.

High nonverbal subjects. The subjects included in the high nonverbal learning styles subgroup of the study included Doug, Carlos, and John. Results of the observations begin with brief descriptions of the subjects in order to build depth and a more comprehensive understanding of the data. Descriptions were generated from analysis of standardized test scores and the Perceptions of Reading and Graphic Novels Survey (PRGNS).

Doug is 13 year old boy whose nonverbal score on the Otis Lennon Scholastic Ability test (OLSAT) was 21 point higher than his verbal. He is a self-described avid reader, but did acknowledge that he needs breaks throughout his reading sessions which typically can last a long time. When reading textbook information that includes visuals Doug will scan pages for pictures prior to reading the text. In describing his attitudes regarding the reading of a graphic novel prior

to this study Doug stated, “I believe reading a graphic novel takes more skill than reading an all-text novel. While in reading an all-text novel you only need to have the skill to read words, but in a graphic novel you have to figure complex pictures out.”

During the first observation Doug was absent from school. During the second observation Doug was a thoughtful, quiet, but attentive participant in the class. He typically kept his hand down during question and answer periods led by the teacher. Doug maintained constant eye contact on people within the room, and showed specific and appropriate reactions to answers given and questions asked. When the work in class shifted to reading the graphic novel, Doug took a minute or two to examine the book flipping page by page from the front to the back of the book. Group work that involved the graphic novel lacked discussion at first, but with some teacher input Doug engaged in brief exchanges regarding the graphic novel.

Carlos is a 14 year old boy whose nonverbal score on the OLSAT was 18 points higher than his verbal score. Carlos does not read much for pleasure indicating that he typically spends less than 30 minutes a day reading for his own pleasure. When reading factual information from a textbook Carlos did not indicate any strategies that he was aware of using, but he acknowledged that he typically can remember most the information that he reads without any problems. While Carlos noted that he felt reading a graphic novel is more challenging than a text-only book, he did not discuss why, but stated that he often thinks of the term “comic book” when the word graphic novel is mentioned.

Carlos showed great enthusiasm during both observations particularly during the teacher-led review and introductory activities that began each class. Carlos volunteered every time the teacher needed a student to go to the front of the room to use the interactive white board. When the classroom activities moved to the reading of the graphic novel Carlos was quick to task, flipping directly to the assigned pages without any exploration or examination of the graphic

novel. Carlos was an efficient reader, rarely taking breaks or seeming distracted by elements within the classroom. At one point during the first observation Carlos studied two pages of the graphic novel for several minutes. In the small group activities of each observation Carlos was an active, but not dominant participant.

John is a 13 year old boy whose nonverbal OLSAT score was 19 points higher than his verbal. For pleasure he reads between 30 and 60 minutes each day, but when the reading involves long passages of content for school John needs to go back and reread selections. He states that he loses focus on material that is not interesting to him. Prior to this study John was not sure if he had ever read a graphic novel, but thinks of pictures when he hears that term. When asked which he felt was more difficult to read, a graphic novel or textbook, John stated, “I don’t really know. They are both hard, but I would say the textbook because I think it is harder for me to get information out of it.”

In both observations John was extremely lively and engaged. Initially John seemed as though he may have difficulty maintaining focus as he moved about in his seat often and asked to use the bathroom several times. This, however, did not prove to be a problem. As the teacher began each lesson with a review discussion and introduction to the day’s topic John continually volunteered. Two times John was asked to go to the front board and provide information as part of the activity and each time John eagerly engaged in answering and explaining his choices. When the lessons shifted to reading in the graphic novel John was a true explorer, examining the entire book prior to reading the required pages. While John often diverged from the assigned pages, he did so to re-examine pages or investigate upcoming chapters. John would often spend several minutes on two or three pages, flipping back and forth between current pages and previously read pages as if to find clarification to what he was reading and seeing. During the second observation the teacher instructed the students to transition from their independent

reading to a small group activity. John was reluctant to stop reading, continuing on with his independent reading until prompted several times by both the teacher and fellow students. He was a lively participant within his small groups and worked quickly on written responses. John seemed to preferred discussion and independent reading to writing responses.

High verbal subjects. Eileen is a 13 year-old girl whose verbal score on the OLSAT was 15 points higher than that of her nonverbal score. Eileen described herself as an avid reader who seeks out opportunities to read, and when it comes to reading school content she felt that she usually remembers most of what she reads without difficulty. When asked about time she spends on reading for pleasure Eileen indicated that she spends between 30 and 60 minutes a day reading. While Eileen was not sure if she had ever read a graphic novel, she did mention that reading a graphic novel may require more skill than reading a text only book because one would need to understand all of the images.

Eileen presented as a solid student during the two observation periods. When the teacher initiated the lessons Eileen was quick to focus on the discussion and review activities. She was a willing participant during question and answer periods, volunteering answers during both observations. Eileen was a thoughtful student who took time to respond to questions while incorporating other students' ideas. In one instance during the second observation she noted, "I agree with Russel that the Articles of Confederation were necessary, but I think they were flawed." She was a patient and efficient worker who handled the transitions quickly moving from discussion to independent reading. When reading independently Eileen immediately found her place to begin without any exploration into other areas of the book. She read with pace and purpose looking back briefly to prior pages during the first observation. When the activity moved to small group discussion Eileen contributed to the discussion but did not dominate the group dynamic.

Russel is a 14 year old boy whose verbal score on the OLSAT was 16 points higher than his nonverbal score. Russel indicated that he is an avid reader who enjoys reading for pleasure about 60 minutes a day. He felt that he was able to remember information presented in textbooks easily. When asked about the difficulty of reading an image based graphic novel or text only book Russel felt that it is considerably more difficult to read a text only book. One of the reasons he cited was that, "Reading a text filled book requires more focus and patience because you have to picture what is being told in your head." Russel also noted that when reading a recent graphic novel it took him less time as he did not have to read long passages.

Russel was a highly energetic and involved student. During the two observations Russel was continually eager to participate with all activities. He made excellent eye contact with both the teacher and the students in the room during question and answer periods. Russel listened intently to teacher instruction and student input and paid particular attention to the visuals presented on the interactive white board during introduction and review portions of the class. Russel was a visual explorer. When the instruction moved to independent reading of the graphic novel Russel took several minutes during each observation to look at the pictures in the pages of the book. During the first observation Russel studied the outside illustrations of the book long after the class had moved into the content of the required pages. He then flipped through the book from front to back, pausing at several spots and smiling as if amused. He was a diligent student who did not seem to be avoiding his work, and in a brief conversation following class he indicated that he found the images in the book clever. During group work at the end of the second observation Russel had struck up a conversation with fellow group members about the symbolic interpretation of the use of colors on a page of the graphic novel.

Joe is a 13 year old boy whose verbal score on the OLSAT was also 16 points higher than that of his nonverbal score. Joe reported that he is an avid reader who often reads for several

hours if given the chance. He has read many graphic novels and stated, “I like comics and graphic novels just as much as regular books. I think they are underrated and stereotyped by teachers. They can have some amazing artwork and writing.” When asked about which type of book he felt required more skill to read, a graphic novel or text only book, Joe said, “It depends on the difficulty and plot of each one. If I like the plot more in one then it is easier to get through.” Joe also felt that a wide range of classes in school could benefit from using graphic novels.

Joe was an interesting student to observe. In both observations Joe was quiet, reserved, and appeared to be disengaged. He did not make regular eye contact with the teacher or his peers during discussions, but was able to initiate independent reading and required work without prompting. His ability to transition and complete written work demonstrated that he had an understanding of the material and may have absorbed a great deal through listening. Joe was a deep thinker who had many good ideas to share. This was evident in his initial survey responses as well as the individual interview. He was quiet in small group discussions and during both observations his group needed teacher prompting and questioning to initiate discussion. Once the discussion began it was to the point and brief. During independent reading periods Joe stayed on task and would scan the images and text within a page. At times this would slow his pace of reading.

Sally is a 13 year old girl whose verbal score on the OLSAT was 15 points higher than her nonverbal score. Sally described herself as a reluctant reader who only read for pleasure for a few minutes each day. When it came to reading long passages of text for school Sally indicated that she often needed breaks, would lose focus, or had to go back and reread passages. A graphic novel that Sally had previously read was *Maus*. When asked how it compared to reading a text only book Sally stated, “Reading *Maus* was like reading a novel except instead of

picturing the scene in my mind it was drawn out for me. I enjoyed it more because of that.”

Along a similar line of thought Sally said, “I think reading a graphic novel takes more skill because you have to interpret the pictures and text.”

Sally was a highly involved student during both observations. At the beginning of each class observation Sally continually volunteered to answer review questions and interact with the activity on the digital white board. She was animated, appropriately social and interactive during question and answer periods, and maintained excellent eye contact with the teacher and her peers. When the class activities shifted to independent work Sally demonstrated equal engagement and ability. As Sally began reading the assigned pages of the graphic novel she would begin by flipping through the pages to familiarize herself and then she would begin. Her reading was slow and Sally’s facial expressions reflected the complexity of the images and ideas. She would often stay on a page for several minutes, look back to a previous page, and shift about in her seat as if trying to resolve an internal question. During the first observation Sally raised her hand and asked two clarifying questions to the teacher regarding the author/illustrator’s representations of key concepts. Once work transitioned from independent work to the small group activity during the first observation Sally quickly engaged her peers with questions about several images. During the second observation Sally delayed her transition from independent reading as she had not finished the assigned pages and seemed reluctant to stop without a sense of closure. Soon afterward she eagerly engaged in the small group activity.

Balanced subjects. Rhonda is a 14 year old girl whose OLSAT scores for verbal and nonverbal only differed by three points with the higher score being nonverbal. She described herself as someone who enjoys a good book to pass the time away, and who can remember things she reads without difficulty. When reading a textbook that has images within it Rhonda states that she will scan the images on a page first and then read the information while using the

images as they relate to the text. Rhonda did not report having read any graphic novels on her own, and when asked about which she thought required more skill she felt a text only book was more challenging than a graphic novel. She felt that social studies and science were the only two classes that a graphic novel could be useful for instruction.

During both observations Rhonda was an efficient and steady worker. She periodically would volunteer to answer questions and use the digital white board during the introduction of each class. From time to time Rhonda would divert her visual attention from the class discussion towards writing or sketching on her paper. These moments of what seem to be inattention however were broken when she would volunteer an answer. Rhonda's independent reading of the graphic novel was paced and methodical. She would move directly to the pages of reading that were required with little or no exploration around the book. In both observations one and two Rhonda finished the reading early and moved directly to answering questions that were to be part of the small group activity. She was an active participant during small group discussions and contributed some interpretation to questions regarding images in the text. At times Rhonda's group would engage in off task discussions, but they were quick to refocus when prompted by the classroom teacher.

Brian is a 13 year old boy whose OLSAT scores for verbal and nonverbal differed by only one point with the higher score being verbal. While Brian described himself as an avid reader who will often spend between 30 and 60 minutes reading for pleasure he also indicated that when reading textbook information he can struggle. Brian indicated that when reading longer text passages he often needs breaks, can lose focus, and needs to reread sections. When examining text with images he often scans the reading for bold text titles before reading and examines pictures and images last. Brian had some experience reading graphic novels and stated, "I felt like the graphic novel was more exciting but I would rather read a text only novel

because you get more information.” He felt that reading a graphic novel could take less time than a text only book but it really depended on how detailed the images were. Brian stated that classes like social studies, language arts, and art could use graphic novels for instruction.

Brian had two very different observation periods in terms of involvement and his dynamic. During the first observation Brian was an eager participant. His hand was up for volunteering in front of the class, and answering questions. When the independent reading was assigned Brian quickly engaged with the book, exploring it thoroughly before setting about the required task. During reading Brian was deliberate and expeditious but did not hesitate to review previous pages and look ahead from time to time. Once the reading was completed he engaged in lively discussion while asking for clarification from the teacher regarding historical events. During the second observation Brian was more reserved. He did not appear to be ill or sad, but he did not volunteer for any of the review questions and activities. During the independent reading time Brian was focused and equally as deliberate with the task as he was during the first observation. When the time came to transition to small group work however, he continued with his reading. Eventually the teacher came over and prompted him towards the group work, which he transitioned to. Once the small group finished their work Brian returned to the graphic novel indicating that he indeed was interested in some elements of the reading.

Sydney is a 14 year old girl whose scores on the verbal and nonverbal sections of the OLSAT differed by only two points with nonverbal being higher. Sydney described herself as a moderate reader who can usually remember most of what she reads from a textbook. When asked about how long she reads for pleasure she stated that she would read until someone made her stop. When attacking reading for school in a textbook she will scan the pages for bold text titles and then interact with images as they connect with the text. Sydney was not very familiar with graphic novel and said that they reminded her of comic books. She felt that a text only

book probably required more skill and effort to read because the images provide assistance to the reader.

Sydney was a quiet but active participant in the classroom for both observations. She readily volunteered during the interactive moments of the introduction and review particularly when the digital white board was utilized. Once the class switched over to the independent reading of the graphic novel Sydney seemed intrigued by the book. During the first observation she began her independent reading and soon turned to the girl next to her to discuss an image the author/illustrator used to symbolize the tyranny of King George III. During this brief exchange she commented, "That's so cool! I never thought of that." When the work transitioned to the small group Sydney remained very quiet during both observations. She worked intently on what was supposed to be group work, yet she seemed to want to answer items herself before sharing with others. Each time she did indeed rejoin the group effort.

Susan is a 13 year old girl whose scores on the OLSAT differed by three points with the verbal score being higher. Susan is an avid reader who described herself as someone who would read until someone forced her to stop. She reported that when reading textbook material for school she has very little difficulty remembering information later and can read at a rapid pace. Susan focused on the images in a textbook first, scanning the pages for the visuals and then reading the information. She remembered reading several graphic novels recently and stated, "It's more interesting and easier to understand confusing situations with the pictures."

Susan was the most involved and interactive subjects during the observations. Her general interest level during the introductions of both lessons was evident not only in the degree to which she volunteered to answer questions and work on the digital white board, but also in the depth of her responses and questions. Susan's hand was up to participate at almost every moment of the two observations and when the activities shifted to independent reading of the

graphic novel her eyes lit up with each turn of the page. During the first observation Susan spend over two minutes looking at some individual pages, a length of time well beyond the average as we will see with later reading rate results. Susan's animated affect was further highlighted as she laughed and chuckled at various parts of the graphic novel. At one point during the second observation the teacher questioned what Susan was giggling about to which she replied, "This is cool how they symbolized this argument between the small and large states. That's perfect." Susan is an artist and demonstrated some of her ability and connection to art through her informal, and perhaps unintentional, sketches found on all her papers. Some of these sketches were unrelated to the theme in class; however a few may have been inspired by it such as several eagles and birds. Susan was a good group worker who asked insightful and thoughtful questions well beyond the required responses on the activity sheet. Twice during the small group time in observation one she asked the teacher for historical clarification regarding the timing of legislation in order to understand a concept conveyed through the images.

Work samples one and two. As it was discussed in the methodology the result for work samples one and two were collapsed. Both work samples focused on the use of symbol and metaphor recognition and were scored on a four-point rubric with a four representing student answers that accurately identified and interpreted metaphors and symbolism represented in the images of the graphic novel. Samples were scored, rescored and the averages compared. These work samples were started in the classroom and completed for homework. Both assignments represented material and content from classroom observation one and two respectively.

High nonverbal subjects. Overall the high nonverbal subjects, Doug, Carlos, and John, did well on the symbol and metaphor recognition. Their group average was 35.5 points using results from both samples as compared with the study group average of 38.88. Verbal subjects averaged 32.13 and the balanced subgroup averaged 40.0. Within the subgroup Doug and John

scored very well having average scores of 44.5 and 41,5 respectively while Carlos had an average score of 20.5.

High verbal subjects. The high verbal subjects scored the lowest of the three groups in their symbol and metaphor recognition, however they showed the greatest consistency in scores. Eileen had a high subgroup average of 34 while Russel's low average was 29, only five points lower. All scores demonstrated an ability to adequately recognize symbolism and metaphors within the graphic novel. Sally and Eileen posted the highest averages with 33 and 34 points respectively.

Balanced subjects. Students in the balanced group scored the highest of the three groups yet also had the greatest variation of averages within the group. The group average was 40 points with Susan having the highest average score of 55.5 points. Rhonda had an average of 33.5 while Sydney and Brian had averages of 31 and 30 respectively.

Individual interviews. Individual interviews were conducted in the manner described in the methodology and addressed Research Questions One, Two, and Three. The information pertaining to Research Question One only will be presented here as described in this chapter's introduction. Interview coding yielded both specific codes and generalized themes which will both be addressed within this section. The three generalized themes are reading focus, learning style, and visual literacy skills.

High nonverbal subjects. One of the first themes explored during the interview sessions was that of reading focus. Each of the nonverbal students acknowledged that mind wandering was an issue to some degree while they read long passages. Carlos noted that this was indeed an issue for him. When asked about mind wandering Carlos stated, "This happens all the time to me. I get to a point where I realize that for the last several pages I have been thinking about something totally different...I will skip like a paragraph and something else." Doug also noted

that this problem occurs for him, but cites more specific reasons. “Sometimes if I am like really tired and unfocused I won’t realize it for a while just reading... I usually just go off and have to read it again,” he concluded. John also noted some degree of this issue but later discussed how learning style played a role in his reading.

The theme of learning style naturally played a prominent role in most subjects’ responses for Research Question One. When the interview questions focused on learning visually with pictures John noted, “It makes you think a lot more because with the pictures you have to figure out yourself what they mean because it is not all-text...I think I am more of a visual learner.” Perhaps one of the most interesting interactions was when John began discussing his visual learning in terms of taking notes. He felt that it was often essential for him to take notes while reading in order to maintain focus. As John noted, “If I am reading, just reading and not taking notes...I kind of read and then it just goes out like. I’ll start thinking of other things.” When asked if this occurs with all types of reading John responded, “I like the graphic novels a lot because you have to figure out a lot of stuff...and I think that helps because that keeps you on focus and you have to keep thinking.” While this concept was not as prominent in Carlos’ response he did say, “...things don’t make much sense unless I can see it.” Doug discussed how important images were when reading a page of text. “I actually look at the pictures first,” he stated. “I feel like the pictures are really helpful because pictures tell you a lot more than the textbook sometimes.”

One of the final concepts regarding learning style that was notable for the nonverbal subjects was that of recognizing the use symbols and metaphors in graphic novels and at times textbooks. All three of the students recognized the use of symbolism and metaphors. John even compared the visual symbolism in the graphic novel to the use of metaphors in the book *Animal Farm*, something the students had recently studied in English class.

High verbal subjects. The issue of reading focus impacted the high verbal subgroup to a similar extent as it did for the nonverbal and balanced groups as evidenced in responses during the interviews. Eileen, Joe and Sally both indicated very specific challenges they had when reading standard textbooks and novels for school and for their own pleasure. Russel did not face these issues. As Eileen discussed some of her mind wandering experiences she stated, “A lot of the books I am reading right now have long chapters so it (mind wandering) happens like towards the end of the chapters. I start to kind of lose focus and I have to go back and re-read it a little bit.” To a greater extent Sally also described her focus issue with reading. She said, “I do that a lot (lose reading focus) and it really slows down my ability to get through stuff.” Related to the issue of reading focus, three of the four students in the high verbal subgroup discussed the importance of content and genre as a determining factor in their interest level and thus their ability to stay engaged with reading. In a conversation about the length of time required to read passages Joe mentioned, “The textbook or novel I don’t like often is not really exciting stuff. So for the book I would have to read it slowly to stay focused because I told you I get distracted.” For Sally the genre of the text was very important. She discussed, “I think that books for English are more difficult to keep focus because they are actually stories that you have to keep up with and stuff. I actually think that stuff I read in a textbook...lessons and exercises are easier to handle because they are short and quick.” Interestingly Russel seemed to use his mind wandering and focus loss as a measuring tool. As he described his reading habits Russel stated, “I think I can read non-stop for a couple of hours...I can get through 100 to 125 pages if I really focus. If I do find myself wandering I make the call that this is not the book for me.”

In terms of learning styles the high verbal subgroup discussed some strong tendency to use non-text visuals while learning. All the students in this subgroup made mention throughout the interviews that their learning was at a minimum complimented, if not driven by pictures,

images, and visual representations. As Sally stated, "...like in Spanish (class) it helps a lot and to learn the vocabulary, having the picture with the word helps me learn new ideas." For Joe the images provided a focus. "I read comic books and graphic novels, maybe almost as much as other books..." he said, "it's something different and it keeps me awake and focused." Pressed with a question about whether images prompted his attention while reading Russel concluded, "I definitely look at the pictures first and sometimes when I am looking at the material to review I spend more time looking at the tables and graphs. But if I have to take notes I will just stick to the reading and take my time. It really depends on what the goal of the reading is."

Balanced subjects. For the students in this subgroup there did not seem to be much difficulty with maintaining focus on reading as a whole. While two of the subjects, Brian and Susan, did mention occasional episodes of mind wandering they were able to understand why it happens. Brian stated, "That (mind wandering) happens if I am like reading a book that I am not all that interested in but if it is a book that interests me I just like can't put it down." Susan also added, "Maybe twice in a long reading period I realize I have not actually been reading at all. It (how often) varies depending upon how bothered I am by what's happening in my life. It happens less with pictures."

Across the subgroup there was, again, a strong indication that images and visuals are a central component to the students' learning styles. When questioned about the graphic novel that the students were currently using in social studies class Rhonda replied, "With the pictures it makes it easy to understand. Instead of just reading a bunch of big words that you don't know they have lines with information and the image right there to figure it out. You can see people's reaction, like expressions on their faces and stuff." Susan also agreed that the visuals in the graphic novel helped her learn concepts. More specifically she said, "...every time I try to think what the text is connected to what amendment I will think about the pictures. The pictures will

pop in my head and I will remember based on that.” When asked about how much feels images help him better understand information presented in a book or in class Brian stated, “I think I am about an 8 out of 10.” One of the most consistent themes of learning style for the balanced subgroup was scanning traditional text for bold headings as a first step in their process of reading nonfiction textbooks. In all the subjects’ interviews they described the use of this pre-reading strategy. Brian said, “I usually turn the page and see a word that is in bold, like a heading or vocabulary word. I usually go straight to that...then I go to pictures and little text after that.” Rhonda added, “I’ll look at the titles or if I am looking for an answer I will definitely look at the things around the page like the headings to see where I should be reading.” Sydney brought to light a similar idea that Russel discussed during his interview, reading with purpose. For Sydney the goal of the assignment dictated the attack plan that she employed. “Well,” she began, “It depends if I’m taking notes it’s a little different than if I am just reading it. I read the titles first probably then I skim it and then I go back and read it. If I’m taking notes I read it all and then go back and take the notes.”

The balanced subgroup also conveyed a clear understand and comprehension in the visual literacy skill of symbol and metaphor recognition in their reading. Throughout the interview Brian discussed the use of symbols and metaphors repeatedly. As he discussed reading a novel in his English class he said, “We just read *Animal Farm* and I liked it because it was like what happened in Russia with the communists.” Later he discussed specific images in the graphic novel portraying the three branches of the United States government as a mythological beast. “Yeah... Cerberus. I looked at it differently and I really thought that the government was going out of control, but I thought that showed how everything was really well.” Susan cited the same image from the graphic novel adding, “Yeah I realized that the leash (on Cerberus) was the tenth amendment.”

Observation three. To assist in describing the subjects' interpretation of symbolism and visual metaphors in the graphic novel the researcher felt it helpful to observe an independent reading session. An appropriate period was chosen for this, the third observation, to take place and the researcher established an effective location within the classroom to observe. Both a classroom desktop computer and laptop were loaded with digital timers in order to record start and stop times as students completed a page of the required reading. The independent reading consisted of 12 assigned pages. The researcher was able to record between 7 and 10 timed pages for each student. Entry times that the researcher missed are represented by a value of 0 on the accompanying graphs. Results were reported in seconds per page. The average length of time per page across all the subjects was 112.51 seconds per page and is represented by the dotted line on each graph.

High nonverbal subjects. The nonverbal students were an interesting group to time. As a subgroup their average reading rate was 96.88 seconds per page. This subgroup average is the fastest reading rate when compared to the study group average of 112.51 seconds per page. Results for all three subjects can be seen in the figure below.

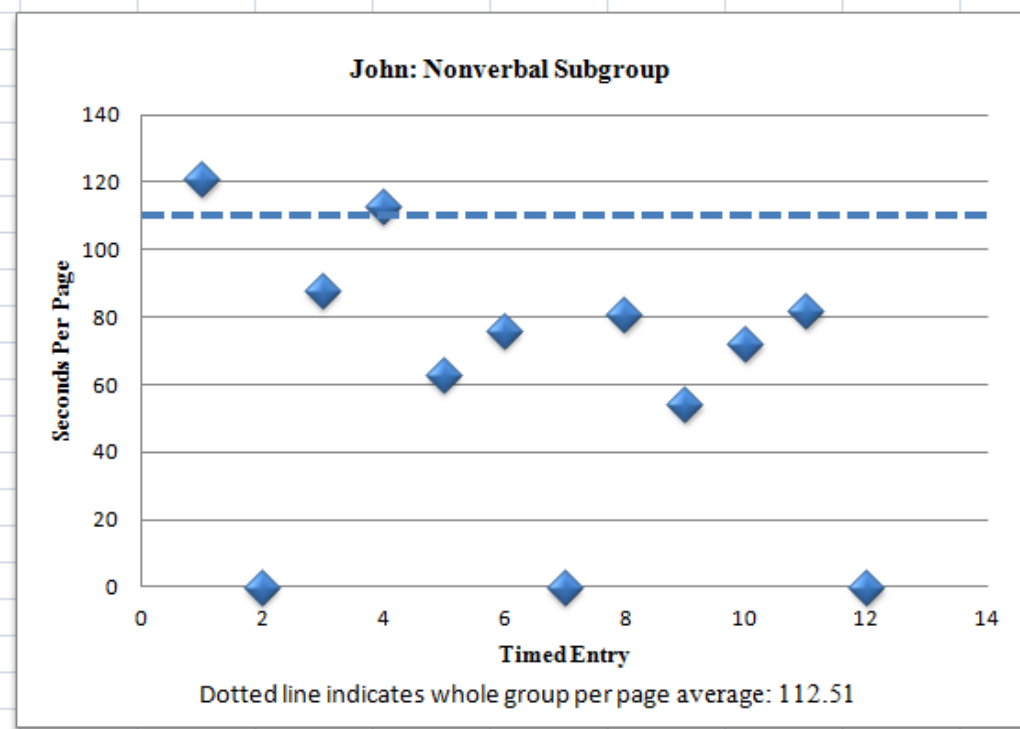
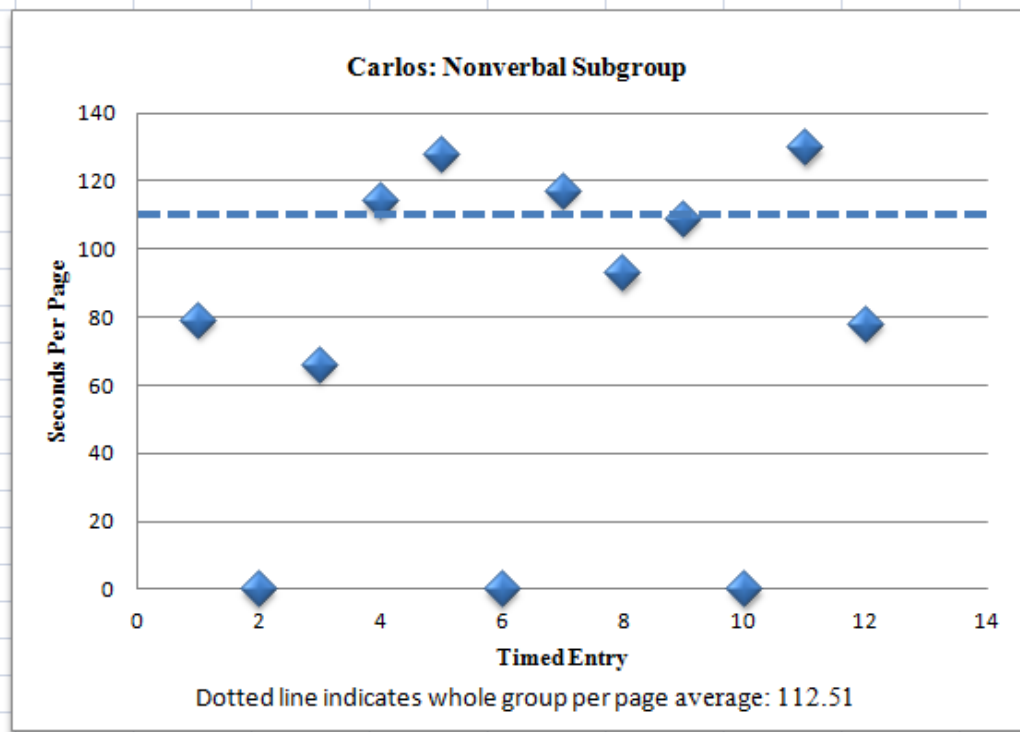


Figure 6. Reading rates for high nonverbal subjects: Carlos and John.

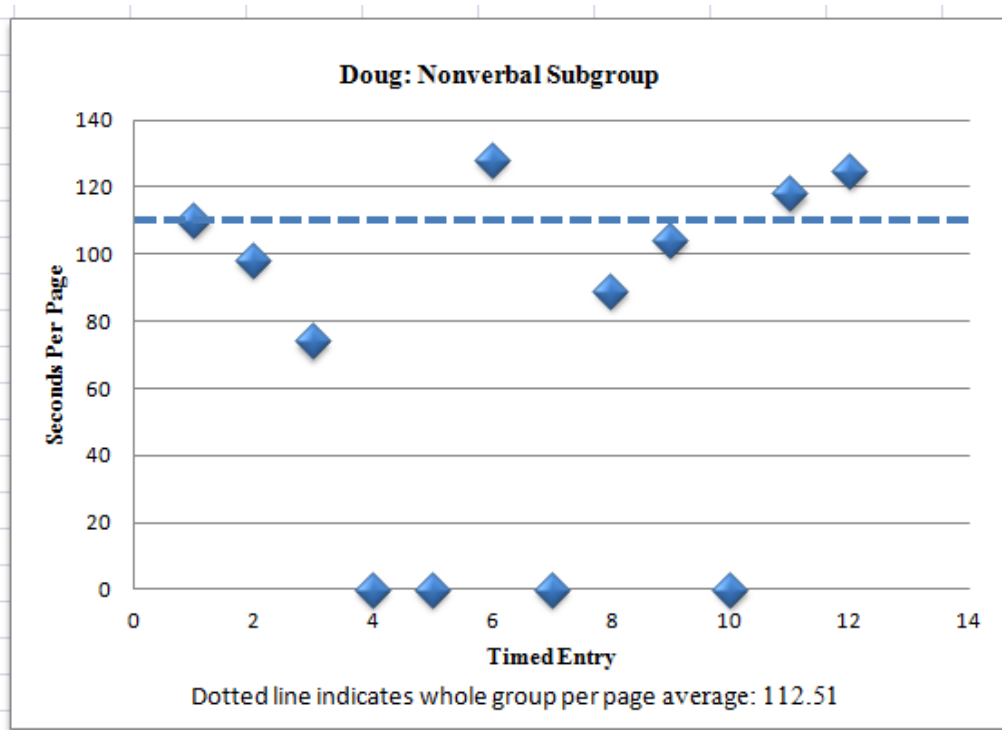


Figure 7. Reading rates for high nonverbal subject: Doug.

Doug, John, and Carlos were consistent readers individually. Doug read the graphic novel pages with an average rate of 105.75 seconds per page, and Carlos read at 101.56 seconds per page. John’s reading rate tended to get faster as he progressed into the reading. He began his reading at the rate of about two minutes per page and ended up at closer to one minute per page. John also had the lowest average rate at 83.33 seconds per page and the fastest reading of any one page at 54 seconds.

High verbal subjects. Generally speaking the high verbal subgroup read the assigned pages in this third observation quickly. Of the four students in this subgroup, three of them had average reading rates of about one minute to thirty seconds per page. Results for all four of the students can be seen in the following figure.

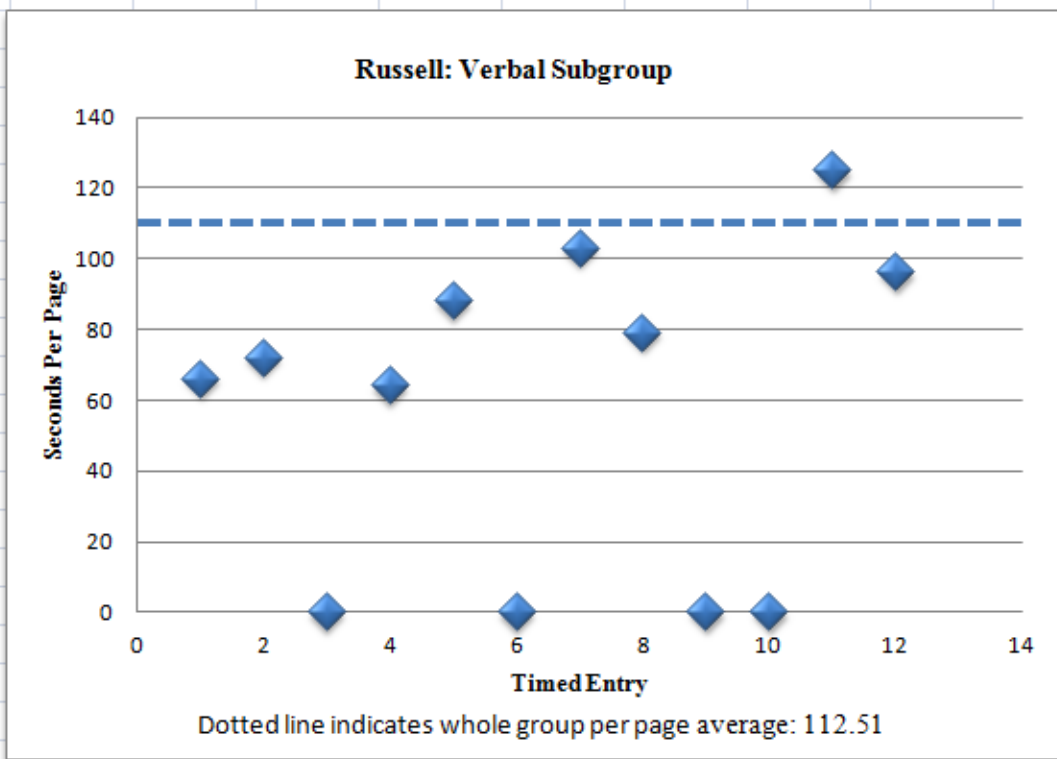
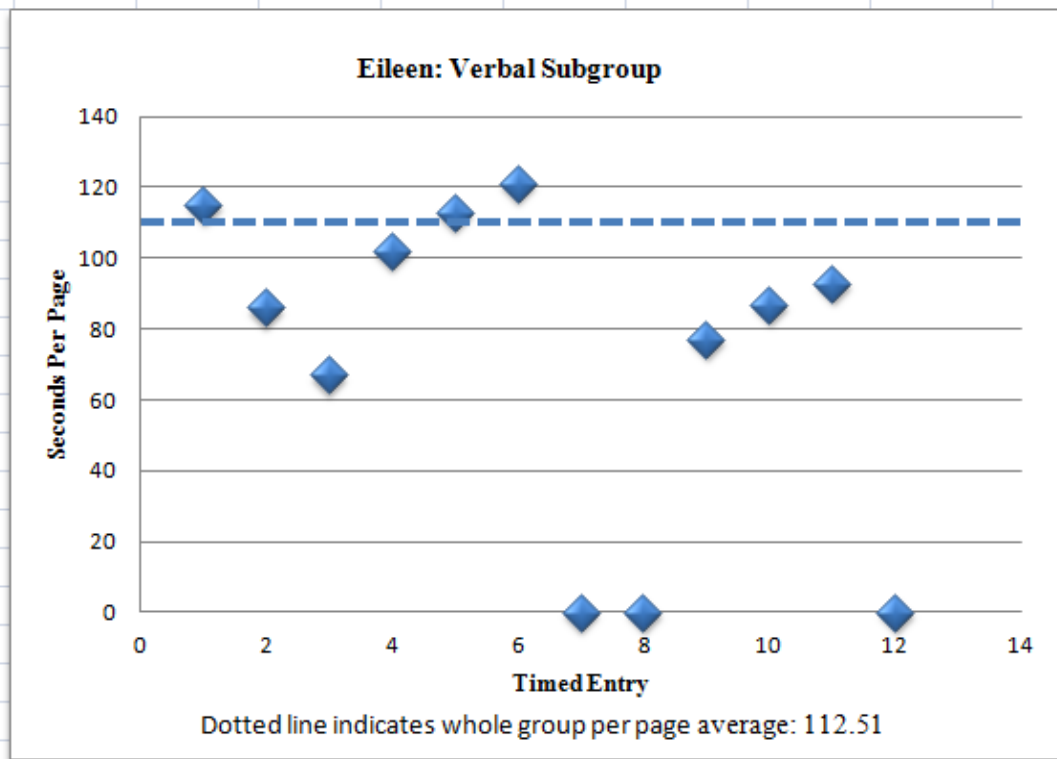


Figure 8. Reading rates for high verbal subjects: Eileen and Russell.

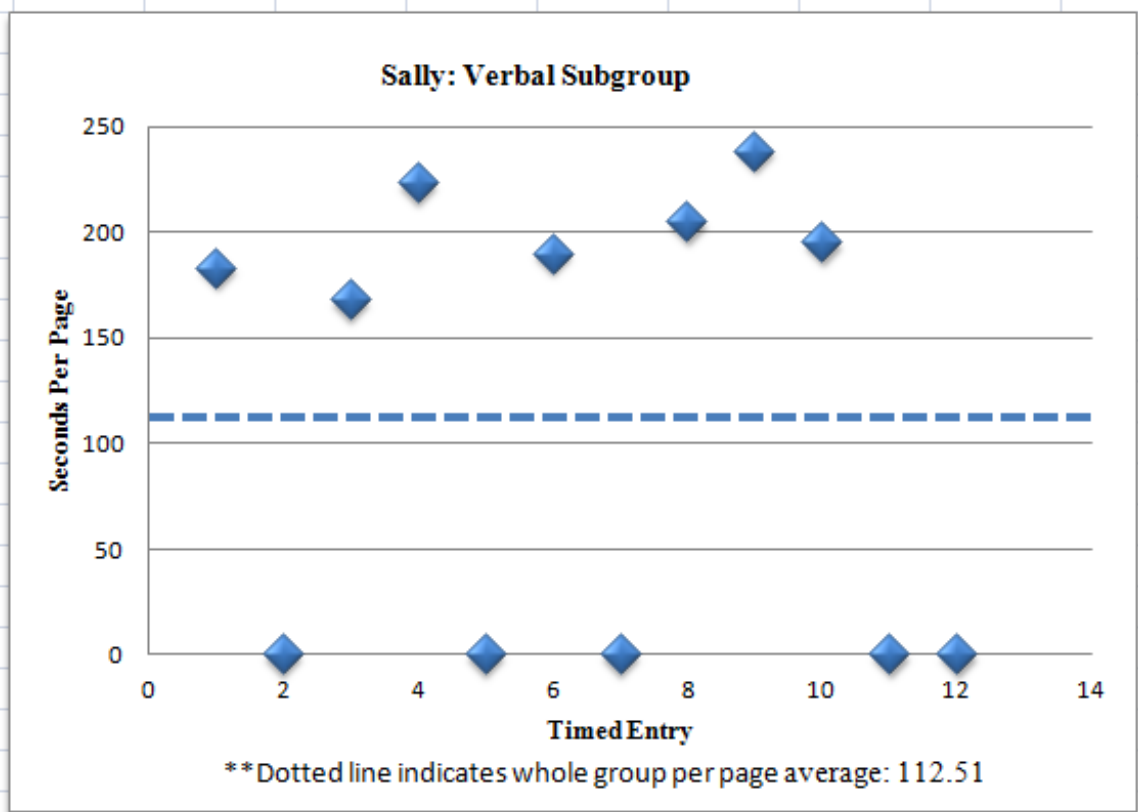
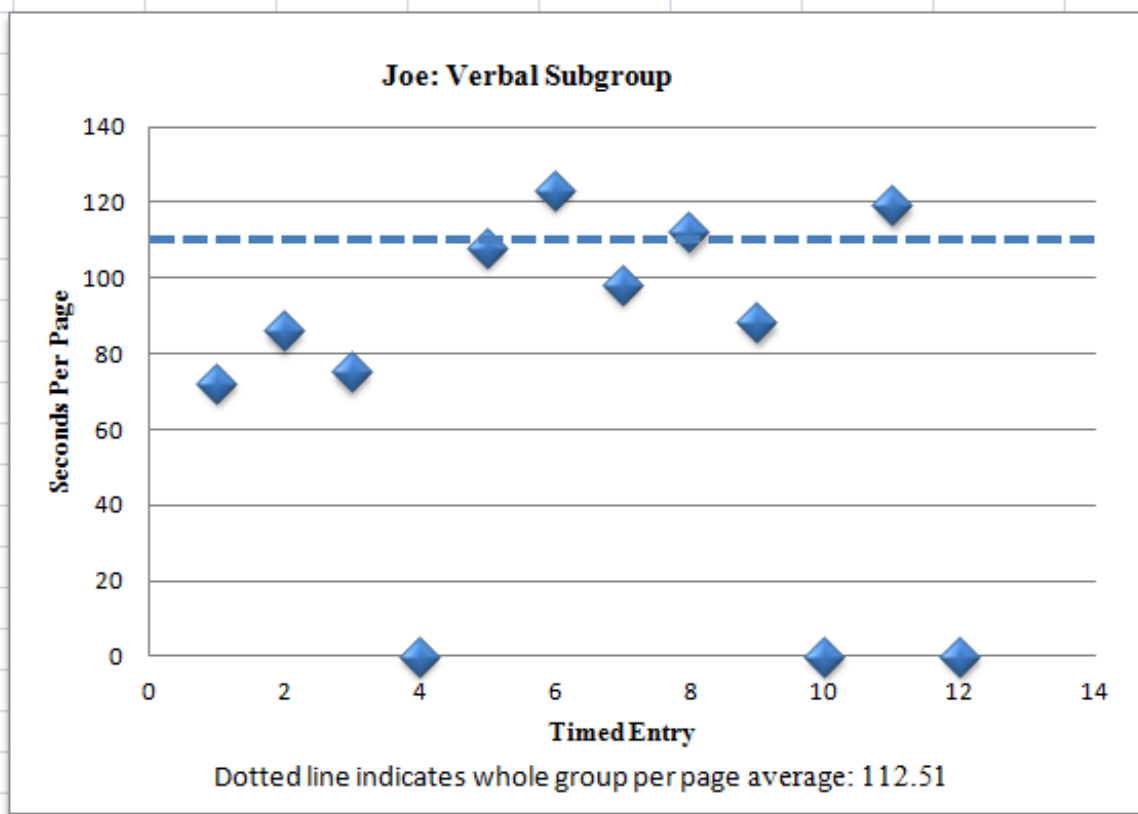


Figure 9. Reading rates for high verbal subjects: Joe and Sally.

As seen in the previous figures Joe, Russel, and Eileen had reading averages that were below the study group's average. Russel's average rate of 86.63 seconds per page was the second fastest in the study. Of particular note in this subgroup is Sally's reading rate. At 200.23 seconds per page Sally represented the slowest reading rate of all the students. Sally spent roughly 3 minutes per page during this independent reading period and it should be noted that her times did not trend upward, but remained consistent from start to finish. Sally spent the entire period reading, finishing in the last minute of the class period with her 10th registered time entry.

Balanced subjects. The balanced subgroup had some interesting qualities to their reading rates. Rhonda, Sydney, Susan, and Brian presented as deliberate and well paced readers with one exception during Sydney's observation. Results for all four of the subjects can be seen below in the following figures.

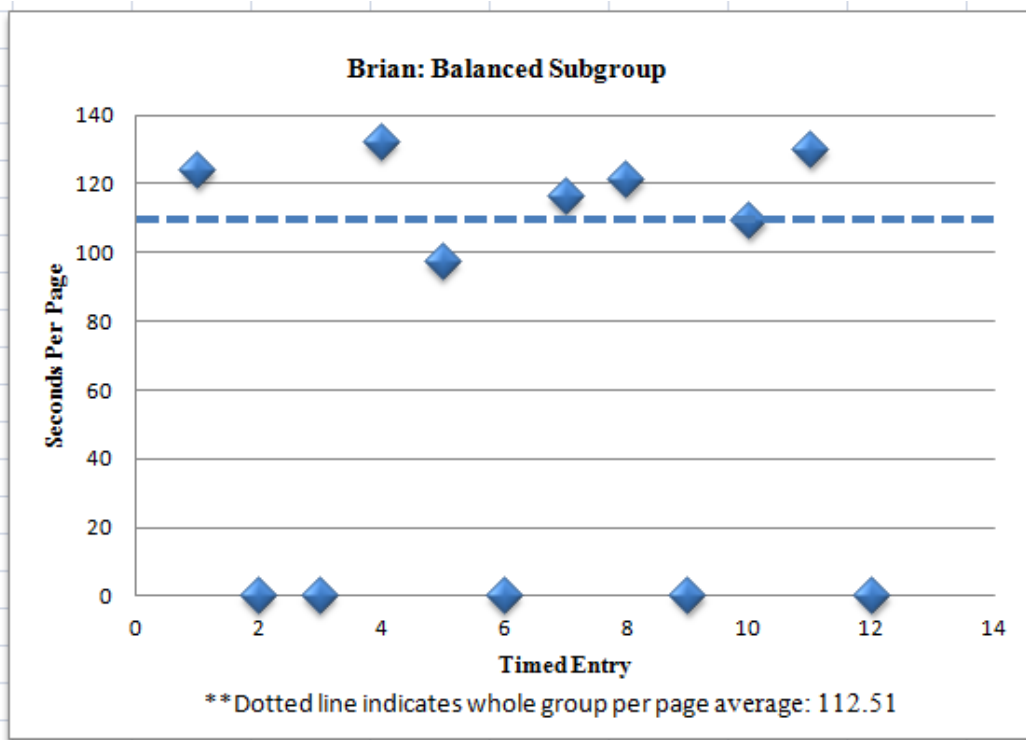
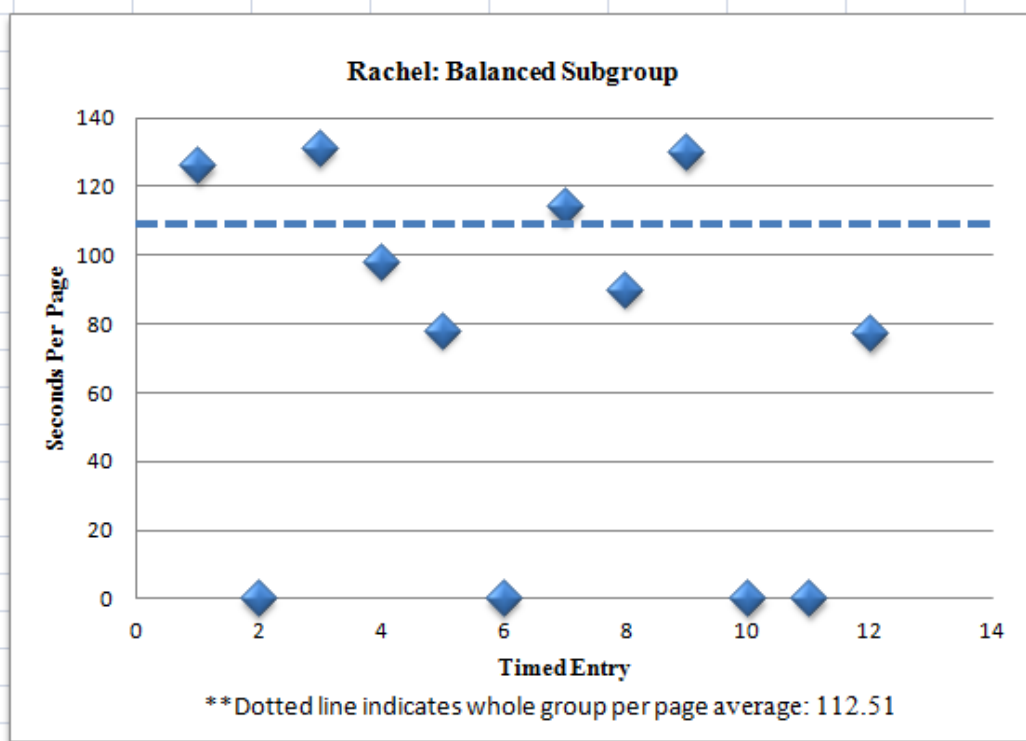


Figure 10. Reading rates for balanced subjects: Rachel and Brian.

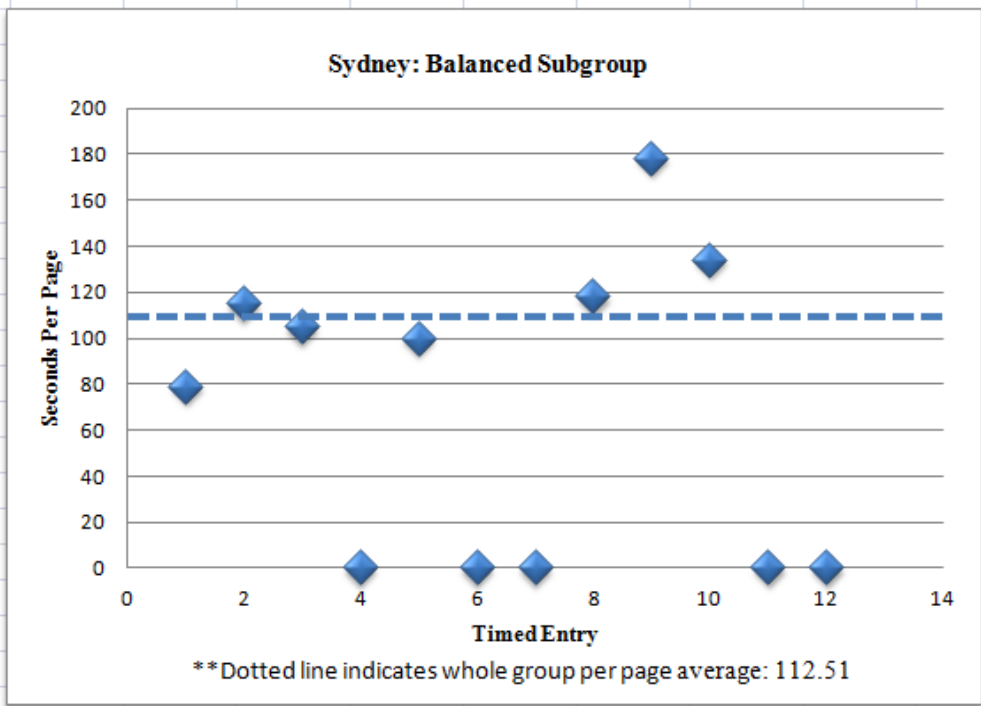
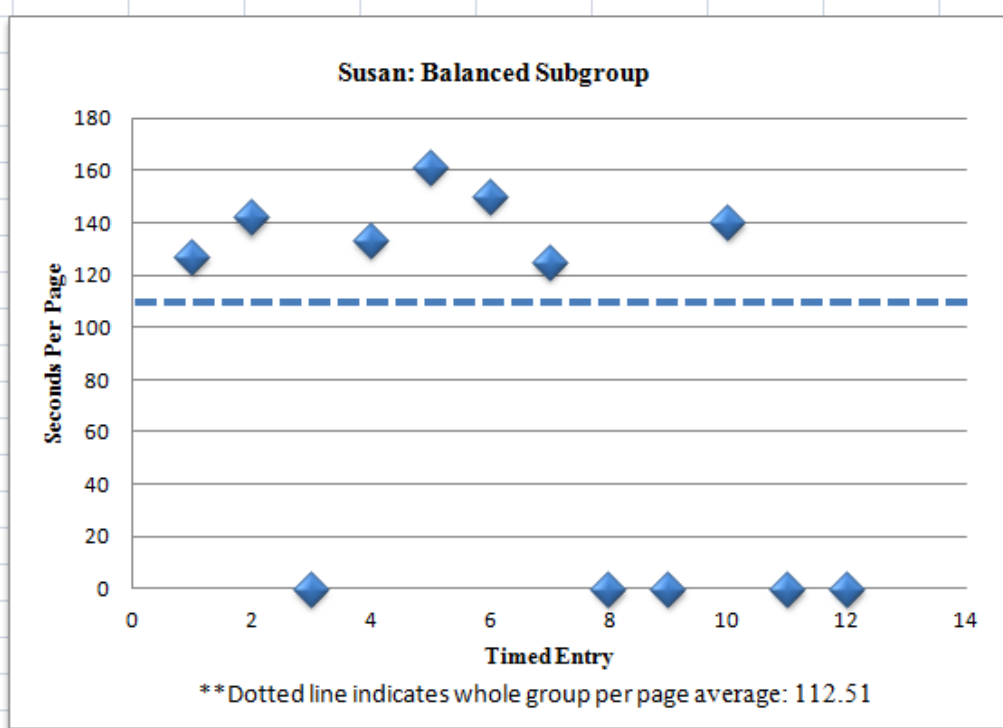


Figure 11. Reading rates for balanced subjects: Susan and Sydney.

As shown in the figures Sydney had the highest discrepancy between her timed entries with her first page taking only 79 seconds and her 9th entry taking 178 seconds. Conversely both Brian and Susan read with tremendous consistency having a range of only 35 and 36 seconds in their reading rates respectively. In her subgroup Susan was the slowest reader and second slowest within the study with an average time of 139.71 seconds per page.

Work sample three. In an effort to analyze discrete visual literacy skills a third work sample was collected. The work sample was a class activity sheet that was completed independently. It consisted of 10 sets of panels from the graphic novel, each addressing a different amendment from the Bill of Rights. In each set of panels one, two, or three phrases of text have been eliminated, forcing the student to create the missing dialogue or narration based on the images and limited text. To establish a comparative structure the researcher scored students on three areas of visual literacy. Scoring for each student utilized elements of the Student Work Rubric (see Appendix G). The three skills addressed were decoding expression, symbol and metaphor recognition, and authority independence. Decoding expression is the student's ability to accurately identify and interpret facial and/or body expression in the panels of the graphic novel. Symbol and metaphor recognition measures how well the student can accurately identify and interpret those meanings and messages represented in the pictures of the graphic novel. Authority independence is the ability for a student to bridge meaning in the graphic novel when explicit information in text or images is withheld.

Results indicated that the study group average score on decoding expression was 16.47 out of a possible 28 total points. The average for the group on symbol and metaphor recognition was 14.99 out of a possible 28 points. Authority independence was scored out of a possible 36

points and the group average was 19.52. To provide a framework and depth to the findings these data points and specific student responses will be examined.

High nonverbal subjects. The nonverbal subgroup performed well on this work sample scoring higher than the average in all three areas of the grading rubric. While all three of the students did solid work in identifying and interpreting the images and text, Doug did exceptionally well.

In the area of decoding expression Doug's average score was 19.0, as compared with the subgroup average of 16.67 and the study group average of 16.47. Doug also exceeded the average scores on symbol and metaphor recognition as well as authority independence. The example below is Doug's responses to the question dealing with the Ninth Amendment of the Constitution. The Ninth Amendment stipulates that the creation of certain rights does not disqualify or exclude other rights not mentioned. Doug demonstrates strong authority independence by creating text that matches the overarching concept of the Ninth Amendment stating, "There is no mention of this...but it doesn't mean we don't have those rights." This can be seen in the following figure.

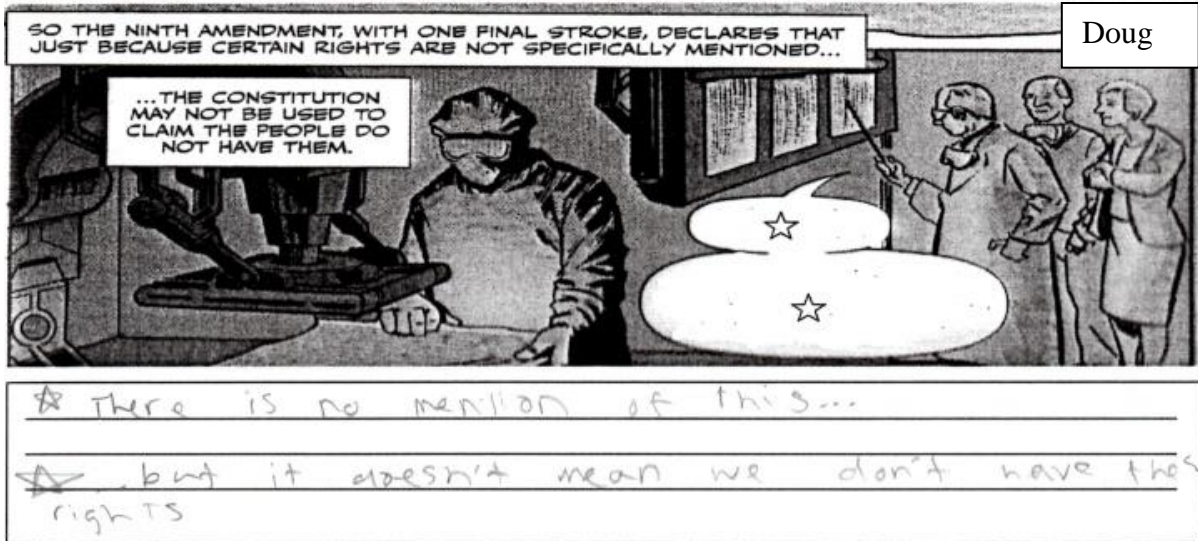



Figure 12. Student work sample with graphic novel comparison: Doug.

Further comparisons can be seen when we examine Doug’s response to Carlos, a fellow nonverbal subgroup student who takes the same question regarding the Ninth Amendment, but fails to bridge the appropriate meaning. Instead Carlos writes, “We don’t have rights...Yes we do have right(s).”

SO THE NINTH AMENDMENT, WITH ONE FINAL STROKE, DECLARES THAT JUST BECAUSE CERTAIN RIGHTS ARE NOT SPECIFICALLY MENTIONED...

Doug




★ There is no mention of this...

★ ...but it doesn't mean we don't have those rights

SO THE NINTH AMENDMENT, WITH ONE FINAL STROKE, DECLARES THAT JUST BECAUSE CERTAIN RIGHTS ARE NOT SPECIFICALLY MENTIONED...

Carlos

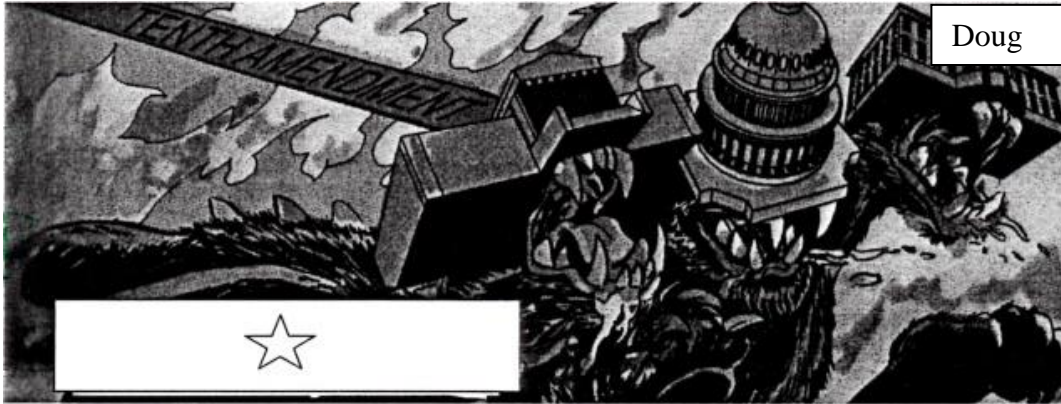


★1- we don't have rights

★2- yes we do we have right!

Figure 13. Comparison of student work samples: Doug and Carlos.

Symbolic representation and facial expression were also areas Doug scored relatively well in. In the example below the Tenth Amendment is addressed. The Tenth Amendment allows states to have powers that are not prohibited by the Constitution and not given already to the federal government. In this way the powers of the federal government are controlled. In the example figures we see again how Doug appropriately provided the missing information writing, “We don’t have all power – gov (government)...Tenth Amendment restrains gov.” The use of the word “restrains” clearly demonstrates Doug’s understand that the monster Cerberus is wild and aggressive. The representation of Cerberus with three symbolic heads for each branch of government was also clear. His peer Carlos, however, did not interpret the meaning accurately. Carlos stated, “Not all rights are on here.” These statements and details can be seen in Figure 14.



Doug

"We don't have full power gov.
Tenth Amendment restrains gov."



Carlos

Not all rights are on here



Novel

Figure 14. Comparison of student work samples with graphic novel: Doug and Carlos.

High verbal subjects. The verbal subgroup took into account only three completed sets of answers from Eileen, Ryan and Sally. Due to a prolonged absence Joe's work was unable to be scored. The three work sample averages for this subgroup were representative of the larger group. The verbal subgroup average score for decoding expression was 16.0 while the whole group average was 16.47. Average subgroup score was 16.0 for symbol and metaphor recognition while the study group average was 14.99. Authority independence average for the verbal subgroup was 19.25 while the whole group average was 19.52. With no one student demonstrating any strengths or weaknesses in their scores it is worth noting that Sally had the highest scores on each of the three targeted skill areas and warrants reviewing some of her responses.

The figures below come from the example dealing with the Fifth Amendment. The use of decoding facial recognition was the primary skill needed to provide the missing dialogue and using authority independence was a secondary skill needed. Sally did a nice job providing information that addressed facial expressions by writing, “We’ll do whatever we feel like doing.” This can be seen in the final panel with the scowling faces of the agents. Sally also targeted the overarching concept of constitutional rights in the first altered panel writing, “You can’t take me away! It’s my right! It’s protected by the Fifth Amendment.”

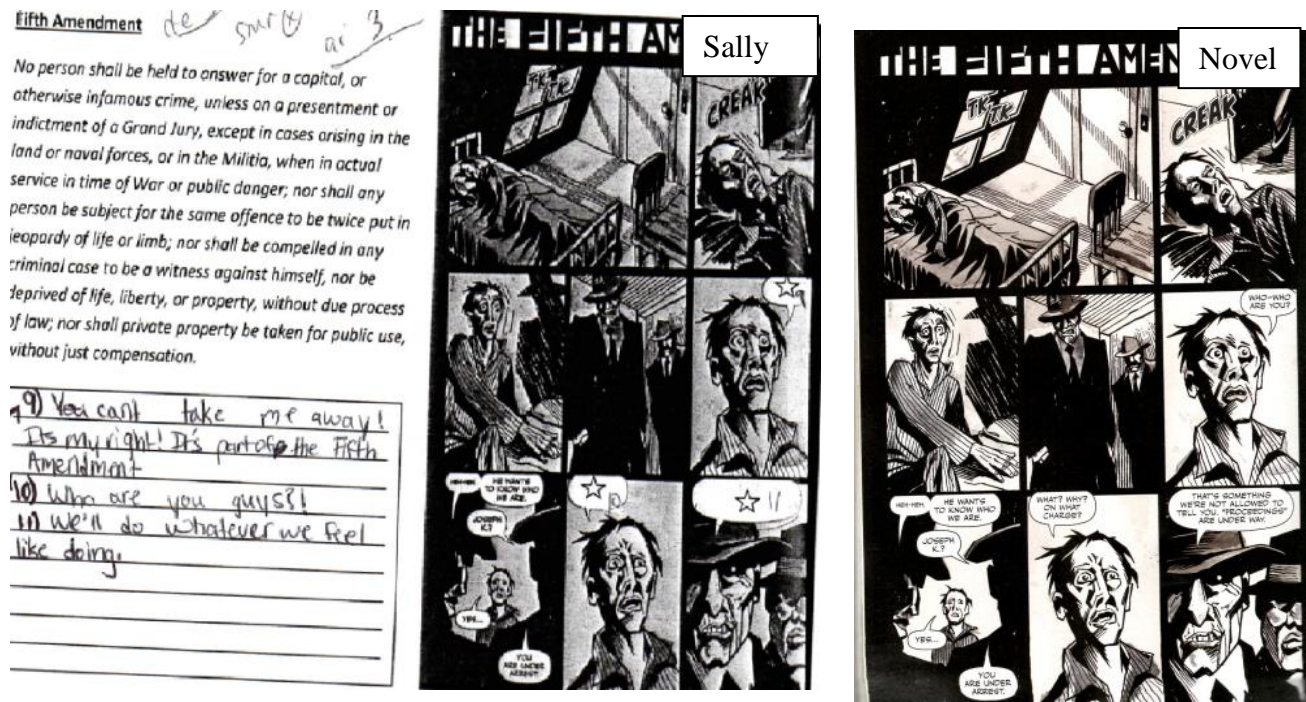


Figure 15. Comparison of student work and graphic novel: Sally.

Sally continued to demonstrate the ability to use authority independence and symbolic recognition in examples like the one below addressing the Ninth Amendment. Here Sally restates some given information but does so with slight changes that indicate she grasps the meaning. Conversely we can see from Russel’s response to the same panel how interpretation can get lost as he writes, “There doesn’t seem to be anything here...The people don’t seem to have anything.”



Figure 16: Comparison of student work samples and graphic novel: Sally and Russel.

Russel does however demonstrate to bridge the missing information and use symbolic cues within the panels as he demonstrates in this example below. Here Russel clearly and accurately supplies the missing content by writing, “(...Distrusted most were) Mercenary who had no care for them...(they did not represent)the people.”

Second Amendment

A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

Russel

AS WE HAVE SEEN, BEFORE THERE WERE POLICE FORCES OR A MILITARY...

...THE MILITIA WAS AN INSTITUTION IN SOCIETY. ITS MEMBERS ORGANIZED TO PROTECT THEIR FARMS AND TOWNS. THEY WERE NOT VIGILANTES.

THEY WERE ARMED CIVILIANS WITH VESTED INTERESTS IN THEIR COMMUNITIES.

WHAT AMERICANS (AND BEFORE THEM) DISTRUST AND ANYONE BUT THOSE WHO PAID THEM.

THEY DID NOT REPRESENT

1 - Mercenary who had no care for them
2 - The people

Novel

AS WE HAVE SEEN, BEFORE THERE WERE POLICE FORCES OR A MILITARY...

...THE MILITIA WAS AN INSTITUTION IN SOCIETY. ITS MEMBERS ORGANIZED TO PROTECT THEIR FARMS AND TOWNS. THEY WERE NOT VIGILANTES.

THEY WERE ARMED CIVILIANS WITH VESTED INTERESTS IN THEIR COMMUNITIES.

WHAT AMERICANS (AND BEFORE THEM) DISTRUST MERCENARIES, GUNS FOR COMMUNITY TIES AND NO LOYALTY TO ANYONE BUT THOSE WHO PAID THEM.

THEY DID NOT REPRESENT THE PEOPLE.

Figure 17. Comparison of student work and graphic novel: Russel.

Balanced subjects. As a subgroup the balanced students appear to maintain subgroup averages for the three visual skills that are lower than the other two groups. Generally low average scores for Bobby and Samantha brought the subgroup averages down slightly, however Susan represented the highest average scores across the entire study group. With average scores 8 to 10 points above the study group average, Susan's responses warrant a good deal of examination.

Susan's responses were consistently elaborate and insightful. In the example below information is needed regarding the First Amendment and freedoms of speech. Students are required to use all three visual literacy skills to develop appropriate responses. The images in the following figure incorporate symbols of violence and hate which assist in developing meaning for the different types of unacceptable speech in society. Susan provides detailed responses like the one regarding inflammatory speech when she writes, "...meant to set severe anger and untrue prejudice about certain people or peoples in order to cause further anger from others." In the one dialogue box intended to reflect aggressive and hateful intentions Susan writes, "You and your kind deserve to burn."

Susan



- 1) ... meant to set ^{severe} anger & untrove prejudices about certain people or peoples in order to cause further anger from others.
- 2) meant to publically embarrass or target a person/persons with information that may or may not be true.
- 3) You & your kind deserve to burn, etc.
- 4) Words filled by anger & prejudices without reason.

and Amendment

Novel



Figure 18. Comparison of student work and graphic novel: Susan.

In the second example below the Sixth Amendment right to a speedy, fair, and public trial is addressed. Here Susan applies the information given in both text and symbolic form to arrive at a very accurate and appropriate answer for the missing content. In the context of a drive-through restaurant Susan has the voice on the speaker from inside stating, “The trial of John Smith will now be held. The verdict will be announced soon.” In response the gentleman depicted in the car says, “But what’s really happening?” Susan creates a feeling of frustration that this trial is not public, a central tenant in this amendment of the Constitution. Conversely Brian ineffectively interprets the meaning of the panels, referring to age restrictions. “Your child is not in the age limit to eat here,” he writes in the first dialogue bubble. While Brian demonstrates some ability to decode facial expressions by have the gentleman in the picture respond aggressively saying, “No fair,” it is simply too watered down an answer to take any interpretive meaning from. This can be seen in Figure 19.



1: Your child is not in the age limit to eat here
 2: No fair!



1) "The trial of 'John Smith' will be held now. The verdict will be announced soon."
 2) "But what's really happening?"



Figure 19. Comparison of student work and graphic novel: Susan and Brian.

As more of Susan’s responses were examined she continued to demonstrate great ability to decode expression, recognize symbolism and metaphors, and bridge the missing information in the graphic novel panels. In the examples below Susan first interprets the three-headed Cerberus illustration accurately. Susan writes, “Sometimes the government(s) are like animals attempting to take as much power as possible. The Tenth Amendment prevents them from going out of control and keeping the people satisfied.” Here the recognition of the tenth amendment “leash” is clear, as well as the interpretation of the three branches of government behaving aggressively.

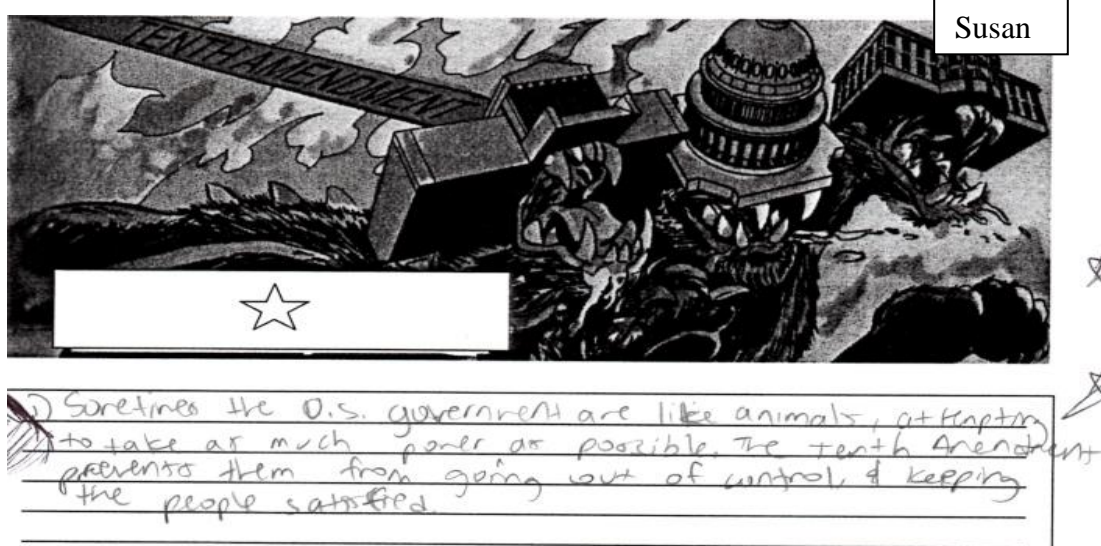


Figure 20. Comparison of student work and graphic novel: Susan.

When Susan completes the work related to the Ninth Amendment she again provides dialogue that is appropriate. The amendment basically states that just because certain rights are not addressed, the Constitution cannot be used to say that people don't have these rights. In Susan's panels the doctor states, "And this is a right not mentioned in the Constitution... and this is one too...and this one...and this one. The Ninth Amendment ratifies all these really."

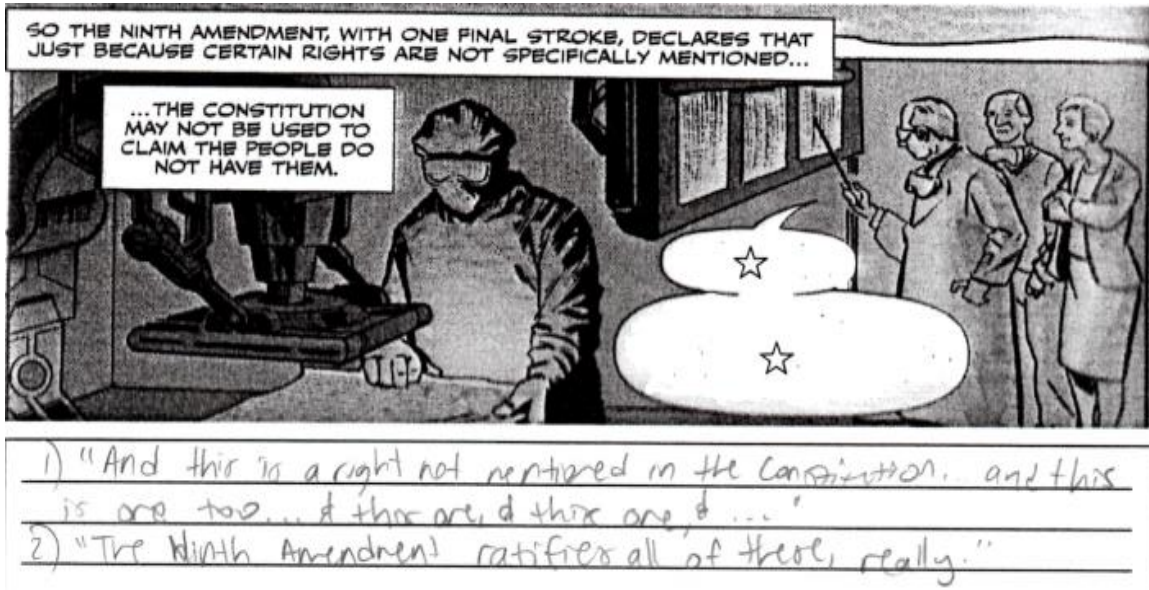


Figure 21. Comparison of student work and graphic novel: Susan.

While Susan's information does not reflect this complicated concept entirely, a discussion with her small student group on the day she handed in this assignment shows great visual acuity and reasoning. On the same page as the doctor office panels above addressing the Ninth Amendment is the series of panels introducing the Ninth Amendment. Each time the graphic novel introduced a new amendment the author would display a banner across the top of the panels like the ones below. The images in Figure 22 portray this. The third image in Figure 22 is the panel and banner for introducing the Ninth Amendment.

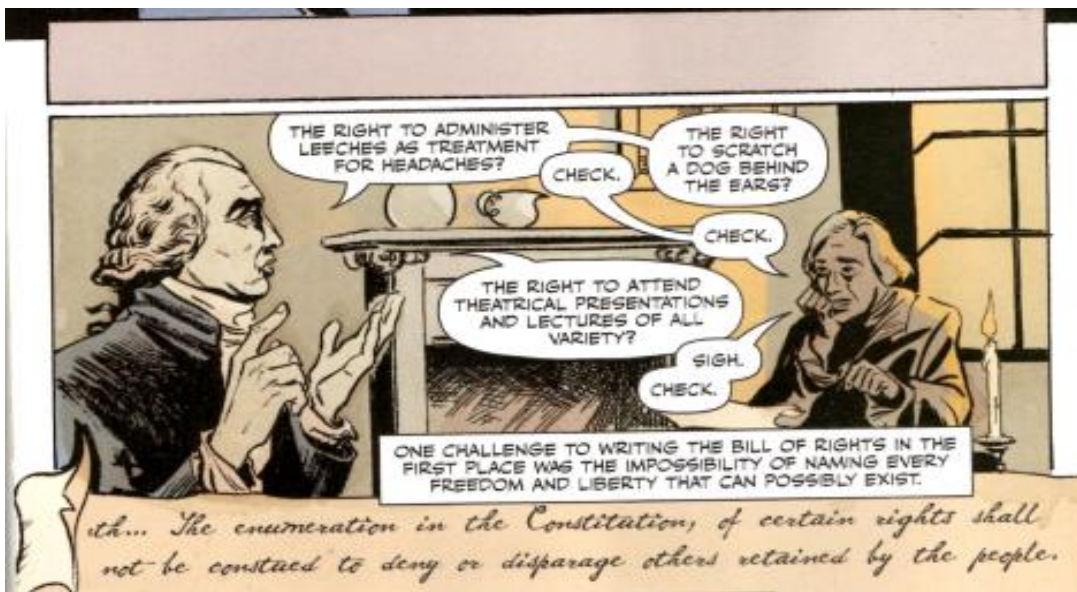


Figure 22. Panels of graphic novel showing introductions of amendments. Note the absence of the intentionally omitted Ninth Amendment.

For most students, and adults, the subtle absence of the words “The Ninth Amendment” would be missed, overlooked, or chalked up to careless misprinting by the publisher. As class was concluding the day the assignment was due Susan approached another girl in her work group. With the book open to the page containing the Ninth Amendment panels she asked, “Hey isn’t that cool! They left the title off the box where it is suppose to say, ‘Ninth Ammendment’. Get it?” As her friend looked at the page puzzlingly Susan continued, “The Ninth Amendment talks about stuff that’s not written down in the Constitution. Isn’t that funny? Nothing is written there!” While it is still unclear if her friend understood the cleverness of the illustration, Susan clearly did.

Section summary: Research Question One.

High nonverbal subjects. The nonverbal subgroup demonstrated some clear strengths throughout the numerous data collection procedures employed to address Research Question One: How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?

In both of the first two observations Doug, Carlos, and John proved to be highly engaged readers. They were active and excited about the reading of the graphic novel, examining the contents of unassigned pages and exploring images found within the book.

Collapsed scoring data from the first two work samples indicated that both Doug and John scored above the study group average for symbol and metaphor recognition. This skill was addressed again in the interview sessions when all three nonverbal subjects indicated a strong awareness and recognition for symbolism and metaphors in their everyday reading both in pictures and through text as demonstrated by John’s reference to *Animal Farm*. In the third work sample that scored recognition of symbolism as well as authority independence and decoding

expression Doug, Carlos, and John all scored above the study group average in each of the three areas.

All three students discussed mind wandering as an issue they dealt with while reading traditional texts. All three also noted that images within textbooks grab their attention first and helped provide focus and structure, more than scanning headings or reading the text. John explained further that he believed the images in graphic novels keep him engaged in the same way that taking notes from traditional texts also keep him from losing focus.

The nonverbal subjects were the fastest readers when timed in the third observation. Interestingly both Doug and Carlos noted in their interviews that they felt reading a graphic novel required more skill and was more challenging yet both their average reading rates fell below the study group average. John, however, who felt that textbooks were more of a challenge for him may have validated his assumptions by having the fastest average reading rate of the study group as well as the fastest individually timed page at 54 seconds.

High verbal subjects. The verbal subgroup was comprised of two girls and two boys that collectively trended towards certain indicators in the study. Conversely some data collected pointed out unusual and notable results for an individual student. As one might predict from students with a relative high verbal OLSAT score Eileen, Russel, and Joe all loved to read, describing themselves as avid readers. Sally however did not, describing herself as a reluctant reader.

Throughout the first two observations Eileen, Russel, Joe, and Sally presented with varying degrees of enthusiasm and energy. While Russel and Sally were quite animated and involved with volunteering, Eileen and Joe were more reserved. All students participated in activities and cooperative work.

Initial review of work samples one and two indicated that the verbal subgroup had the lowest average score for recognizing symbols and metaphors. In work sample three symbol and metaphor recognition as well as authority independence, and decoding expression are scored. In this sample the verbal subgroup actually scored very consistently when compared to the study group averages on all three skill areas.

During the interview sessions all the verbal subjects except Russel indicated that loss of focus and mind wandering were an issue for them. For the same three subjects, Eileen, Sally, and Joe they all indicated that the content and genre of the book was the most important factor in maintaining focus with the book as opposed to images or tasks like note taking. Joe, Russel, and Eileen noted that when beginning reading from a textbook they start with the text itself after a quick visual scan of the page. Further discussions did find that each of the students admitted images were very helpful and an important part of understanding school reading material.

When reading rates were taken during the third observation Eileen, Russel, and Joe have average reading rates that were close to or just below the study group average. Interestingly each of these students had a differing view of how difficult it was to read a graphic novel. Eileen felt that a graphic novel required more skill to read while Russel believed that it took more skill to read a text only book. Joe acknowledged the additional factor of content stating that the complexity of the content would dictate which was more difficult. Sally felt that the graphic novel required more skill due to all the analysis one would undertake when looking through the images. Sally demonstrated this care not only through the observation field notes, but through her reading rate. Sally had the slowest reading rate of all subjects in the study, almost twice as slow as the others.

Balanced subjects. Of the four subjects in the balanced subgroup Brian, Sydney, and Susan all described themselves as avid readers who would read for long stretches of time.

Rhonda, in addition to having only a moderate enjoyment for reading, also portrayed a moderate level of involvement and enthusiasm during the first two observations. While she was engaged and efficient her affect and energy level did not match that of Sydney, Susan, and Brian. While Brian did seem to have a quiet first observation all three students were excited to read the graphic novel and genuinely eager to participate in class activities.

Results of work samples showed some skill inconsistency as a subgroup. When work samples one and two were scored it showed that the balanced subgroup had the highest average score for symbol and metaphor recognition. Susan was the highest study group average score by 10 points. When the third work sample was scored for symbol and metaphor recognition, authority independence, and decoding expression the balanced subgroup actually had the lowest subgroup average for symbol and metaphor recognition, yet Susan again had the highest average across the study group. As a group the balanced students did fairly well with decoding expression.

Interviews showed that the balanced subgroup did not have much issue with mind wandering and focus. Nonetheless images and visual reinforcement was important to all the students in this subgroup as they discussed strategies and preferences for reading traditional texts. Three of the students indicated that when beginning a textbook they will often scan reading for visual pairings to content and for bold headings more than looking at text first or images first. Sydney echoed earlier sentiments that she found reading with a purpose allowed her to maintain focus.

The balanced subgroup recorded very consistent individual reading rates. The subgroup as a whole read at an average rate slower than that of the study group average of 112 seconds per page. It should be noted that Susan, our subject who thusfar has performed consistently high on

symbol and metaphor recognition and other visual skill related tasks had the second slowest reading rate among the entire study group at 139.71 seconds per page in the graphic novel.

Research Question Two

Research Question Two: What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?

Survey responses and individual interviews. Individual interviews were conducted in the manner described in the methodology and addressed Research Questions One, Two, and Three. The information pertaining to Research Question Two will be presented here as described in this chapter's introduction. Interview coding yielded both specific codes and generalized themes which will both be addressed within this section. The two generalized themes are reading attitude and graphic novel attitudes. Survey responses were collected in the manner described in the methodology and addressed Research Question Two. These responses also provided data for background descriptions of the subjects. Data collected from both sources contained responses regarding subjects' general reading preferences as well as graphic novel attitudes to explore differences and similarities previously determined by learning profile subgrouping using the OLSAT. To allow for a holistic discussion of the individual subjects that moves from general reading to specific graphic literature the data has been collapsed.

High nonverbal subjects. The nonverbal subjects in this study described themselves as readers ranging from Doug, an avid reader, to Carlos, a capable but reluctant reader. John placed himself between these two as someone who enjoys a good book to pass the time away. As previously mentioned Carlos, John, and Doug find that breaks are needed during long stretches of reading. Mind wandering and losing focus become an issue for all three students.

Reading attitude was explored in the individual interviews. Both genre and content emerged as significant factors. John was perhaps the most definitive and stated about his

preference for genre. When asked how to describe a good book he answered, “Well, I like nonfiction a lot, like even stuff like modern nonfiction.” Numerous times throughout the interviews John kept referencing factual and nonfiction styles of writing as a strong preference for him. One of the more interesting connections John made occurred during a member checking session as John’s responses were being reviewed about symbolism in the book *Animal Farm*. He stated, “Even those fictional stories like *Animal Farm*, I like them a lot as long as I can see the real life stuff, the stuff that relates to more factual nonfiction in them.” Doug cited the storyline as being important for him. He stated, “I think I actually move easier through *To Kill a Mockingbird* because I can get into the book more because there is a story.” Carlos expressed similar sentiment about storyline, but continued by adding his interest in nonfiction was content specific saying, “I like *Animal Farm* and reading English stuff. Factual books are cool. I like sports books but if the topic doesn’t interest me I’m not going to read it, I’m not going to read anything like genetics.”

All three of the nonverbal students had a respectful opinion of graphic novels specifically. When asked in the survey whether an all-text textbook or a graphic novel required more skill to read Doug thoughtfully replied, “I believe reading a graphic novel takes more skill than reading an all-text novel. While in an all-text novel you only have to have the skill to read, in a graphic novel you have to have the skill to read the text but also read the images and symbolism.” Doug’s healthy regard for graphic novels also emerged during the interview session as he indicated, “To carefully break down the pictures’ meanings it would or could take longer. If you rushed it either would be fast!” Carlos also acknowledged the time needed for both styles of reading by stating, “It could be about the same. More words takes a long time to think about, but analyzing pictures can take a long time if you know what you’re doing.”

All three students felt that there were classes in school where a graphic novel could be useful including social studies. Additionally John and Doug believed science was another class that could benefit from using the graphic novel. Interestingly Doug felt mathematics was a third class he could see them being used.

Verbal subjects. As mentioned earlier all of the verbal students in the study described themselves as avid readers with the exception of Sally. Sally stated that she was a capable but reluctant reader. Not surprisingly when the survey asked about losing focus during reading long passages Sally was also the only student in the subgroup that indicated she needed breaks from reading often and had to go back to reread passages. Joe, Russel, and Eileen needed no breaks and typically would read 30 to 60 or more minutes a night for pleasure.

During the interview sessions Joe, Russel, and Eileen all indicated that they had a genre preference for fiction. For Joe his preference was science fiction and fantasy, yet for Eileen her preferred reading was in her words, “realistic fiction.” Sally’s results were a bit more complicated. Initially it seemed as though Sally had a preference for nonfiction. As she said during the interview, “I actually think that stuff I read in a textbook like science and stuff, ya know lessons and exercises are easier to handle because they are short and quick.” Later she stated, “My mom says I always pick up creepy books...but I think it is interesting like adventure and exciting things, fiction or fiction based on fact.” Similarly Joe, who stated his personal preference was for science fiction and fantasy, shifted his answer when the interview question was geared towards school reading. He stated, “I tend not to like the book *To Kill a Mockingbird* that we read for language arts class. I don’t like historical fiction and you know realistic fiction stuff... I like the graphic novel for social studies because it’s different...I like to read stuff I choose. I don’t like having books given to me.” What emerged here could suggest that when

limited to only school readings a student's preference of reading could differ from their own choice. This topic will be further discussed in Chapter Five.

When the focus was turned towards graphic novels the verbal students had varying opinions as to whether a graphic novel or all-text book like a novel required more skill. Both Sally and Eileen felt that the graphic novel required more skill. "I think that reading a graphic novel requires more skill. I think this because you often have to interpret the pictures and text," Sally wrote in her survey. Eileen added, "The task that requires more skill would probably be the graphic novel because you have to understand what you're looking at and apply it to the story." In her interview Eileen set aside the concept of skill and focused on what motivates her to read saying, "I think I read quicker when I am reading the graphic novel because I just enjoy it more. I typically read faster when I am reading something that I enjoy." Russel believed the all-text novel, "... requires more focus, patience and you have to picture what is being told on your own." Joe did not give a clear indication of his attitudes towards the skill required for these readings. His survey response to this question focused more on his preference for reading rather than his views on the skill required. In his interview response to the question about which would take less time to read he cited the importance of the content saying, "...text of boring material takes a long time. If the content of each was equally as boring the graphic novel would be quicker, because less words. If it was just as interesting the graphic novel could take longer to look at stuff."

When surveyed about classes that they felt a graphic novel could be useful in all the students indicated several classes. Joe, Russel, and Eileen each indicated five or more classes including physical education and music. Sally felt that only social studies, science, and world languages were classes that the graphic novel would be used. This verbal subgroup represents

the highest number of classes for use of a graphic novel with a subgroup average of five suggested classes.

Balanced subjects. The four students in this subgroup were indeed balanced in their self-descriptions of reading frequency. In their survey responses Rhonda and Sydney both indicate that they enjoy a good book to pass the time away. Susan and Brian, however, described themselves as avid readers. All of the students in this group read for pleasure at least 30 minutes per day, with Sydney and Susan saying that they would read until someone tells them to stop.

In terms of their preferences for genre, the members of this subgroup were split. Both Susan and Brian suggested that they loved both fictional and nonfictional styles of writing. Susan stated in her interview, “I want to be in the middle because I have a lot of scientific magazines at home. Sometimes I read a lot of fictional novels.” During his interview Brian had conveyed that he enjoyed books like the *Harry Potter* series and later added that he also enjoyed *Roll of Thunder Hear My Cry*. In a member checking session Brian was asked about his preference for genre and admitted, “I think I am all over the place then. I definitely like the fantasy fiction, but if the nonfiction has a good story to it, I’m into nonfiction!” Both Rhonda and Sydney favored fiction stories for their reading. In her interview session Rhonda said, “I like the fiction we read better, in English, more than like textbooks...they are more fun to read. I get more out of it kind of... more than just facts.” To that Sydney added, “The stories in English are more engaging and interesting, the fictional ones.” For all four students the concept of an engaging story was a specific factor that determined how much they enjoyed reading material and how long they remained focused during reading. Even with Susan and Brian, who both enjoyed nonfiction as well as fiction, the underlying theme of an engaging story was necessary.

When the students discussed their attitudes regarding the graphic novel compared to all-text readings Rhonda felt that the all-text readings required more skill. Both her survey response

and interview conveyed similar thoughts. In her interview she stated, "...the pictures makes it easy to understand...instead of reading a bunch of big words that you don't know they have lines with information and the image right there to figure it out. You can see people's reaction, like the expressions on their face and stuff." In a follow up interview Rhonda was asked to clarify if she thought reading a graphic novel required less skill, even though it was easier for her. She replied, "I think it is a different skill maybe in a graphic novel. I guess to do it right might take as much as a textbook, to read a graphic novel. I just like it." When Sydney was initially asked about the topic in the survey she felt that the graphic novel helps the reader with images and therefore an all-text book or novel would require more skill. In her interview and a follow up member checking session Sydney responded, "I guess with the graphic novel it is a little easier to learn since there are images...the images help you learn things. I mean they could write them out but the symbols do the same. I guess if you miss the symbols it's hard to tell. You can't really miss words in a regular book." Susan felt that graphic novels required less skill when asked in the survey, but later indicated that the graphic novel was both demanding and interesting. When questioned about the images in the graphic novel she said, "Some of them I get confused by but once (the teacher) explains what it means it makes sense...it connects in a cool way...just not used to doing it that way...figuring it out." For Brian he states in his survey, "It depends..." noting that the skill level really is driven by the type of reader. In his interview he explains, "...what really counts is what you understood from it...if you are good at understanding pictures, the graphic novel would be better or if you are better at reading then the textbook."

Section summary: Research Question Two. Research Question Two explored the attitudes of the subjects regarding their reading preferences and graphic novels. One of the most recurrent themes discussed by all subgroups was the importance of a good story. Upon first

consideration this might seem to indicate a strong personal preference among the students for fiction. In nine of the eleven subjects this was indeed the case as fiction was mentioned as the primary genre preference or was mentioned alongside nonfiction equally. One of the remaining two subjects Doug did not cite a genre preference but did state that a good storyline was essential. John was the only student who focused on nonfiction solely as his preference.

When the students were questioned about the skill needed to read a graphic novel only one student, Russel, expressed a clear and specific sentiment that graphic novels required less skill. In all other cases across the subgroups subjects indicated that graphic novels could be equally as challenging or require more skill than an all-text book if proper depth was explored, or interest level of the reader was high.

The high nonverbal subgroup did contrast and distinguish itself from the balanced and verbal subgroups. The only two students to indicate a primary preference for nonfiction reading were in the nonverbal subgroup. Additionally all three of nonverbal students reported that they needed breaks often when reading school material for a long time period. Only Sally, in the verbal subgroup, and Brian, in the balanced subgroup, indicated that they also needed breaks from their school reading due to mind wandering and loss of focus.

The verbal subgroup reflected a strong preference for fiction material. Three of the four students in this subgroup stated that fiction was their primary choice for reading. The fourth student, Joe discussed a liking for both so long as it was his choice.

Research Question Three

Research Question Three: How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

Individual interviews. During the course of the individual interview sessions students were asked questions related to their Constitutional knowledge prior to using the graphic novel in the study.

Nonverbal subjects. When asked about his level of Constitutional knowledge before the study began Doug indicated that he knew little. As Doug said, “I think before we started out, I was probably a one to three (scale of ten)... I wasn’t very knowledgeable about it. They taught us in fifth grade but it really didn’t stick that much.” Carlos also scored himself low with a five out of ten for prior knowledge on the topic. John only scored himself a six out of ten for his knowledge about the Constitution, however he had quite a bit to say about it. He stated, “I knew there was a Bill of Rights. I didn’t know there was like the Articles of Confederation, a lot of that stuff...I have always had a kind of interest in that stuff so I typically knew a little bit about it...” He continued, “I knew like the freedom of press, freedom of speech, freedom of religion and stuff like that...I didn’t think there was that many amendments and I didn’t know all the other stuff.”

Verbal subjects. When asked about her level of knowledge Eileen scored herself modestly with a five out of ten. Rather than giving herself a score Sally responded, “...not so much because I always forget a bit about what I learned from previous years. It’s kind of like mostly new to me. I really don’t remember learning most of it. Maybe a three?” Russel, similarly, noted a moderate level of Constitutional understanding stating, “I had a general knowledge of how the Constitution was formed, set up... I really was not very clear on the details.” Joe ranked himself at a seven out of ten, the highest of any of the students in the study

group. He explained, “I knew a lot about it because we studied it in previous years. I had known about the Constitution and the construction of the government and the founding fathers and the Declaration (of Independence).”

Balanced subjects. Brian felt that he had a low level of Constitutional knowledge, ranking himself a two out of ten. As he said, “I didn’t know a lot of this stuff.” Earlier in his interview Brian described an ability to apply prior knowledge in another area of school. While describing the reading of *Animal Farm* in his language arts class Brian discussed how the book was a reflection of life in communist Russia, something he had learned about in social studies in seventh grade. Sydney scored herself at a six out of ten with no specific memories of learning about the Constitution, and Rhonda commented, “I’m not a political person who knows like all of our history and stuff. I mean I knew vaguely about it but not in detail. I’m about a three out of ten.” During her interview Susan was able to articulate a relationship between prior knowledge and visuals. When asked she stated, “They have pictures of course but they can’t relate it to real life things...they might describe a scenario in text but it doesn’t really quite come up to a visual like pictures do.” She continued, “I guess some textbooks will have good pictures that might make you think of something you’ve seen or learned before.” On Constitutional prior knowledge Susan gave herself a three out of ten. “We learned most of it in fifth grade and then we didn’t touch on it,” she explained.

Work samples one and two. In the following section individual results from work samples one and two, previously discussed with Research Question One, will be re-examined alongside subjects’ level of prior knowledge.

When students’ self rated level of knowledge was examined alongside their ability to recognize metaphors and symbols in work samples one and two few trends were found. The nonverbal students did present an inverse relationship between the level of prior knowledge and

rubric scores on the two work samples for symbol and metaphor recognition. As the level of perceived prior knowledge rose subjects scores dropped. The other two subgroups did not present any identifiable trends or relationships within their groups. Across the subgroups most students ranked themselves moderate to low on their level of prior Constitutional knowledge. Joe, the verbal subject with the highest self reporting of prior knowledge in the study group scored below the study group average on symbol and metaphor recognition. Conversely, Susan, the balanced subject with one of the lowest self reported levels of prior knowledge in the study group had the highest symbol and metaphor recognition score.

Section summary: Research Question Three. Individual interviews revealed that each of the students recalled having learned about colonial America and the time period of the American Revolutionary War in the elementary grades. These eighth-grade students expressed varying levels of familiarity with the facts surrounding the signing of the United States Constitution, however none of them claimed to be well versed in the content. Self ratings ranged from a one to seven out of ten. It was noted that in several instances the less students' described knowing about the content, the higher their ability was to recognize symbols and metaphors pertaining to that content. This seemingly contradictory trend is worth noting and will be discussed further in chapter five.

Focus Group Interviews

Following the collection and analysis of data several trends and themes were identified related to the overarching research questions. These themes, grouped below according to corresponding research question, include the following;

Research Question One: How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?

- A comparison across subgroups in images preventing mind wandering and maintaining focus while reading
- A contrast between subgroups in personal preference for reading genre related to fiction verses nonfiction
- A contrast between subgroups in reading attack strategies related to images, text, and headings

Research Question Two: What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?

- A comparison across the subgroups in the importance of an engaging storyline to motivate the reader
- A comparison across the subgroups in the perception that graphic novels can be challenging if written and drawn with depth

Research Question Three: How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

- A comparison across the subgroups in the tendency for symbol and metaphor recognition in the graphic novel to decrease as a students' perceived level of knowledge in that book's content increases

A focus group was chosen from the students in the three subgroups. One student from each of the nonverbal, verbal, and balanced subgroups was selected based on their ability to appropriately represent the general trends of their subgroup and their ability to express opinions enthusiastically. The three focus group students were John, Eileen, and Susan. Each student was engaged in such a way as to more specifically inform the emergent themes listed above and below in the table. Table 8 lists focus group discussion statements, the emergent themes, the research questions addressed, and the subgroup trends being explored in detailed.

Table 9

Focus Group Discussion Statements and Subgroup Trends

RQ	Statement	#	Theme	Trend
1	When I read text my mind can wander but it doesn't do this when I read a graphic novel.	5	Images provide focus/prevent mind wandering	Similarity across subgroups that images provide focus and prevent mind wandering
1	If I really enjoy what I'm reading it's probably going to be a fictional book in my hands.	6	Preference for reading genre	Nonverbal subgroup preference for nonfiction, verbal and balanced subgroup preference for fiction
1	When I read a textbook the first thing I notice and look at are the pictures or charts.	8	Textbook reading attack strategies	Nonverbal subgroup preference for images first, verbal for text first, and balanced for headings first
2	Graphic novels are like picture books that are only useful for students who do not read as well as other students.	1	Graphic novel challenge	Similarity across subgroups recognizing that graphic novels can be challenging
2	It takes a long time to read a graphic novel because it involves careful observation and visual analysis.	2	Graphic novel challenge	Similarity across subgroups recognizing that graphic novels can be challenging
2	It doesn't matter if it is fiction or nonfiction, their needs to be a good story told for me to enjoy it.	7	Importance of storyline in maintaining reading focus	Similarity across subgroups that a good storyline is important to maintain reading focus
3	I recognized specific images in the graphic novel from things I learned before.	3	Prior knowledge level impacts symbolic recognition	Inverse relationship
3	The more you know about a topic like the US Constitution the easier it is to read the graphic novel and understand symbolism.	4	Prior knowledge level impacts symbolic recognition	Inverse relationship

Research Question One. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?

Interview statement five. When I read text my mind can wander but it doesn't do this when I read a graphic novel.

Initial discussion around this statement indicated that Eileen was undecided. John and Susan both felt that the pictures in the graphic novel kept them engaged. While John is naturally drawn toward nonfiction as will be discussed later, he did indicate a weakness in his reading. He stated, "It's a strongly agree for me. I drift when reading...if it sucks, the reading, then I will take forever to get through it." When asked further, "What if it sucks and it's a graphic novel?" he responded, "I liked the Constitution thing, but I really like the graphic novel thing too. I did not wander at all with that book. Pictures are huge for me." Eileen only tended to mind wander a little when reading normally however she conceded, "I would not do it as much with pictures like in the graphic novel. The pictures would keep me going longer." Susan similarly noted, "I think I would stay with reading longer with pictures, but I don't necessarily lose focus a lot."

Interview statement six. If I really enjoy what I'm reading it's probably going to be a fictional book in my hands.

Clear differences were found between the subjects regarding the preferred genre of self-chosen reading material. Both Eileen, verbal, and Susan, balanced, indicated a preference for fiction reading. Eileen said, "No brainer. I totally agree. I would much rather have a story." Susan added, "Most of the stuff I pick up for fun is for fiction. It's just more interesting." Conversely John described his love of nonfiction. He stated, "Most of the stuff laying around my room is like 20th century encyclopedias and novels about real people or events."

Interview statement eight. When I read a textbook the first thing I notice and look at are the pictures or charts.

During the course of this discussion all subjects indicated that they engaged with the pictures in a textbook to some degree initially. Of the three John described a strong connection with the images on the pages. John stated, “For a lot of textbooks there is usually charts, like graphs, and pictures that go with the information....maybe I might read a heading too, but I mostly look at the pictures.” Susan felt that titles and headings were more helpful and engaging for her. “...there are usually titles that key me in too. So it will have the chapter title in bold and I will go for that first,” she recalled. While Eileen initially noted that she noticed the pictures first, she later admitted that reading from the beginning makes the most sense for her. She said, “Sometimes I scan, but it can get confusing so I just get right to it.”

Research Question Two. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?

Interview statement one. Graphic novels are like picture books that are only useful for students who do not read as well as other students.

When presented with the first statement card the students responded very thoughtfully. Eileen seemed to understand that the graphic novel would be enticing to a struggling reader when she stated, “...some kids who don’t read well probably would be drawn to the graphic novel because, well, less reading!” Later in the discussion she added, “You really have to think about the pictures a lot to understand everything.” Here Eileen acknowledges the depth that can exist within the graphic novel and the difficulty that can accompany it. John similarly noted, “I don’t think that graphic novels are ONLY good for people who have trouble with reading...I really like the graphic novel and I’m a decent reader.” Susan took a stronger position by adding, “I know I can read well but I love reading the graphic novel...the symbolism is kind of like figuring out a puzzle too.”

Interview statement two. It takes a long time to read a graphic novel because it involves careful observation and visual analysis.

Susan began the discussion in agreement with the statement above. As she noted, “The art is awesome but I don’t feel myself slowing down. I do take my time if it looks like a complicated picture.” Eileen and John continue the discussion while venturing into the topic of symbolism and recognition of hidden meanings. Eileen said, “...like the symbolism is really cool...how they used the birds to show the states and that three-headed dog for the government.” To which John added, “That was Cerberus from the mythology.” Susan reiterated that for her she did not feel herself slowing down but did appreciate the detail and visual representations present in the graphic novel.

Interview statement seven. It doesn’t matter if it is fiction or nonfiction, their needs to be a good story told for me to enjoy it.

While genre preference was a distinguishing feature of the study group subgroups, the need for an engaging storyline was an apparent similarity that the focus group explored in statement seven. Without a doubt all three of the subjects in the study group responded strongly that a good story was essential to maintain interest and focus while reading. John, a fan of nonfiction, did a nice job explaining how good stories in history are the most compelling reading he can find. He explained, “Like last month I read this book for RWW class about how the United States used inflatable tanks, trucks and artillery to fake out the Germany spy planes during WWII. It went through the strategy, how stuff was built. That is cool.” While Eileen and Susan were not as familiar with the event as John was, they also needed engaging plot. Susan enjoyed narratives set in conflict while Eileen noted, “It has to have a good story or I stop reading after like ten or twenty pages. I’ll return the book.”

Research Question Three. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

While the inverse relationship between prior knowledge and the recognition of symbols and metaphors initially appeared to be counterintuitive and vague, the researcher wished to explore the relationship within the focus group in order to better inform the study. To this end the subjects explored two interview statements related to prior knowledge, one general and one specific to the graphic novel content.

Interview statement three. I recognized specific images in the graphic novel from things I learned before.

The three subjects from the focus group had a great deal to say about this statement card. Generally all three agreed that the symbolism used in the book worked off of ideas, images, and information that they recognized before. Eileen admitted that some of the visual metaphors and symbolism was not entirely clear at first. She stated, "...they did the same with the judicial branch as his head. That was in a lot of places. I'm not sure I got that at first, but I did recognize the buildings, mostly the White House, and I thought that that is the president." Susan felt that she was often challenged to interpret symbolism as she scored this statement card a five for strongly agreeing. Susan explained, "The way the author used the doves for peace and the different birds for states...It kind of does the talking for you. Like the author doesn't have to use the words...they can draw two guys fighting with fists and give them heads of those buildings. But you DO have to know those buildings." For John the symbolism was not only a clever way to communicate the facts. He observed, "I think more kids, if it is kids you're talking about, more kids would probably get the picture than the word 'legislative'. I mean most kids have seen the White House in a picture or TV..." Susan thoughtfully noted that the symbolism was often using familiar things in an unfamiliar way. She said, "like they would talk about something with

marriage rights and show a couple on a map of the US between states and something chasing them... so it's like familiar, but images you don't see together usually...it's to make the point."

Interview statement four. The more you know about a topic like the US Constitution the easier it is to read the graphic novel and understand symbolism.

Each of the subjects felt that this statement was true and they scored fours and fives to indicate their agreement. Susan, in a matter of fact tone, announced, "It just makes sense, you know? If you know a lot about something you are going to like recognize things and make connections." Eileen supported this claim stating, "I think that if it was a graphic novel about civil rights or something, and you knew a lot about those laws and time, then you would pick up on a lot of stuff that someone else might not." When asked if there was a topic where this would not be the case, knowing more is helpful, none of the students could think of one.

Section summary: Focus group interviews. Upon analyzing the qualitative data six trends and themes emerged which warranted further and more detailed exploration. A focus group was chosen from the students in the three subgroups. John, Eileen, and Susan were selected based on their ability to appropriately represent the general trends of their subgroup and their ability to express opinions enthusiastically.

Research Question One. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?

The first theme that emerged related to students' ability to interpret symbolism and visual metaphors was a similarity across subgroups that images provide focus and prevent mind wandering. While John, Eileen, and Susan had varying levels of mind wandering they all expressed that images and pictures do keep them engaged and prevent mind wandering to whatever degree they experience this individually.

A preference for reading genre was another theme that emerged from the data. In this case a distinction was originally found between the nonverbal subgroup, subjects that preferred nonfictional reading, and the verbal and balanced subgroups, both of which preferred fiction reading. When the focus group was presented with the concept of reading genre they explicitly indicated their preferences, preferences that reflected the subgroups initial trends. John, the nonverbal subject, clearly expressed his love of reading historical nonfiction while Susan and Eileen, balanced and verbal subgroups, both stated that they chose fiction most of the time.

The third and final theme within Research Question One was that of textbook reading attack strategies. Initial findings seemed to indicate nonverbal subjects having a specific preference for studying pictures and images before text and bolded headings. Findings also pointed to verbal subjects reading textbooks with text first and balanced subjects scanning bold headings and images first. John, Eileen, and Susan all indicated that images were an important part of their textbook reading. For John it was clearly the first and most important feature. Susan made some reference to scanning headings, supporting previous findings, and Eileen also mentioned a tendency to begin with the text reading without distracting herself by scanning around. Again this description supports earlier trends for subgroup attack strategies.

Research Question Two. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?

Across the subgroups there appeared to be clear indications that nonverbal, verbal, and balanced students recognized possible and potential depth in graphic novels. Two separate focus group discussion statements addressed this possibility. While one statement presented the graphic novel as a simplistic tool for struggling readers, the other framed it as a challenging exercise in visual acuity. Focus group members reinforced the idea that the graphic novel can reflect depth, present challenges, and is applicable to many learners and content areas.

The second attitudinal theme that emerged was the importance of an engaging story. Mentioned in each of three subgroups initially the concept was addressed and the theme affirmed as a critical component of any reading that maintains focus. Within the focus group John expressed how a good storyline transcends genre and can be found, for him, within history.

Research Question Three. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

Both focus group statements three and four were designed to explore what seemed to be the inverse relationship of prior knowledge and symbol and metaphor recognition. Recognition of this trend was met with skepticism by the researcher yet warranted clarification through the focus group. When asked about the likelihood that they recognized symbolism from things they had learned before each of the focus group members gave specific and clear examples of how this had occurred for them personally. John went so far as to generalize this skill to other students who would be able to interpret meaning from the symbolism yet struggle with the written terms applying to the same idea. Statement four specifically referred to prior knowledge about the Constitution. All students noted that more knowledge about the Constitution would make it easier to interpret the graphic novel. They each recalled pictures within the reading where their own knowledge assisted them in interpreting the symbolism and recognizing visual metaphors. In this case results gathered from the focus group members did not support the trend indicated by earlier data.

Conclusion

The findings of this study indicate that eighth grade students with varying learning profiles represented as nonverbal, verbal, and balanced share more similarities than differences in regard to how they interpret symbolism and visual metaphors and their attitudes regarding reading graphic novels. The majority of the subjects in this study believed their tendency to lose

focus and mind wander while reading was mitigated when text was accompanied by pictures, images, and other visuals. A clear majority of subjects also recognized that graphic novels have the potential to be challenging and substantial books that are embedded with symbols, visual metaphors, and implicit details. Across the three subgroups students also felt that despite how they personally defined it, a good story was a driving force in maintaining their interest with a book.

Personal definitions of a good book were indeed one of the distinguishing features in the findings. In an effort to explore reading habits amongst the subjects in these three groups they were asked about reading genre preferences. Nonverbal subjects indicated a preference for nonfiction, whereas verbal and balanced subjects favored fiction. A second distinction between subgroups was found based on how they attacked their reading of a textbook. All three nonverbal students indicate a preference of using images first in their reading. Three out of the four verbal students indicated a preference for beginning the textbook with the reading, and three out of four balanced students preferred scanning the headings and titles before reading.

Data related to students' use of prior knowledge while reading graphic novels was inconclusive and at times contradictory. When students' self-rating of their knowledge about the United States Constitution was compared with their ability to interpret symbolism and visual metaphors a weak inverse relationship was noticed. When this relationship was explored more directly in the focus group all three students clearly indicated they felt prior knowledge helped them comprehend symbolism and visual metaphors, citing specific examples.

CHAPTER FIVE: SUMMARY AND CONCLUSIONS

This study was conducted to examine how nonverbal, verbal, and balanced learning styles impact students' interpretations, interactions, and attitudes while reading a nonfictional graphic novel in their eighth grade social studies class. The graphic novel is a highly visual and relatively unexplored genre of literature that has only recently been researched in the past few years. Through a combination of classroom observations, semistructured interviews, survey responses, work samples, and a focus group interview the study found emerging patterns that can facilitate a better understanding of how graphic novels can be used effectively in the classroom.

This chapter begins by discussing the findings of the study as they relate to the research questions. The implications of the findings demonstrate a need for educators to consider both discrete differences and shared similarities in regards to several areas of students' experience when reading graphic novels. Findings also illustrate the need to implement a varied level of visuals within instruction materials including textbooks and novels, a choice of multiple genres for student reading in order to embrace an individual's narrative, and instruction of visual literacy and the graphic novel construct. The second section of this chapter discusses these findings in terms of how they relate to and are supported by the review of literature in Chapter Two. The limitations of the study are addressed in the third section of this chapter. Guba's (1985) four-part model of trustworthiness was used to illustrate how the researcher limited potential threats. The model of trustworthiness includes truth value, applicability, consistency, and neutrality (Guba, 1985). The implications of the findings are addressed in the fourth section of this chapter and discuss the graphic novel as both instructional material and the focus of instruction, genre variety, the importance of varied levels of visual instruction and targeted instruction, and the role of verbal, nonverbal, and balanced learning styles for instructional

purposes. The fifth section of this chapter contains suggestions for future research as it relates to these findings, and the chapter concludes with a chapter summary.

Review of the Findings Related to the Research Questions

The following three research questions were addressed in this study:

1. How do students with varying verbal and nonverbal learning profiles interpret symbolism and visual metaphors in graphic novels?
2. What are the attitudes of students with varying verbal and nonverbal learning profiles towards reading a graphic novel?
3. How do students with varying verbal and nonverbal learning profiles integrate content from graphic novels with prior knowledge?

Research Question One

Images provide focus and prevent mind wandering. Data collected through both the individual interviews, survey, and focus group interviews demonstrated that loss of reading focus and the occurrence of mind wandering was an issue for eight of the eleven subjects in the study. Of these eight Brian and Susan, both from the balanced subgroup, indicated that this was a minor issue occurring only occasionally. Many of the students described mind wandering incidents towards the end of a long selection of reading, particularly when the reading involved material for school that did not interest them. Many of the students recalled having to go back into the reading to reread passages that they had decoded visually, but failed to remember. Carlos, a nonverbal student, stated, “I get to the point where I realize that for the last several pages I have been thinking about something totally different.” Similarly verbal students like Eileen noted, “I start to kind of lose focus and I have to go back and re-read it a little bit.”

Students were additionally asked whether images helped them maintain focus in their reading. Of the eleven subjects, the same eight indicated clearly that pictures and other images

did help them read with focus and process the reading better. Rhonda, a verbal subgroup member stated, “With pictures it makes it easy to understand. Instead of just reading a bunch of big words that you don’t know...” Joe added, “It’s something different and it keeps me awake and focused.” Additional data from students noted the use of charts and graphs to help preview and review material which helped them stay engaged with material longer.

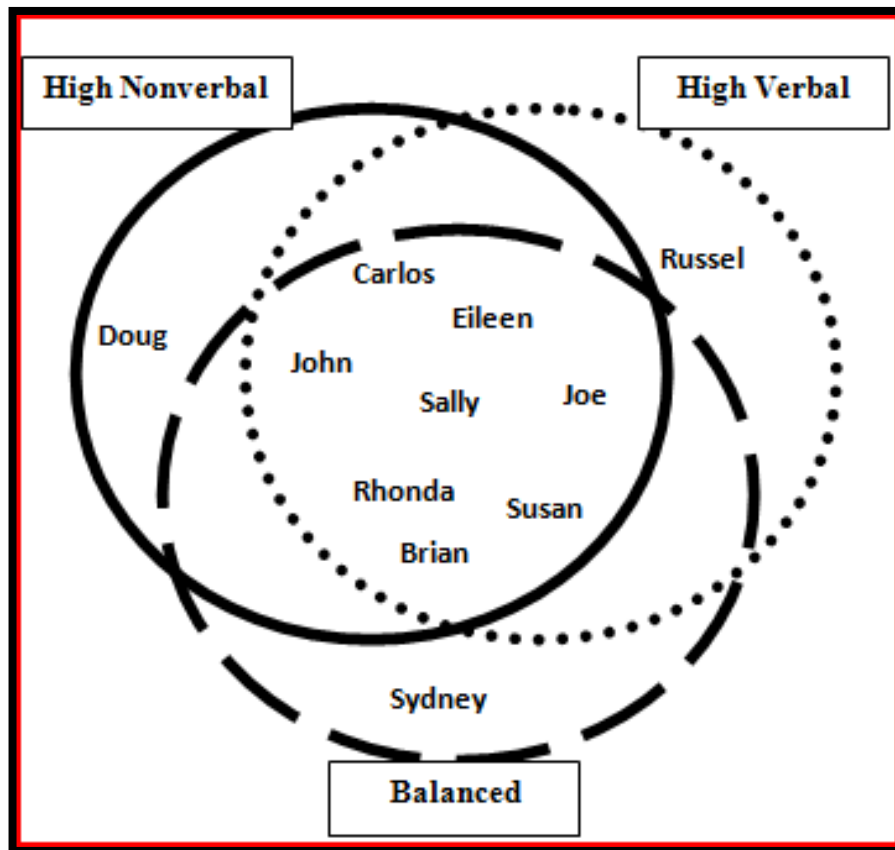


Figure 23. Study group agreement regarding images and mind wandering.

When provided with the focus group interview statement, “When I read text my mind can wander but it doesn’t do this when I read a graphic novel,” the subgroup representatives each indicated that images and pictures minimized their tendencies to mind wander or allowed them to maintain focus for a longer period of time. John, the nonverbal subject, stated, “I liked the Constitution thing, but I really like the graphic novel thing too. I did not wander at all with that

book. Pictures are huge for me.” While the verbal subgroup student Eileen felt that she only mind wandered a little when reading traditional text she stated, “I would not do it as much with pictures like in the graphic novel. The pictures would keep me going longer.” Susan from the balanced subgroup did not initially seem to have an issue with mind wandering while reading. During the focus group interviews she did state, “I think I would stay with reading longer with pictures, but I don’t necessarily lose focus a lot.”

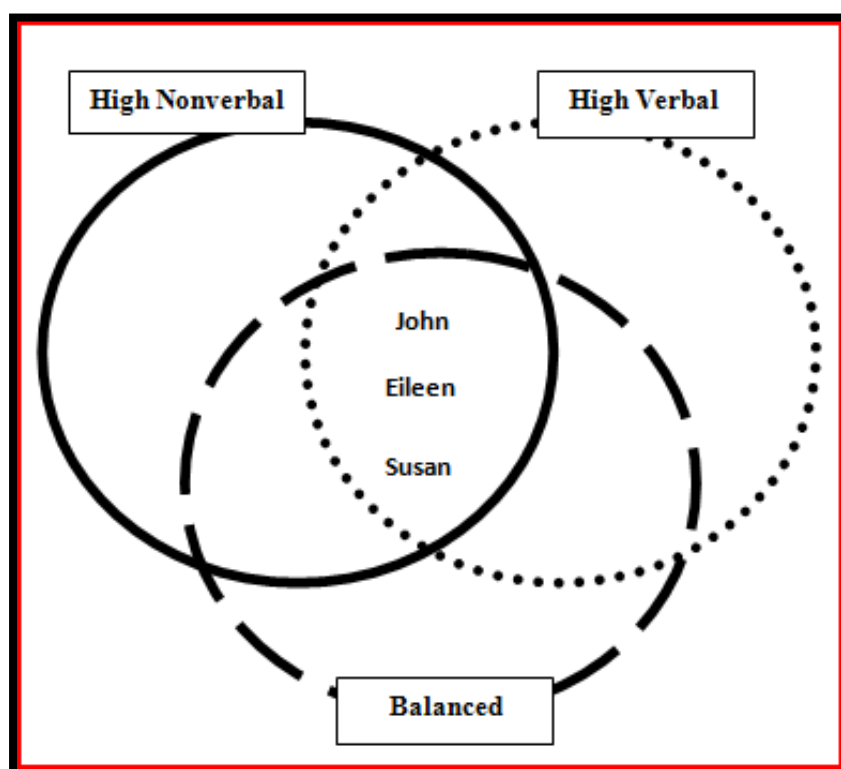


Figure 24. Focus group agreement regarding images and mind wandering.

Preference for reading genre. While no question on the survey specifically asked students about their preference for genre, several open-ended questions provided opportunity for students to discuss personal reading choices and book titles. This, in turn, led to more specific questions during the individual interviews and focus group interview. The topic of reading genre is not exclusive to graphic novels however this emergent theme appeared as a distinguishing variable and warranted exploration. Data collected during individual interviews, survey, and

focus group interview regarding students' preference for genre showed differences between the subgroups.

As the individual interviews were carried out the nonverbal students demonstrated a preference for nonfiction reading. While discussing his idea of a good book John had stated, "Well, I like nonfiction a lot, like even stuff like modern nonfiction." John continued in his conversation about genre describing a recent book he remembered about World War II and advanced strategies that the United States military had used to deceive the Germans. As the interview began to shift towards a related topic John brought the idea of genre back again by thoughtfully bridging his affinity for nonfiction with novels he had to read for school. He stated, "Even those fictional stories like *Animal Farm*, I like them a lot as long as I can see the real life stuff, the stuff that relates to more factual nonfiction in them." Carlos also expressed that nonfictional reading was his preference, but he was a bit more specific to the content. He concluded, "Factual books are cool. I like sports books but if the topic doesn't interest me I'm not going to read it, I'm not going to read anything like genetics." Further exploration into the topic of genre preference took place with John in the focus group interviews. As Eileen and Susan described their love for fiction John looked downright surprised as he noted, "Most of the stuff laying around my room is like 20th century encyclopedias and novels about real people or events."

Verbal and balanced subgroup members could not have been more unified in their preference for fictional reading material. Throughout the survey responses, interviews, and the focus group discussions verbal and balanced students mentioned clear examples of fictional reading titles and content that appealed to them. As members of the verbal subgroup Joe, Russel, Eileen, and Sally represented a wide array in the styles of fiction that they enjoyed. Joe was more of a science fiction and fantasy aficionado. Eileen described her favorite reading as

realistic fiction, while Sally said, “I think it is interesting like adventure and exciting things, fiction or fiction based on fact.” The balanced subgroup of Susan, Brian, Rhonda, and Sydney all mentioned enjoying fiction, however Susan and Brian discussed the genre topic with consideration for both fiction and nonfiction. Susan seemed conflicted during her individual interview as she often would read great fictional novels, but she also enjoyed reading the science magazines she had at home in her room. Among the numerous fictional titles he admitted reading with enjoyment Brian stated, “I think I am all over the place then. I definitely like the fantasy fiction, but if the nonfiction has a good story to it, I’m into nonfiction!” Perhaps it is this overarching love of reading that reinforces why both Susan and Brian also described themselves as avid readers. In her focus group interview Susan added, “Most of the stuff I pick up for fun is for fiction. It’s just more interesting.” Rhonda and Sydney were less diplomatic about their preferences. Both girls discussed the enjoyment of the fictional stories that they read over factual books like textbooks. Sydney said, “The stories in English are more engaging and interesting, the fictional ones.” This relationship can be seen in Figure 25.

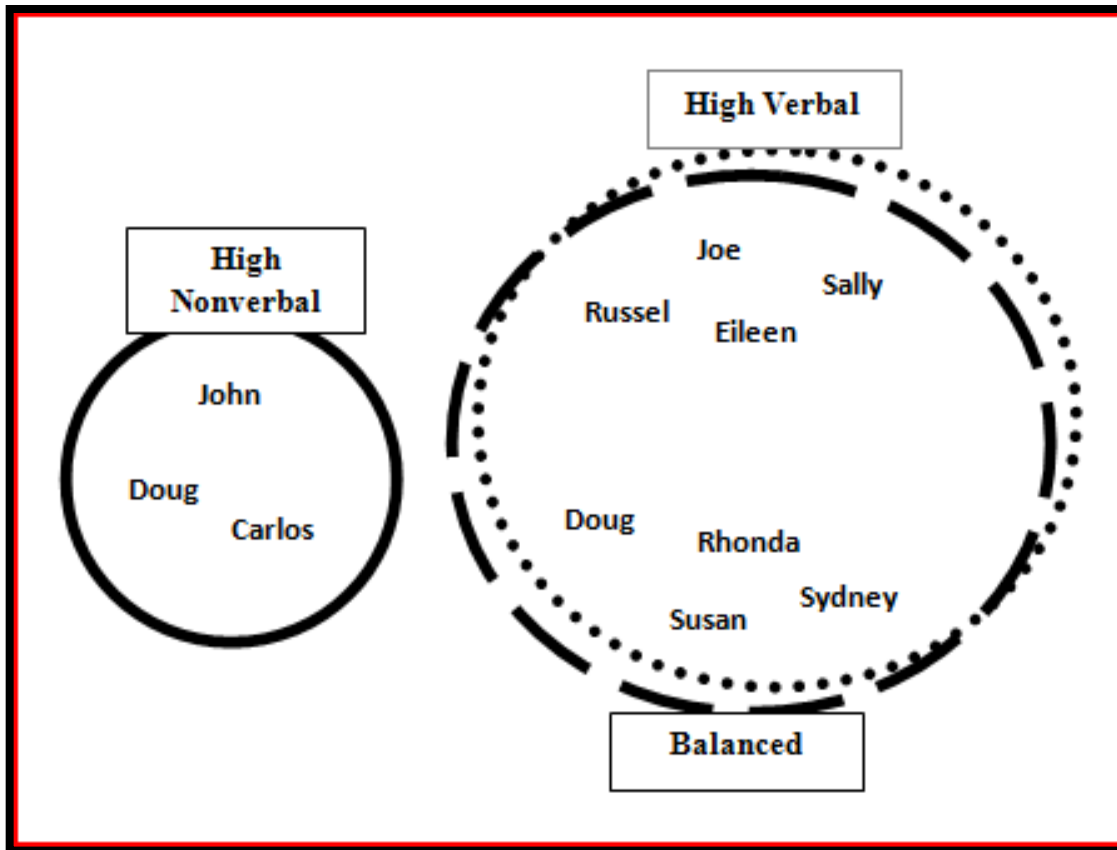


Figure 25. High verbal and balanced subgroup agreement regarding preferred reading of fiction.

The graphic novel used in this study was a nonfiction book that complimented the students' studies on United States government. Genre as a reading preference was not initially an area that the study intended to explore, but given that this theme emerged during the course of the study, it was a welcomed topic to explore further in the focus group interviews. To this end focus group interview statement read, "If I really enjoy what I'm reading it's probably going to be a fiction al book in my hands." In response to survey questions and individual interviews a majority of the verbal and balanced students had a preference for fiction. Focus group responses supported this as Eileen responded, "No brainer. I totally agree. I would much rather have a story." Susan expressed that most of her reading is fiction because it is a lot more interesting. John, the nonverbal subject in the focus group, referred to nonfiction novels and encyclopedias as his choice of reading. This was a preference that his nonverbal subgroup originally discussed.

Textbook reading attack strategies. This study attempted to explore the relationship that students with varying learning profiles have with a nonfictional graphic novel. Because graphic novels are a new and unfamiliar genre for students today it was necessary for this study to explore the relationship students have with a traditional textbook and its complimentary images. Textbook reading strategies were initially conceived as a necessary area to research and were addressed in the online survey, individual interviews, and again in the focus group interview. Interestingly a difference was found between all subgroups in the ways they initially attacked the reading in a textbook.

The nonverbal students, John, Carlos, and Doug all conveyed a strong tendency to use images on a page prior to reading the words in a textbook. In their survey responses to the question about their strategies for reading both John and Carlos scanned the page for pictures and images first and studied them before reading paragraphs. Follow up question in the individual interviews yielded more information about their preference for images. John stated, “It makes you think a lot more because with the pictures you have to figure out yourself what they mean because it is not all-text...I think I am more of a visual learner.” Similarly Doug added, “I actually look at the pictures first. I feel like the pictures are really helpful because pictures tell you a lot more than the textbook sometimes.” Carlos was less clear about his use of the images in the textbook, however during a member checking session to clarify his preference he mentioned that the images were necessary for him to retain focus and often times for him to understand complex relationships. If it was the first thing that he looked at, he was not entirely sure. He explained, “If it is not the first thing I attack, it is probably a close second because sometimes things don’t make much sense unless I can see it.”

Verbal students did not carefully explore images to the same degree as the nonverbal students. For Sally, Joe, Russel, and Eileen a quick scan of the page preceded their reading.

Despite this trend as indicated through the online survey, it should be noted that all students did discuss the important role that images played in various classroom situations. Sally discussed the importance of pictures for her stating, "...like in Spanish (class) it helps a lot and to learn the vocabulary, having the picture with the word helps me learn new ideas." Russel also added, "Sometimes when I am looking at the material to review I spend more time looking at the tables and graphs." During the focus group interview Eileen was a bit more specific with her strategy for reading material when she said, "Sometimes I scan, but it can get confusing so I just get right to it." Ultimately what emerged throughout the study from the verbal subgroup was a general tendency to scan, consider images, but ultimately attack the reading in a textbook first. When reading is used for various other activities like studying, note taking, or previewing the degree to which images are relied upon can vary.

Reading strategies for textbooks among the balanced group initially seemed split based on the survey data collected first. Sydney and Brian indicated that they prefer to find the written headings and titles first, read, and look at images last. While Susan and Rhonda both stated that they prefer to scan images on the page first, later individual interviews pointed more cohesion among the group. In her interview Rhonda clarified, "I'll look at the titles or if I am looking for an answer I will definitely look at the things around the page like the headings to see where I should be reading." Brian emphasized his initial position by adding, "I usually turn the page and see a word that is in bold, like a heading or vocabulary word. I usually go straight to that..." In the focus group interview the issue was addressed again to which Susan provided a more definitive and clear position. "...there are usually titles that key me in too. So it will have the chapter title in bold and I will go for that first," she concluded. Ultimately the balanced subgroup held a strong preference for scanning titles and bold headings when reading from textbooks.

The reading attack strategies for the focus group generally matched the differences observed in the survey and individual interviews. John, Eileen, and Susan were presented with the statement, “When I read a textbook the first thing I notice and look at are the pictures and charts.” John, the nonverbal representative, agreed strongly with this statement. Susan, the balanced subgroup subject discussed using the bolded headings first. She said, “So it will have a chapter title in bold and I will go for that first.” Eileen, the verbal subject, mentioned that the pictures do grab her attention but that she thinks she tries to read from the beginning to avoid confusion.

Research Question Two

Potential depth in graphic novels. One of the most pervasive stereotypes regarding graphic novels is the idea that they are glorified comic books. Typically this sentiment is often held by people unfamiliar with the genre. In all fairness to this perspective there are those graphic novel titles and series that lack complex visuals or meaningful content. Graphic novels can present themselves as comic-style. Addressed in the online survey, individual interviews, and focus group interview this study found that the majority of students in all three subgroups shared the belief that there is the potential for graphic novels to be meaningful, engaging, and complex.

The nonverbal subgroup had a clear and stated position on graphic novels as a credible form of literature. As Doug noted, “I believe reading a graphic novel takes more skill than reading an all-text novel. While in an all-text novel you only have to have the skill to read, in a graphic novel you have to have the skill to read the text but also read the images and symbolism.” Acknowledging the difficulty present in both text and graphic form Carlos used his interview to explain that graphic novels will pose different challenges, not more or less. As he stated, “...analyzing pictures can take a long time if you know what you’re doing.”

Eileen from the verbal subgroup also articulated the advanced skills that could be necessary with a complex graphic novel. She stated, “The task that requires more skill would probably be the graphic novel because you have to understand what you’re looking at and apply it to the story.” Russell, another verbal student, was an exception to this view of the graphic novel being more challenging than a regular novel. While he did indicate that there can be depth to a graphic novel he concluded that an all-text novel would require more patience and focus. Additionally he felt that the reader would have to picture what is being told in their head rather than simply being shown it. Sally discussed the skill needed to interpret the symbolism and text and stated that it was probably more difficult to do that well than to simply read text.

Sydney, Brian, Susan, and Rhonda in the balanced subgroup all acknowledged how graphic novels could challenge a reader. Most of the students in this subgroup chose to discuss how someone’s learning preference could dictate the effectiveness of the graphic novel. Brian stated, “...what really counts is what you understood from it...if you are good at understanding pictures, the graphic novel would be better or if you are better at reading than the textbook.” Rhonda added, “I think it is a different skill maybe in a graphic novel. I guess to do it right might take as much as a textbook, to read a graphic novel. I just like it.” To this point Susan even discussed how she was left confused by the interpretation of several images from the graphic novel in the study even after explanations were offered by the teacher and fellow students. This agreement across subgroups can be seen in Figure 26.

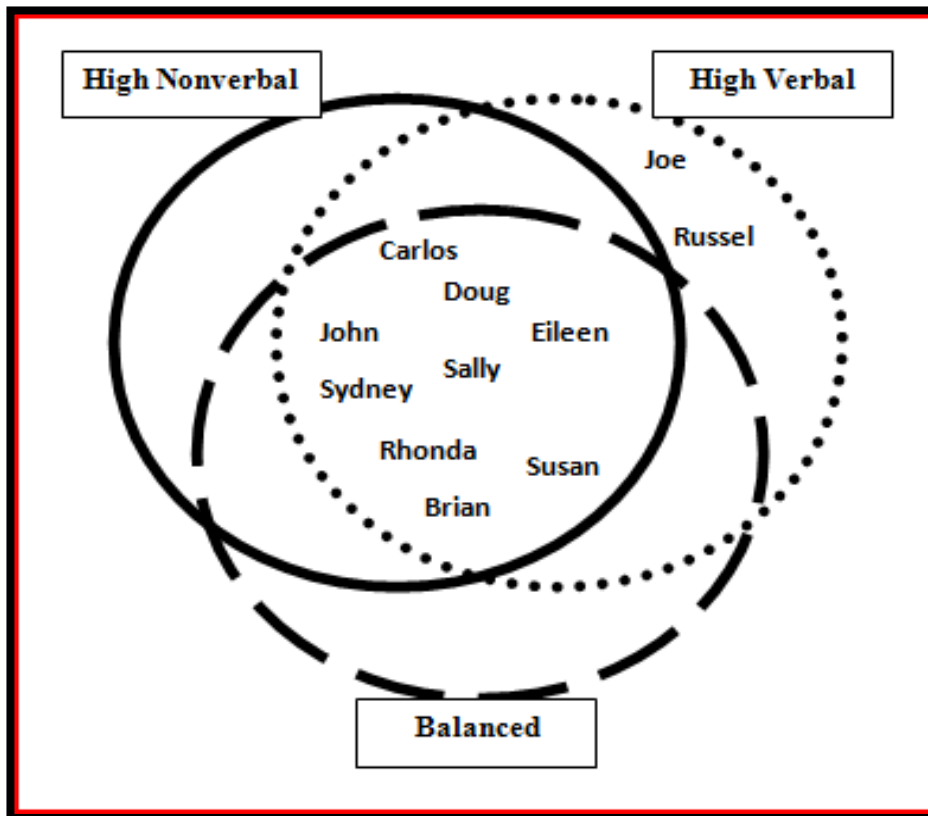


Figure 26. Study group agreement that graphic novels can be challenging.

The focus group interview provided more details from the three students regarding their views of the graphic novel. The two focus group interview statements regarding this theme stated, “Graphic novels are like picture books that are only useful for students who do not read as well as other students.”, and “It takes a long time to read a graphic novel because it involves careful observation and visual analysis.” John, Eileen, and Susan each responded very thoughtfully and with a maturity that demonstrated their appreciation for the graphic novel. Susan’s stated, “I know I can read well but I love reading the graphic novel... the symbolism is kind of like figuring out a puzzle too.” Her sensitivity to the graphic novel’s complexity was further illustrated as she responded, “The art is awesome but I don’t feel myself slowing down. I do take my time if it looks like a complicated picture.” The exchange between John and Eileen regarding symbolism and the authors’ use of a mythological beast to represent the United States

government reaffirmed that these students appreciated the graphic novel as a teaching tool that challenged a variety of learning styles.

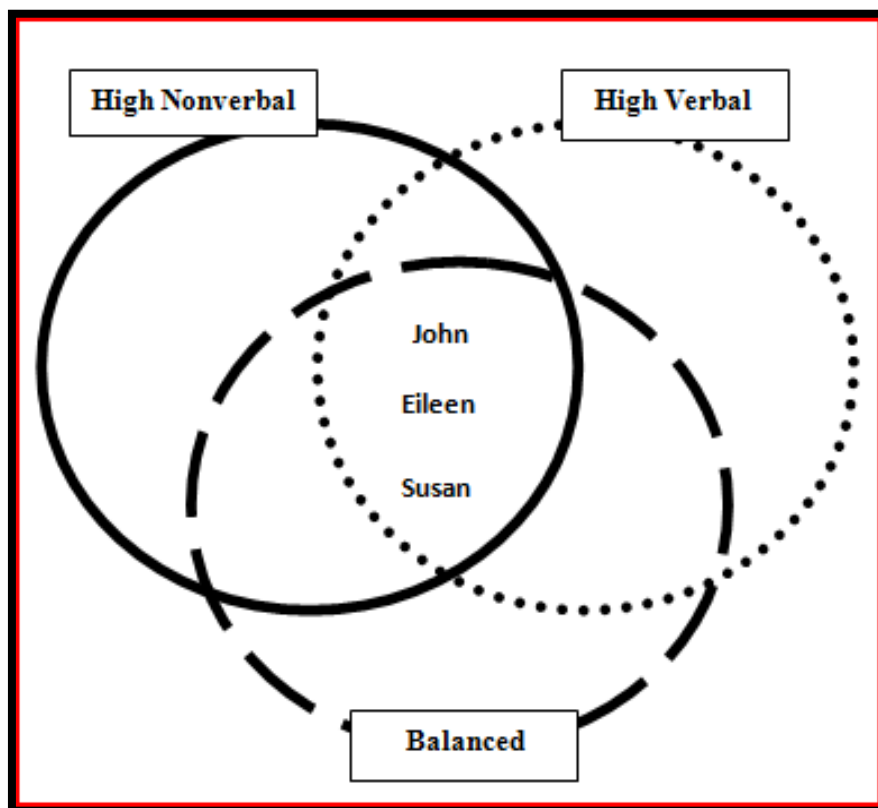


Figure 27. Focus group agreement that graphic novels can be challenging.

Importance of storyline in maintaining reading focus. A theme that emerged alongside the data gathered dealing with genre preference for reading was how a good storyline was critical for many students to maintain reading focus. Throughout the individual interviews and survey responses the phrase “good story” appeared often. For the subjects in this study the definition of a good story probably involves fiction, as eight of the eleven students mentioned this genre as something they enjoy. It should be noted that the two students who preferred nonfiction also discussed how they connected with “cool stories” about history, sports, or nature. Doug, the one nonverbal student who did not state a specific genre preference stated, “I think I actually move easier through *To Kill a Mockingbird* because I can get into the book more because there is a story.” This agreement can be seen in Figure 28.

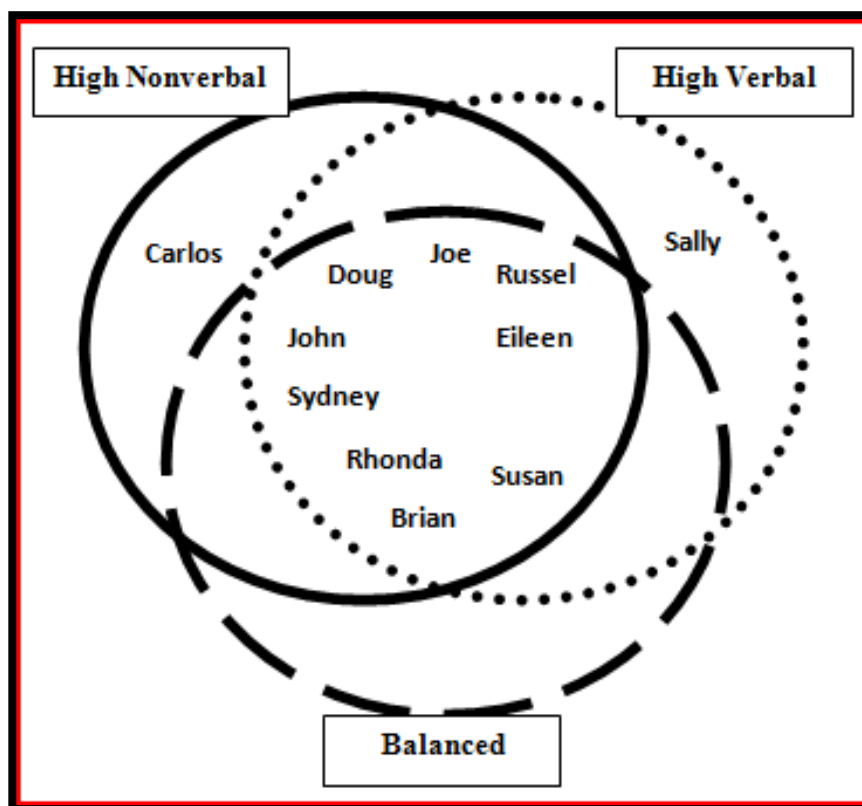


Figure 28. Study group agreement that a good story motivates them to read.

Specific attention was paid to this theme during the focus group interviews. The three focus group students were presented with the statement, “It doesn’t matter if it is fiction or nonfiction, their needs to be a good story told for me to enjoy it.” Without question all three students verified that a good story was critical for them to maintain focus while reading. John who previously indicated that nonfiction was his preferred reading did a nice job explaining how good stories in history are compelling. He explained, “Like last month I read this book for RWW class about how the United States used inflatable tanks, trucks and artillery to fake out the Germany spy planes during WWII. It went through the strategy, how stuff was built. That is cool.” Eileen similarly mentioned, “It has to have a good story or I stop reading after like ten or twenty pages. I’ll return the book.”

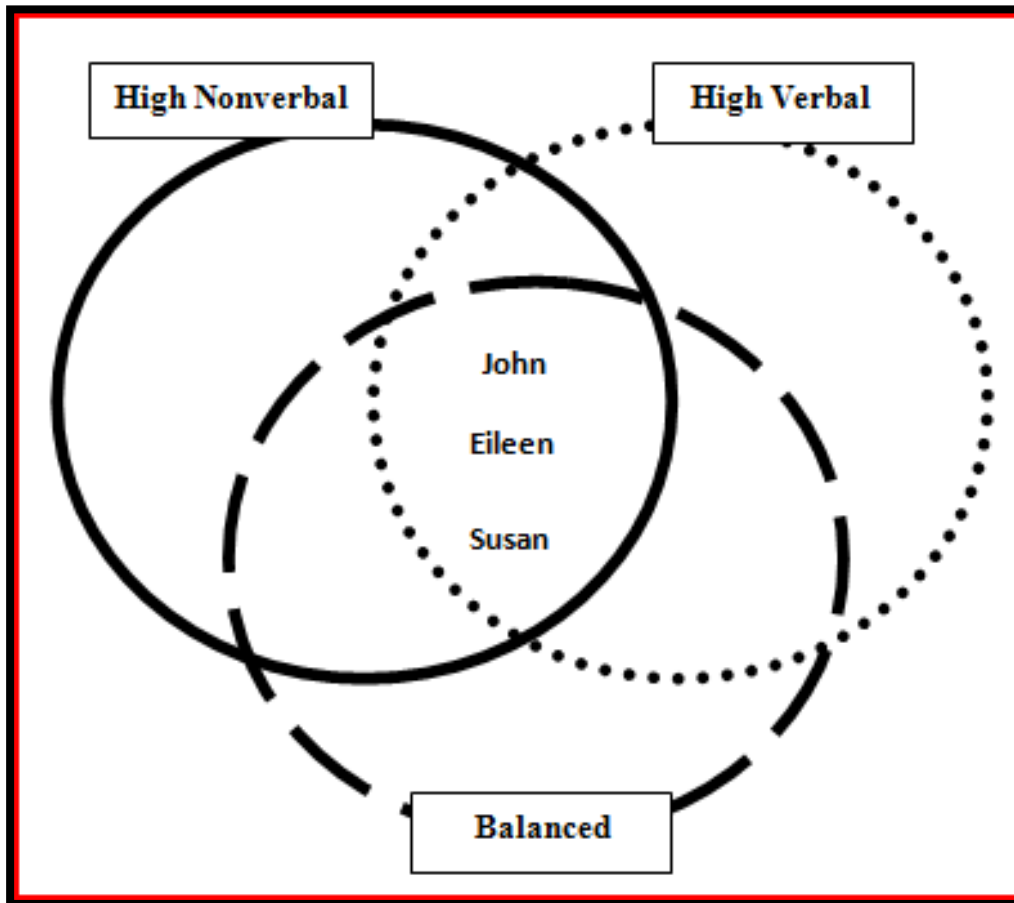


Figure 29. Focus group agreement that a good story motivates them to read.

Research Question Three

Prior knowledge impacts symbol recognition. Initial findings in the analysis of surveys, individual interviews, and work samples indicated a mixture of results. Students seemed to have lower scores related to recognizing symbols and metaphors on work samples when they expressed having a higher level of prior knowledge about the content of the United States Constitution. Despite this seemingly contradictory finding many subjects indicated the effective use of symbols and metaphors throughout the graphic novel, and discussed the meanings those images conjured up for them. With this in mind the focus group was presented with the statements, “I recognized specific images in the graphic novel from things I learned before.” and

“The more you know about a topic like the US Constitution the easier it is to read the graphic novel and understand symbolism.”

Responses to these statements were complex and thoughtful. As Eileen deconstructed the meaning behind the use of buildings as characters’ heads she stated, “...they did the same with the judicial branch as his head. That was in a lot of places. I’m not sure I got that at first, but I did recognize the buildings, mostly the White House, and I thought that that is the president.” Susan insightfully added, “Like the author doesn’t have to use the words...they can draw two guys fighting with fists and give them heads of those buildings. But you DO have to know those buildings... It just makes sense, you know? If you know a lot about something you are going to like recognize things and make connections.” John considered the interpretation of symbolism as a tool that could assist more visual learners as he stated, “I think more kids, if it is kids you’re talking about, more kids would probably get the picture than the word ‘legislative’. I mean most kids have seen the White House in a picture or TV.” Upon the completion of a spirited and thoughtful discussion about prior knowledge it seemed evident that all subjects believe prior knowledge played an important role in the successful interpretation and appreciation of symbols and metaphors in the graphic novel. Focus group agreement can be seen in Figure 30.

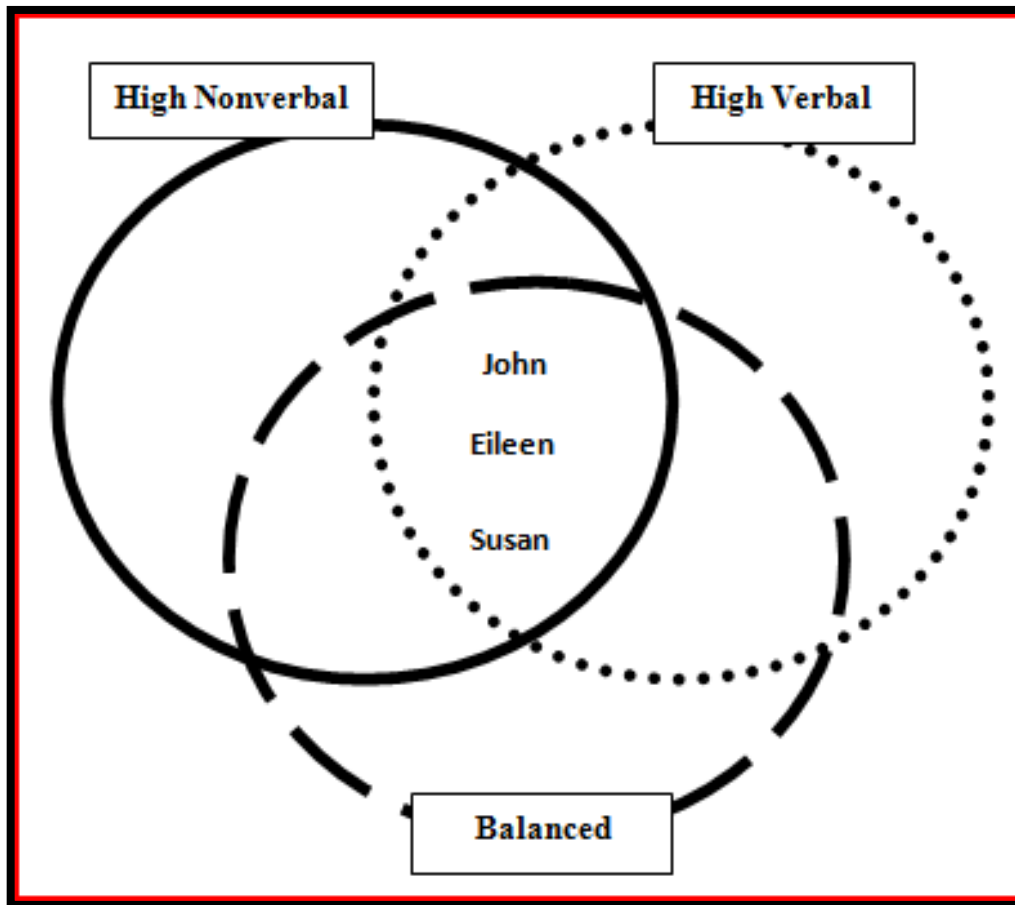


Figure 30. Focus group agreement that prior knowledge helps them understand concepts and decode symbolism.

Findings Related to the Literature Review

Research Question One

Images provide focus and prevent mind wandering. Research from Cain, Oakhill, and Bryant (2004), and Leather and Henry (1994) found strong correlation between working memory and reading comprehension. The Baddeley and Hitch model of working memory contains several slave systems including the phonological loop responsible for subvocalization of visual representation. Another slave system, the visuospatial sketchpad, is responsible for storing shapes, colors, objects, and images (Baddeley 2001). Operation of these slave systems in conjunction with other elements of the model, the central executive and episodic buffer, allows

for the effective retention of acquired reading. This reading includes the text and images in graphic novels.

The Otis-Lennon School Ability Test (OLSAT), Eighth Edition, was administered to the subjects in the study group in the fall of 2010, one year prior to the study. This test includes both verbal and nonverbal categories. Verbal clusters include verbal reasoning and verbal comprehension while nonverbal clusters include quantitative reasoning and figural reasoning (Pearson, n.d.). Creation of the verbal, nonverbal, and balanced subgroups in the study was based on OLSAT scores and provided examination of varying learning styles as defined by the OLSAT.

Creating subgroups based on verbal and nonverbal learning styles allowed for the exploration of the highly visual graphic novel in an eighth grade classroom. Given the critical role of Baddeley and Hitch's visuospatial slave system within working memory the findings that images provided focus for students and prevented mind wandering during reading are supported by the literature.

Additional consideration should be given to the role that images play in the expectancy-value theory of reading motivation discussed by Wigfield and Eccles (2000). As one half of the model, a student's perception of their competency with reading is a strong determinant in their likelihood to maintain reading focus. Many students in this study indicated that pictures helped maintain focus while reading. This may have occurred because they have a higher expectation of success. Images may facilitate a more fluid functioning of the visuospatial sketchpad.

Preference for reading genre. To develop thick and rich descriptions of the subjects in this study individual interviews explored student reading habits and tendencies. The novelty and unfamiliarity of the graphic novel often required the researcher to discuss more traditional reading skills and formats such as preferences for fiction and nonfiction. Differences in

subgroup preferences were noted as only two of the subjects indicated a preference for nonfiction. Both of these students were male and both were from the nonverbal subgroup. While no females expressed an outright preference for nonfiction it should be noted that one female, Susan, felt that she enjoyed many nature and science reading materials at home in addition to her fiction novels.

Research conducted by Topping, Samuels, and Paul (2008) with over 45,000 students indicate that boys overwhelmingly chose nonfiction as a preferred genre over girls. Girls also consistently performed better than boys on reading achievement at all grade levels and the gap between boys and girls only widened as they got older. It is not surprising that eight of the eleven students in this study mentioned that they enjoyed fiction over nonfiction, particularly given the fact that Topping, Samuels, and Paul (2008) found that over 84% of all the teachers reporting in their study admitted to using fiction titles for reading instruction. Moss and Hendershot (2002) also found that the number of nonfiction titles in the classroom libraries in their study was eclipsed by the fiction titles. Even after a rigorous effort to increase nonfictional titles in the study group classrooms the nonfiction books represented only 40% of the titles. In the Moss and Hendershot study the top two reasons for the sixth grade students to select certain nonfiction books were a need to know and the visuals. The existing research supports the findings in this study in that the majority of students preferred fiction and only boys indicated a clear preference for nonfiction. It should be considered that this may be the result of an overwhelming emphasis placed on fiction in the primary grade levels.

Textbook reading attack strategies. The tendency to attack images, charts, and bold headings prior to reading the text in textbooks broke down along subgroup lines with verbal subgroup students indicating a preference to read first more than explore visuals. Nonetheless all

students in the study mentioned the engagement and interaction that they have with visuals in their various textbooks.

Brill, Kim, and Branch (2007) discussed visual literacy as an interpretive process whereby one must appreciate the content and purpose of images. The reading strategies used by the subjects in this study are a means to understanding. For nonverbal subjects the primary strategy was exploring images first, verbal subjects tended to read first, and balanced subjects described using bold headings. McDougall (2007) discussed how visually literate people will identify the structural purpose of images and integrate them into a social and cultural meaning-making process. As Angeli and Valanides (2004) found in their study using text-only verses text and visual instructional materials, it is also important to consider the predisposition of students regarding being field-dependent or field-independent and the impact that may have had on their aversion or tendency to explore images first.

In his 2009 research study Kress compared a multimodal science textbook from 1988 with that of a text only version from 1936. Rather than images being used to reiterate information already address in the text Kress found a deeper and more complex cognitive interaction occurring. The images in concert with the written text required a new set of cognitive skills. These findings and the ones regarding multimodal, visual literacy skills support the findings of this study. Students in the different subgroups had varying tendencies and predispositions to engage with textbook images as a first reading attack strategy.

Research Question Two

Potential depth in graphic novels. The subjects in this study expressed a clear and consistent attitude that graphic novels can be used as a meaningful and effective teaching tool. The subjects indicated that the illustrations in a graphic novel can use symbolism and metaphors to convey complex messages and relationships. Goldsmith (2002) described a myriad of

complex skills required to read a graphic novel. Not only must the reader bridge the meaning between panels in a graphic novel but they must interpret facial and body expressions, decipher symbolism, postures, and other social nuances. Along with this visual analysis a reader must synthesize the visuals with the text. Werner (2004) describes the combination of these two messages into a new one with its own meaning.

This study used a highly symbolic graphic novel wrought with metaphors in an attempt to describe a tumultuous and transformative time in American history. *The United States Constitution: A Graphic Adaptation* was written by Jonathan Hennessey and illustrated by Aaron McConnell in a unique, collaborative effort. Using the elements of images and text as what McCloud (1993) calls its vocabulary and the intertextuality of these two as its grammar Hennessey and McConnell created a rich text to convey this time in history and to engage middle school students in a meaningful way. Findings regarding the attitude students have towards graphic novels in this study support what researchers and authors like McCloud (1993), Eisner (2001,2006), and Kress (2003, 2009) have reported. When presented together in a thoughtful and meaningful way, images and text present information in a unique manner, one that requires a set of visual literacy skills to interpret accurately.

Importance of storyline in maintaining reading focus. The question of motivation became a theme central to the focus group interviews. After all the goal of the study was to explore how students with different learning styles interact with a highly visual instructional tool, a graphic novel. Would images motivate some students more than others? While the images were engaging for many of the students, what emerged as stronger motivator was students' perception of a good narrative. Findings in this study suggested that a strong storyline was critical for the subjects to maintain reading focus. These findings are well supported by the review of literature.

The relationship a reader develops with a story is deeply rooted in what Rosenblatt (1978) described as the reader response theory, the meaning the reader draws out of the text based on their life experiences. All of the experiences that people have are laid out in their own personal narrative. This narrative is something Fischer (1989) described as a universal paradigm that all humans possess and is thereby something that all humans engage with when woven into the images and writings we are presented with. As the subjects in this study discussed the importance of a good story in maintaining their reading focus they did so through the lens of eleven separate narratives.

Shunk (1991) and Bandura (1977) found that efficacy was a strong determinant of a student's reading motivation. Wigfield and Eccles (2000) build upon this theory to develop their expectancy-value theory. This theory states that a student's motivation to read is not only determined by how well they expect to perform the task, but also by the value they assign to the task. As an intrinsic component to the value assigned, the connection one has to the reading's narrative will determine their motivation and ability to maintain focus.

Research Question Three

Prior knowledge impacts symbol recognition. As described earlier in this and the preceding chapter, information gathered about subjects' prior knowledge and their ability to identify and interpret symbols in the graphic novel was unclear. Survey data, interviews, and work samples seemed to indicate that the more a student felt they knew about United States constitutional law, the weaker was their ability to recognize symbols in the book. A more specific set of focus group statements targeted this abnormality. It was found that each of the focus group students acknowledged that having a greater understand and knowledge about a topic would help them read and interpret a graphic novel. They specifically mentioned areas

within the book that included metaphors and symbols that required knowledge of nature, landmarks, and complicated social ques.

Signs and semiotics were recognized in the 1800s as an important area of human nature and the communicative process. Chandler (2007) wrote about Ferdinand de Saussure and his influence on the work of more modern researchers like Halliday (1993) and Kress (2006, 2009). The process of constructing prior knowledge hinges on the fluid interaction that occurs between the producers and the users of communication. In the arts, music, literature, clothing, and architecture of a culture there is an intended message constructed within. The users of this message recreate it with a multifaceted filter unique to their life experiences (Bezemer & Kress, 2010). Students in this study untangled the social, political, economic, and cultural messages within the graphic novel constructed by Hennessey and McConnell. It is possible then to conceive of a situation where the complicated and diverse life experiences represented by the students in the study group were reflected in inconsistent performances while identifying the symbolic meanings of the graphic novel. It is also possible to imagine that representatives from each subgroup understand that their prior knowledge would play an important role in determining their success at such a task. The findings in this study are supported by the review of literature.

Limitations of the Study

The researcher acknowledges limitations in the study. As stated earlier the research design of this study is a qualitative, naturalistic study in which the researcher observed and engaged with the subjects and the topic of study in its natural environment. As such certain criteria are addressed to maintain appropriate levels of trustworthiness as mentioned by Krefting (1991).

A naturalistic, qualitative approach to research poses challenges in terms of establishing reliability and validity, constructs typically applied to quantitative research. As Krefting (1991) points out in her research, often times the aim of qualitative research is to further a discussion on a topic, not to test a hypothesis. Commonly used statistical benchmarks used to establish reliability and validity do not apply. This study will establish trustworthiness using the four-part model developed by Guba. The four aspects of trustworthiness include truth value, applicability, consistency, and neutrality (Guba, 1985).

To establish truth value this study employed several different strategies. Reflexivity and self-disclosure were documented in a researcher field journal. This journal documented the researcher's own background interests, bias, and perceptions and served as a logistical record (Krefting, 1991). This journal was kept digitally on an online research wiki which allowed for time and date stamping and easy access. When this was not available hard copy notes were kept. The researcher also used a digital recording device application to keep track of notes and ideas while in transit. Triangulation of data methods, member checking, and peer examination were also used to help ensure truth value. Member checking occurred frequently following the analysis of transcribed interviews, scoring of work samples, and coding of the data. Member checking occurred in person while visiting the research study classroom, over the phone, and through email as needed. In some cases audio recording were replayed for subjects and work sample responses were reviewed for clarification. The member checking process in this study was exhaustive and notations were made directly onto student observation records, work samples, coding spreadsheets, and other record-keeping forms as to the information discussed and the date when the checking took place. Reviews were also conducted with the cooperating teacher in the study. Meetings focused on work sample creation, curriculum clarification, and

teaching methodology. Method triangulation and reflexive analysis served to establish neutrality.

As Krefting (1991) explained it is not the researcher's job to prove transferability, otherwise known in quantitative research as external validity. It is simply the job of the researcher to provide a thick and dense description of all information so as to allow validity judgments to be made by others. In this way not only population validity concerns are addressed, but also many of the ecological validity related to reproducing the research at a later time and place. Transferability for this study was established by providing very detailed information regarding the subjects and setting in the study. These descriptions took place through a review of records, individualized interviews, and survey data gathered early in the study. The techniques of member checking, multiple student work samplings, cooperating teacher member checking and repeated observations ensured that the data collected were typical for the respondents.

To ensure that the study is consistent and dependable a detailed description of the methodology was provided. While a stepwise replication technique was not employed in this study there was a code-recode timetable established and adhered to. Following coding sessions in the winter of 2011-2012 recoding took place in May of 2012. Peer review throughout the coding periods and triangulation of student records, survey data, multiple observations, individual interviews, work samples, and focus group interview responses were used to enhance dependability (Guba, 1985).

Graphic novels are a new and emerging genre of literature that is being used in the classroom. For many of the students in this study this was the first time they had read a graphic novel. Generalizability of the study's results, albeit a qualitative study, can be threatened due to novelty; however the novelty itself could be generalized to larger populations (Gall, Gall, &

Borg, 2007). To some degree the applicability or generalizability of this study's implications could be considered in terms of the socioeconomic and demographic population from which the subjects were drawn and their learning styles as established through the Otis-Lennon School Ability Test (OLSAT).

Instrumentation

This study used the Otis-Lennon School Ability Test 8th edition to identify the three case study groups of verbal, nonverbal, and balanced for this research. It should be noted that the field of learning styles in education is an emerging one with varied approaches and models. The OLSAT is a commonly used instrument in the participating school district, and one that was readily available. The OLSAT was used as a means of differentiating the learning dispositions of the participants in this study. The OLSAT is, however, limited to examining only the verbal and nonverbal clusters identified in chapter three.

A student work rubric was used to examine work samples that were collected throughout the study. This rubric was developed by the researcher in concert with the cooperating school's reading specialist and social studies teacher. The values established between the domain indicators were intended to serve only as numeric reference points that facilitate within and cross-pattern analysis. It should be noted that no psychometric, theoretical model was used to develop these numbers or the intervals between them and they should be viewed as experimental for the purposes of this study only. Because this study focused specifically on historical perspective and an analysis of images dealing with historical situations this student work rubric assumes a limited level of individual interpretation. As with many instruments careful consideration should be given to the varied social, economic, and cultural backgrounds of participants and how this could affect scoring.

Images and Stereotypes

Images have tremendous power to shape our perspective and activate our memory as was discussed in chapter two. The personal narrative created by our life experiences and the images that are a part of those experiences connect learners to new material. The graphic novel used in this study was masterfully arranged to illicit reflection, prompt analysis, and engage readers with nonfictional content. Symbols and metaphors were employed skillfully to allow for this, however to do so stereotypes are assumed. Care and sensitivity needs to be taken when generalizations like this are used, and perhaps for the purposes of this study it should be viewed as a consideration, rather than a limitation.

Implications of the Study

Results of this study have implications related to the use of graphic novels in the middle school classroom and for the consideration of varying verbal and nonverbal learning styles as represented in the Otis-Lennon School Ability Test.

The Graphic Novel as Instructional Material

Perhaps the most notable and substantial finding that lends itself to considering the graphic novel a credible and effective teaching tool was the attitude almost all subjects had regarding the potential depth and complexity in graphic novels. The middle school subjects in this study cited specific and certain symbols and metaphors as they discussed the messages in *The United States Constitution: A Graphic Adaptation*. Students described how confusion gave way to clarity as they analyzed images of buildings and facial expressions. Others recalled how confusion remained even after explanations were given, but acknowledged the challenge of the experience.

Earlier researchers and authors like McCloud would not be surprised to hear the reaction of these subjects. The graphic artist can employ a multitude of techniques to engage the reader

with purpose. A full range of abstraction adjusts a readers' level of self-involvement like a lens on a camera. More abstract images can drive a reader to interpret meaning while specific or detailed images can speed up the reading. Timeframes and closure are established between the panels, so too is mystery. Coloring can be used to establish mood and atmosphere. Symbols and metaphors can engage a subjects' individual narrative. Even the size and shape of the written letters and text can be used to modulate the tone and level of characters voices (McCloud, 1993).

An additional finding that supports the graphic novel as a valuable instructional tool is how images provided focus and prevented mind wandering in eight of the eleven subjects. Given the visuospatial component of the Baddeley and Hitch (1986) model of working memory in conjunction with researchers' findings correlating reading achievement with working memory, it is important to consider the role a graphic novels can assist in engaging learners. Across verbal, nonverbal, and balanced subgroups students reported that images played an important role in preventing mind wandering and disengagement with reading.

The Graphic Novel as the Subject of Instruction

The novelty and obscurity of the graphic novel in public schools is certain. While titles begin to make their way in the library media centers thanks to progressive media specialists only three of the eleven students in this study had ever read a graphic novel. As pervasive as the obscurity of these books from the shelves so too is the stigma attached to the comic art form. Survey and interview data collected during the study indicated that some students were aware of the bad name graphic novels can get, yet they all expressed respect for the complexity of *The United States: A Graphic Adaptation*. As this study has explained the complexity is not arbitrary.

Visual literacy is multimodal, social, cultural, and is central in the construct of graphic novels. The graphic novel art form cannot be left for random exploration if a quality title is to be used

effectively in the classroom. Educators and students must both be aware of the tools and methods that the graphic artist uses to establish what Eisner refers to as a partnership or tacit cooperation between the graphic novelist and the reader, whereby the novelist make specific design choices with the goal of directing the reader's attention in a particular manner (Eisner, 1996). Professional development would be necessary to properly engage students in a meaningful way.

The Importance of Genre Variety

Multiple findings in this study indicate that classrooms need to offer students a variety of reading material to effectively connect with learners. Findings that demonstrate this need include the importance of a narrative, prior knowledge as a determinant of effective visual analysis, visuals providing reading focus, and genre preferences.

Among the various indicators of reading motivation found by researchers the concept of the narrative spontaneous emerged as a strong determinant of the subjects' motivation to read. Students from each subgroup discussed how a good story was critical for them to maintain interest and engagement with reading. This included two students from the nonverbal subgroup who also indicated that they had a preference for nonfiction material. It should be noted that several students from both the verbal and balanced subgroups stated that they have enjoyed some nonfiction in the past. Thus, while the definition of a good story cannot purely be defined in terms of nonfiction or fiction, verbal or nonverbal, it can be said that there is a relationship all the subjects share with the content they choose.

An individual's personal narrative is a product of their life experiences. The sights, sounds, and meanings that have been socially and culturally constructed become the prior knowledge upon which new learning builds. An affinity for visuals has been established in this study evidenced by eight of the eleven students indicating that images provided focus when

reading. A variety of reading and instructional materials including highly visual graphic novels can help facilitate better learning. As Moss and Hendershot (2002) found visuals were the second strongest indicator of book choices among the students in their two-year study, second to only curiosity and the need to know more.

This narrative love affair provides the motivation for many students to read on. Therefore the reading materials offered to students need to be as diverse and multimodal as the life experiences they represent. An approach to reading instruction that incorporates this broad variation will have greater success in motivating learners.

The Importance of Varied Levels of Visuals and Targeted Instruction

It could be tempting to consider widespread use of highly visual materials for classroom instruction given the results in this study regarding students' use of images to prevent mind wandering. Indications from this study regarding how subjects appreciated the complexity and depth graphic novels could lead an educator to order classroom sets of a touted or awarded nonfictional graphic novel. Findings in this study also indicated that students have a varied approach to content reading from textbooks.

While all students noted the importance of images in their learning nonverbal students generally attacked the reading in their textbook by examining images first. Verbal students tended to read the text first, while the balanced subgroup scanned pages for headings and bolded words. Given the findings in this study it may mean that for content-driven instructional purposes students with a learning style of nonverbal may learn more effectively with highly visual reading material like graphic novels. As this may not be the case for verbal and balanced learning styles a classroom should contain varied selection of reading materials with some student choice.

Consideration for Verbal, Nonverbal, and Balanced Learning Styles

The findings in this study demonstrating differences among the subgroups fell into the areas of genre preference and reading attack strategies. These differences and their implications have been addressed and discussed earlier in this section. Equally important, if not more so, are the implications of the findings pertaining to the similarities amongst these subgroups.

Individual comparisons have been discussed related to how images provide focus for students, the central role that the narrative plays in students' motivation, how prior knowledge influences symbol recognition, and the perceived depth of the graphic novel. Why do students with such varying levels of verbal and nonverbal abilities share these attitudes and positions? When given consideration these findings may imply that the Otis-Lennon School Ability Test may only be a good predictor of school ability and not a good predictor of the complex skills needed to read a graphic novel and required for being visually literate as described by Brill, Kim, and Branch.

A group of acquired competencies for interpreting and composing visible messages. A visually literate person is able to: (a) discriminate and make sense of visible objects as part of a visual acuity, (b) create static and dynamic visible objects effectively in a defined space, (c) comprehend and appreciate the visual testaments of others, and (d) conjure objects in the mind's eye. (Brill, Kim, & Branch, 2007, p.9)

Suggestions for Additional Research

Middle school is a transitional period in a child's social, emotional, and educational life. It is a developmental period for most students when learning to read shifts to reading to learn. The pace of instruction quickens and expectations for independence increases. It is an exciting time for most students, but research has shown that it is also a time when enjoyment of reading

decreases. Is this to say that an enjoyment of learning decreases? The graphic novel is immature and just beginning to offer a range of choices for educators to use in the classroom. There is no genre of hard-copy literature available to an educator that is more contemporary, yet the existing research dealing with graphic novels is sparse. Results from this study provide a convincing argument for the use of graphic novels both instructional material and pleasure reading. Given its potential for depth and complexity, ability to visually assist and connect to a learner's narrative, and its acceptance by verbal, nonverbal, and balanced learning styles the graphic novel warrants further research in a variety of areas.

This qualitative research study captured the essence of eleven middle school students and their interaction with a graphic novel. Additional research with graphic novels could focus on gender differences, variations of content within graphic novels, graphic novels in the primary classroom or ESL classrooms, or use of graphic novels with struggling readers of traditional texts. The remaining portion of this chapter will address specific areas for additional research that arose as a direct result of data gathered and their implications in this study. These areas include how students read differently with varied goals in mind, graphic novels and boys, varied genre of graphic novels, assessment of graphic novel reading, and alternate standardized predictors.

Reading with Purpose

Too often a divide exists between what middle school students choose to read for pleasure and what teachers require them to read for instruction. Conceptual and thematic curriculum with self-selected student reading can bridge this divide, however many middle school classrooms, due to perceived need or lack of ingenuity, still rely on delivery of content through textbooks. As this study indicated students take a varied approach to attacking their reading based on the purpose of the reading. Several students indicated scanning the reading

selection and using images when the targeted task was taking notes for the textbook. The same students suggested that when they needed to study they would read text completely and then use the images and charts to review concepts. Still other students discussed a combination of these strategies dependent upon the goal of the reading. With this in mind further research should explore the place that graphic novels have in the delivery of content-specific and curriculum-related information. A related variation of future research could explore the difference outcomes related to subjects reading a text only and graphic novel version of the same nonfictional topic.

Graphic Novels, Fiction, and Boys

This study has established a strong connection between images and middle school students of verbal, nonverbal, and balanced learning styles as indicated by the Otis-Lennon School Ability Test. The review of literature has demonstrated that boys in classrooms across the United States have a lower reading achievement than girls, a gap that widens as the students get older. This study has indicated and earlier research has also shown that boys chose nonfiction more than girls despite nonfiction being underrepresented in school and classroom libraries (Topping, Samuels, & Paul, 2008). Given the consensus attitude in this study that there is potential for great depth within the graphic novel, and with the above-mentioned findings in mind, further research should explore the graphic novel as a genre that can engage disenfranchised, male readers. Additionally, given boys' preference for nonfiction, if not aversion of fiction, future research should explore the graphic novel as a gateway to enjoying fiction through this visual genre.

Tests for Identification

Standardized tests. This study included learning style subgroups based on verbal and nonverbal scores of the Otis-Lennon School Ability Test, a standardized test administered in the

third, fifth, and seventh grades of the participating school district. Some differences were indicated between learning style subgroups in this study related to genre preference and textbook reading attack strategies. More similarities among the learners were noted, particularly in terms of the graphic novel. Students across subgroups had an appreciation of the graphic novels' depth. They also found images to be helpful in maintaining focus during reading. All members of the focus group thoughtfully and accurately articulated how their prior knowledge played a part in analyzing symbolism within the novel. These findings indicate that the use of the Otis-Lennon School Ability Test to predict graphic novel skills may not be valid. Further research should explore using a larger sample size with the OLSAT. Additionally research could explore alternative standardized cognitive assessments and subtests as a better measure of a student's graphic reading skills.

Does the unique, intertextual nature of the graphic novel suggest something more exciting? Are the skills needed to effectively read a graphic novel so unique that no standardized test or subtest exists to measure them? This study and the research by Kress (1999, 2003, 2009), Van Leeuwen (2001), McCloud (1993), and others who have explored visual literacy skills, semiotics, and the constructs of graphic novels suggest research in the development of such a test may be necessary.

Formative and summative assessment. This study examined student work dealing with the interpretation of symbols and metaphors in a graphic novel. Subjects were asked to interpret scenes from the graphic novel with open-ended questions and those in a cloze format where text was omitted and they were required to fill in information. The learning measured here was limited to receptive learning only and future research should explore expressive visual literacy as a means to assess students' comprehension of concepts. The creation of graphic art could be

used as a highly effective assessment tool related to complex themes and topics across many academic disciplines.

Chapter Summary

This chapter discussed the findings and implications of the research study. Within the framework of the three research questions the findings were reported and then discussed in terms of the existing literature. Limitations were reported in terms of the study's trustworthiness, and the chapter concluded with the implications of the findings and how they might inspire future studies.

Reading text has been the foundation of classroom education for over a hundred years. Any educator can tell you that if a child learns to read early in their schooling, they stand a much better chance of succeeding in school in later years. Unfortunately we are not born into a white-paged world of letters, phrases, and five-paragraph essays, yet we deliver exciting content in this way. We are born into a world of colors, shapes, smells, sounds, and the multisensory interactions we create meaning from. Graphic novels are a highly engaging and visual tool that engages a learner's narrative with the same shapes, colors, and images that have shaped the narrative of their life. They are limited to expressing sounds and speech through text yet liberated with the ability to weave socially-nuanced symbolism into the conversation with the reader. They can be beautiful, complex, and challenging. If created with purpose and skill and delivered with thoughtful instruction graphic novels could provide rich learning experiences for both eager and disenfranchised students.

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Appendix A. Perceptions of Reading and Graphic Novels Survey

Perceptions of Reading and Graphic Novel Survey

1. Which of the following describes you best as a reader?

Choices
I avoid reading at all costs.
I am a capable, but reluctant reader.
When I have the time I enjoy a good book to pass the time away.
I am an avid reader and seek out opportunities to read new books.

2. Which of the following describes your reading for school?

Choices
When reading long text passages for school I often need breaks, lose focus on the reading, or have to go back and reread passages.
When reading text passages for school I can usually finish and remember most of what I read soon afterward.
When reading text passages I can easily read a lot of information and recall all of it soon afterward.
Other

3. When reading for pleasure, how long do you typically read?

Choices
I would read until someone makes me stop.
A few hours
30 minutes to an hour
A few minutes to 30 minutes
I do not read for pleasure

4. When you begin examining pages in a textbook that contains written text as well as images, how do you attack the information?

Choices
I tend to scan the page for pictures and images that catch my eye and study them first.
I find written headings and titles, begin my reading, and look at the pictures last.
I tend to scan pictures quickly, begin reading, and use the images as they complement the written text.
Other

5. What is the title of a picture that you remember reading and enjoying?

Choices
Open-ended responses

6. What thoughts come to mind when you hear the term “graphic novel”?

Choices
Open-ended responses

7. Have you ever read a graphic novel other than the one you are presently reading in class?

Choices
Yes
No
I am not sure

8. If you answered “Yes” to question 7, what was the title?

Choices
Open-ended responses

9. If you answered “Yes” to question 7, how did it compare to reading a book with only written text?

Choices
Open-ended responses

10. Which do you feel requires more skill, reading a graphic novel or a book with written text only?

Choices
Open-ended responses

11. Do you feel that there is any subject or class where a graphic novel could be useful?

Choices
Yes
No

12. If you answered "Yes" to the above question which class (es) do you feel a graphic novel could be good for?

Choices
world languages
social studies
science
mathematics
language arts - reading
language arts - writing
art
music
physical education
Other

Appendix B. Semistructured Individual Interview Protocols

Semistructured Individual Interview Protocols

How would you describe yourself as a reader? **RQ2**

Do you love to read?

Do you read when you have to only?

Do you avoid reading at all costs?

How would you describe the types of reading that you are required to read in your language arts classes, social studies, science classes? **RQ2**

How do they differ?

How are they similar?

Describe your reading process? **RQ1**

When you look at a new page of material, what do you notice first?

Do you try to picture and imagine in your head as you read?

Does your mind drift and require you to reread pages?

When you read something of your own choice, for pleasure, what types of things do you read?
RQ2

Is it easier to read material you choose, as opposed to school material?

When learning new information, what helps you remember things? **RQ1, RQ3**

How is the reading of this graphic novel different from using other school instructional materials? **RQ1**

How did the increased number of visuals change your reading experience?

How much previous knowledge did you have about the content covered in this graphic novel?

How did this affect your understanding of the content? **RQ3**

Appendix C. Classroom Observation Protocol Sheet

Appendix D. Focus Group Statement Protocols

Focus Group Statement Protocols

Subjects: “Eileen” ##### “John” ##### “Susan” #####

Location: Library Media Center – participating school

Date: February 16, 2012

Focus Group Protocols: The focus group consisted of three subjects chosen specifically because they presented thoughtful, intriguing, insightful, or surprising data throughout the study.

Students also represented one of each of the three learning style subgroups.

Members of the focus group were given a set of statement cards, each one containing a statement that addresses the research questions of the study. Students were asked to rate each statement using a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree) according to their own beliefs. This rating was placed in the upper left corner square on the card.


<input type="checkbox"/>	Statement #1 Graphic novels are like picture books that are only useful for students who do not read as well as other students.
--------------------------	---

2. It takes a long time to read a graphic novel because it involves careful observation and visual analysis.
3. I recognized specific images in the graphic novel from things I learned before.
4. The more you know about a topic like the US Constitution the easier it is to read the graphic novel and understand symbolism.
5. When I read text my mind can wander but it doesn't do this when I read a graphic novel.
6. If I really enjoy what I'm reading it's probably going to be a fictional book in my hands.
7. It doesn't matter if it is fiction or nonfiction, there needs to be a good story told for me to enjoy it.
8. When I read a textbook the first thing I notice and look at are the pictures or charts.

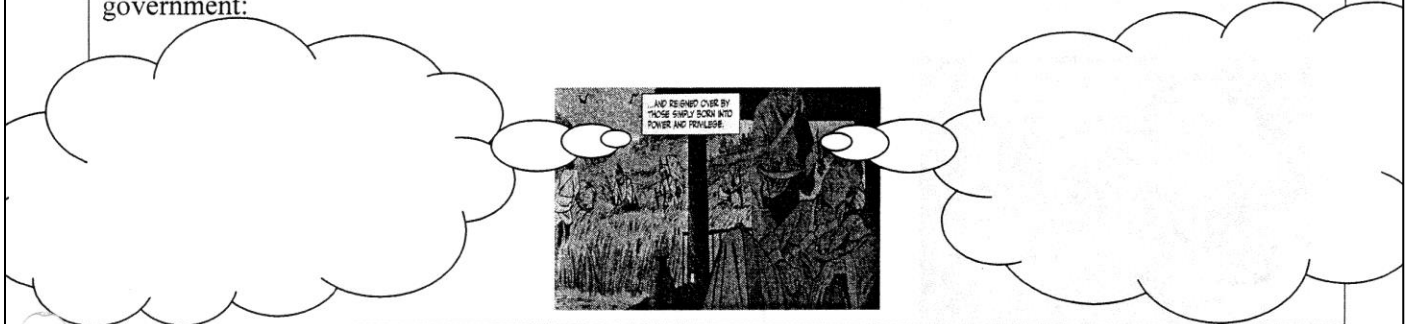
Appendix E: Student Work Sample #1

Name: _____

The United States Constitution: A Graphic Adaptation (p.6-14)

Question	Response
<p>What philosophy/belief does this image represent? Identify and Explain in your own words</p> 	

Fill in the thought bubbles to reveal how leaders and their subjects viewed life under pre-enlightenment government:



Who is this person? What were his beliefs and how did they help start a revolution?



How does this image represent Locke's Social Contract?



The United States Constitution: A Graphic Adaptation (p.6-14)

For what specific reasons did Britain tax the colonies? Why did the colonies find this unjust?



How does this image (and the writing on the table) represent the relationship between Great Britain and the colonies?



How were the colonies able to win the Revolutionary War if Washington only won two Battles?



From what you read, why did the colonists rebel against Great Britain, and how did this represent a significant change in human history and the relationship between people and their government?

Appendix F: Student Work Sample #2 With Rubric

Name: _____
Graphic Adaption: p.15-24

Date: _____ Period: _____

The United States Constitution: A Graphic Adaptation Articles of Confederation and Intro to the Constitution

Identify the Following Events on the Timeline, and include the dates



Describe the basic set up of the US government under the Articles of Confederation



1.) Was there a President under the Articles of Confederation?
(YES) / (NO)

2.) What was the single branch of government under the articles?

3.) What powers did the Federal Government have under the articles?

4.) How many votes did each state have in the Confederation Congress?

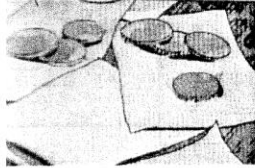
How does this image represent a problem of the Articles of Confederation?



How does this image represent a problem of the Articles of Confederation?



What was this problem of the Articles of Confederation?



Why were Revolutionary War veterans upset? How does this scene reveal the weaknesses of the Articles?



Who was Daniel Shays? How did he reveal the weaknesses of the Articles?



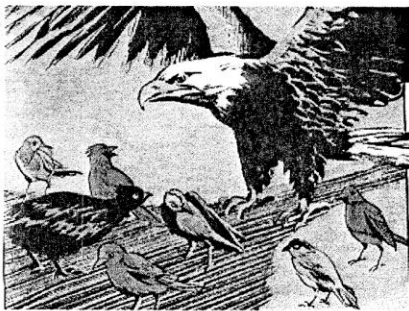
What did George Washington say about the Articles of Confederation? In what ways was he correct?



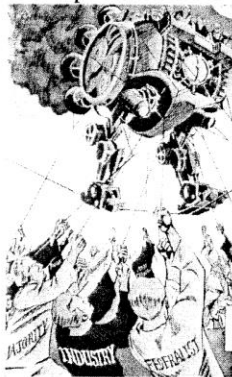
How does this image represent the Constitution that would replace the Articles of Confederation? What do the three items represent?



How does this image represent Federalism under the Constitution? How was this different from government under the Articles



Provide an interpretation for this image



Intertextuality: Interpretation of images in relation to text and other images in the graphic novel						
Panel Attack	Panel Variation	Decoding expression	Color/shading	Metaphors/similes/symbolism	Use of Gutters	Intertextuality
Student demonstrates acute awareness of horizontal, vertical, and/or circular panel order 4	Student recognizes and interprets variation in placement, size, shape... of panels 4	Student identifies and interprets the use of facial and/or body expression in images 4	Student recognizes and interprets the use of color and/or shading to establish mood 4	Student identifies and interprets metaphors, similes, and/or symbolism represented in images and/or text 4	Student recognizes and interprets the use of "gutters" between panels that clarify time, action, space, closure or aspect in plot 4	Student recognizes and interprets elements of text origin, voice, purpose and/or meaning
Student somewhat recognizes horizontal, vertical, and/or circular panel order 2	Student recognizes variation in placement, size, shape... of panels but does not interpret meaning 2	Student identifies but does not interpret the use of facial and/or body expression in images 2	Student recognizes but does not interpret the use of color and/or shading to establish mood 2	Student identifies but does not interpret metaphors, similes, and/or symbolism represented in images and/or text 2	Student recognizes but does not interpret the use of "gutters" between panels that clarify time, action, space, closure or aspect in plot 2	Student recognizes but does not interpret elements of text origin, voice, purpose and/or meaning – or incorrectly interprets elements
Student does not demonstrate awareness of horizontal, vertical, and/or circular panel order 0	Student does not recognize variation in placement, size, shape... of panels and does not interpret meaning 0	Student does not identify or interpret the use of facial and/or body expression in images 0	Student does not recognize or interpret the use of color and/or shading to establish mood 0	Student does not identify or interpret metaphors, similes, and/or symbolism represented in images and/or text 0	Student does not recognize or interpret the use of "gutters" between panels that clarify time, action, space, closure or aspect in plot 0	Student does not recognize or interpret elements of text origin, voice, purpose and/or meaning –

Authority Independence	Global Transference	Integration	Pace
Student demonstrates an ability to skillfully bridge meaning when author withholds explicit information in text or images 4	Student is able to effectively transfer themes in graphic novels to their surrounding world 4	Student skillfully draws on prior knowledge of content found in graphic novels to establish meaningful connections 4	Student slowly and patiently reads and analyzes the panels and pages of the graphic novel allowing for thoughtful internalization 4
Student attempts to bridge meaning when author withholds explicit information in text or images with moderate success 2	Student is able to transfer themes in graphic novels to their surrounding world with moderate success 2	Student attempts draws on prior knowledge of content found in graphic novels to establish meaningful connections with limited success 2	Student reads and scans panels and pages briskly, missing some details and information 2
Student does not bridge meaning when author withholds explicit information in text or images 0	Student is not able to transfer themes in graphic novels to their surrounding world 0	Student does not draw on prior knowledge of content found in graphic novels to establish meaningful connections 0	Student quickly reads and skims panels and pages, missing large amounts of critical information 0

Appendix G: Student Work Sample #3 With Rubric

Bill of Rights

Graphic Novel Activity

For each of the following amendments there is a series of panel from the graphic novel with words missing from the narration boxes or speech bubbles. Use the lines below the panels to fill in the missing information. A star ☆ indicates missing words.

First Amendment

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

The graphic novel panels for the First Amendment activity consist of three panels and a large empty box below them. Panel 1 shows a man speaking with a narration box: "GOVERNMENT MAY PUT REASONABLE RESTRICTIONS ON CERTAIN 'CLASSES' OF SPEECH LIKE..." and a missing word box: "...UNLAWFUL SPEECH MEANT TO GET" with a star and the number 1. Panel 2 shows a man holding a sign that says "GOVERNMENT SCIENTIST IS SAY FOR CHINA" with a missing word box: "...DEFAMATORY SPEECH" with a star and the number 2. Panel 3 shows a man speaking with a missing word box: "...HATE SPEECH" with a star and the number 3, and a speech bubble with a star and the number 4. Below the panels is a large empty rectangular box for the student's answer.

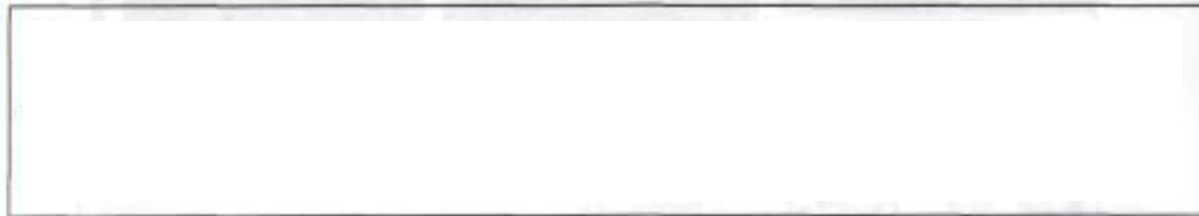
Second Amendment

A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

The graphic novel panels for the Second Amendment activity consist of three panels and a large empty box below them. Panel 1 shows a man speaking with a narration box: "WE HAVE BEEN BEFORE THESE WERE POLICE FORCES OR A MILITARY..." and a missing word box: "THE MILITIA WAS AN INSTITUTION IN SOCIETY ITS MEMBERS ORGANIZED TO PROTECT THEIR FARMS AND TOWNS. THEY WERE NOT VIGILANTES." with a star. Panel 2 shows a man speaking with a missing word box: "THEY WERE ARMED CIVILIANS WITH VESTED INTERESTS IN THEIR COMMUNITIES." with a star. Panel 3 shows a man speaking with a narration box: "WHAT AMERICANS (AND BRITISH SUBJECTS BEFORE THEM) DISTASTED MOST WERE" with a star, and a missing word box: "AND NO LOYALTY TO ANYONE BUT THOSE WHO RAN THEM." with a star. Below the panels is a large empty rectangular box for the student's answer.

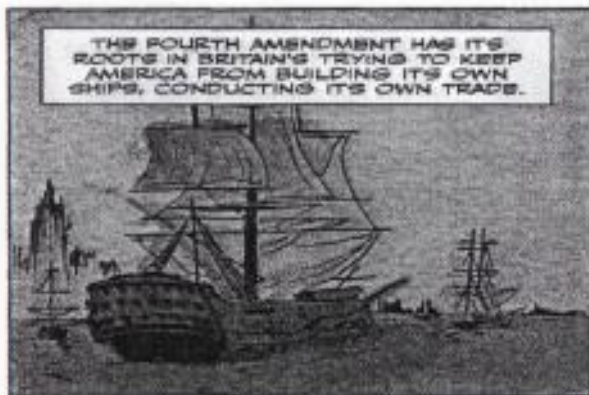
Third Amendment

No Soldier shall, in time of peace be quartered in any house, without the consent of the Owner, nor in time of war, but in a manner to be prescribed by law.



Fourth Amendment

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.



Fifth Amendment

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.



Sixth Amendment

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the Assistance of Counsel for his defense.



Seventh Amendment

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any court of the United States, than according to the rules of the common law.



Eighth Amendment

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.



Ninth Amendment

The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.



Tenth Amendment

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.



Decoding expression	Metaphor /symbolism recognition	Authority Independence
Student identifies and interprets the use of facial and/or body expression in images 4	Student identifies and interprets metaphors, similes, and/or symbolism represented in images and/or text 4	Student demonstrates an ability to skillfully bridge meaning when author withholds explicit information in text or images 4
Student identifies but does not interpret the use of facial and/or body expression in images 2	Student identifies but does not interpret metaphors, similes, and/or symbolism represented in images and/or text 2	Student attempts to bridge meaning when author withholds explicit information in text or images with moderate success 2
Student does not identify or interpret the use of facial and/or body expression in images 0	Student does not identify or interpret metaphors, similes, and/or symbolism represented in images and/or text 0	Student does not bridge meaning when author withholds explicit information in text or images 0

Appendix H: Cover Letters/ Consent Forms



Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810

February 2011

Dear Dr. Richards:

I am currently enrolled in the doctoral program for Instructional Leadership at Western Connecticut State University. This program requires that I design and implement a dissertation research study. The purpose of the study is to determine the potential benefits using graphic novels with middle school students.

A variety of instruments will be used in this qualitative study. A review of students' *Otis-Lennon School Ability Test* (OLSAT) will assist in drawing out a sample group of six to nine eighth-grade students. The *Reader Self-Perception Scale* (RSPS) will determine students' attitudes regarding their own reading, and will assist in determining the study group. Classroom observations, student interviews, and review of student class work will revolve around the use of the book *The United States Constitution: A Graphic Adaptation*. The *Reader Self-Perception Scale for Graphic Novels* (RSPS-GN) will assess the study groups' attitudes regarding reading graphic novels, and will assist in selecting a focus group of three to four students.

Students who agree to participate will be interviewed in a central school location (library media center) and time will be selected so as not to interrupt their academic schedule. Student names will be numerically coded and as a result privacy will be protected. All subjects' identity will be maintained in a secure location. These efforts will maintain confidentiality.

This research study has been reviewed and approved by Western Connecticut State University's Institutional Review Board. Results of this study will enable educators to better understand the benefits of using graphic novels for instructional purposes. Participation in this study is completely voluntary. All field notes, interview recordings, and transcriptions will be coded to ensure that responses are strictly confidential.

I wish to thank the Wilton Public School district for considering participation in this study and for contributing to the body of research that supports this progressive and emerging field of literacy. If you have any questions, please feel free to contact me or my primary advisory.

Sincerely,
John E. Priest
priestj@wilton.k12.ct.us

Karen Burke, Ed.D
burkek@wcsu.edu

I agree that the study described above can be conducted in the Wilton Public Schools.

Please Print Name

Signature

Date

Department of Education and Educational Psychology



181 White Street
Danbury, CT 06810

February, 2011

Dear Mrs. Harris,

This cover letter and the accompanying consent form are intended to encourage participation in my doctoral research study in instructional leadership at Western Connecticut State University.

The purpose of the study is to determine the potential benefits of using graphic novels in the middle school classroom. Based on your prior expressed interest, I have contacted, and received permission for participation from your school district's superintendent, Dr. Gary Richards (see enclosed sample of letter).

A variety of instruments will be used in this qualitative study. A review of students' *Otis-Lennon School Ability Test* (OLSAT) will assist in drawing out a sample group of six to nine eighth-grade students. The *Reader Self-Perception Scale* (RSPS) will determine students' attitudes regarding their own reading, and will assist in determining the study group. Classroom observations, student interviews, and review of student class work will revolve around the use of the book *The United States Constitution: A Graphic Adaptation*. The *Reader Self-Perception Scale for Graphic Novels* (RSPS-GN) will assess the study groups' attitudes regarding reading graphic novels, and will assist in selecting a focus group of three to four students.

Students who agree to participate will be interviewed in a central school location (library media center) and time will be selected so as not to interrupt their academic schedule. Student names will be numerically coded and as a result privacy will be protected. All subjects' identity will be maintained in a secure location. These efforts will maintain confidentiality. Copies of the results of the study will be made available to you. Please indicate your interest in receiving your data on the consent form.

Thank you for your consideration, cooperation, and contribution to this research study. Please read the attached consent form, sign and return to me.

Sincerely,

John E. Priest
priest@wilton.k12.ct.us

Karen Burke, Ed.D
burkek@wcsu.edu

- I would like to receive results of this research study.
- I would like to receive data for my school.

Participant Signature _____ Date _____



Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810

February, 2011

Dear Mrs. Harris,

I am currently enrolled in the doctoral program for Instructional Leadership at Western Connecticut State University. This program requires that I design and implement a dissertation research study. The purpose of the study is to determine the potential benefits using graphic novels with middle school students.

A variety of instruments will be used in this qualitative study. A review of students' *Otis-Lennon School Ability Test* (OLSAT) will assist in drawing out a sample group of six to nine eighth-grade students. The *Reader Self-Perception Scale* (RSPS) will determine students' attitudes regarding their own reading, and will assist in determining the study group. Classroom observations, student interviews, and review of student class work will revolve around the use of the book *The United States Constitution: A Graphic Adaptation*. The *Reader Self-Perception Scale for Graphic Novels* (RSPS-GN) will assess the study groups' attitudes regarding reading graphic novels, and will assist in selecting a focus group of three to four students.

Students who agree to participate will be interviewed in a central school location (library media center) and time will be selected so as not to interrupt their academic schedule. Student names will be numerically coded and as a result privacy will be protected. All subjects' identity will be maintained in a secure location. These efforts will maintain confidentiality.

This research study has been reviewed and approved by Western Connecticut State University's Institutional Review Board. Results of this study will enable educators to better understand the benefits of using graphic novels for instructional purposes. Participation in this study is completely voluntary. All field notes, interview recordings, and transcriptions will be coded to ensure that responses are strictly confidential.

I wish to thank the Wilton Public School district and Middlebrook School for considering participation in this study and for contributing to the body of research that supports this progressive and emerging field of literacy. If you have any questions, please feel free to contact me or my primary advisory.

Sincerely,

John E. Priest
priestj@wilton.k12.ct.us

Karen Burke, Ed.D
Burkek@wcsu.edu

I agree that the study described above can be conducted at Middlebrook School.

Please Print Name

Signature

Date



Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810

February, 2011

Dear Teacher,

This cover letter and the accompanying consent form are intended to encourage participation in my doctoral research study in instructional leadership at Western Connecticut State University. The purpose of this study will enable educators to better understand the benefits of using graphic novels in the middle school classroom. Participation in this study is completely voluntary.

This study is dependent on participation of both principals and teachers. Your principal has agreed to participate.

A variety of instruments will be used in this qualitative study. A review of students' *Otis-Lennon School Ability Test* (OLSAT) will assist in drawing out a sample group of six to nine eighth-grade students. The *Reader Self-Perception Scale* (RSPS) will determine students' attitudes regarding their own reading, and will assist in determining the study group. Classroom observations, student interviews, and review of student class work will revolve around the use of the book *The United States Constitution: A Graphic Adaptation*. The *Reader Self-Perception Scale for Graphic Novels* (RSPS-GN) will assess the study groups' attitudes regarding reading graphic novels, and will assist in selecting a focus group of three to four students.

Students who agree to participate will be interviewed in a central school location (library media center) and time will be selected so as not to interrupt their academic schedule. Student names will be numerically coded and as a result privacy will be protected. All subjects' identity will be maintained in a secure location. These efforts will maintain confidentiality.

Thank you for your consideration, cooperation, and contribution to this research study. Please read the attached consent form, sign and return to me.

Sincerely,

John E. Priest
priest@wilton.k12.ct.us

Karen Burke, Ed.D
burkek@wcsu.edu



Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810

February, 2011

Dear Teacher,

I am currently enrolled in the doctoral program for Instructional Leadership at Western Connecticut State University. This program requires that I design and implement a dissertation research study. Please accept this letter as my formal request for you to take part in this qualitative, research study. This research will take place in the months of September to November, 2011.

The purpose of this study will enable educators to better understand the benefits of using graphic novels to assist instruction in the middle school classroom. Particular attention will be paid to varying cognitive abilities of students and their perceptions of using graphic novels as a learning tool. Review of student records, classroom observations, and student interviews will be used to collect data regarding this emerging field of instructional literacy.

This research study has been reviewed and approved by Western Connecticut State University's Institutional Review Board. Results of this study will enable educators to better understand how graphic novels can assist certain students in their learning.

Participation in this study is completely voluntary. All data gathered through interviews and class room observations will be coded to ensure that all responses will be held strictly confidential. A copy of the results will be available upon request.

If you have any questions, or would like further information about the study, please contact me via email me at the following email address;
priestj@wilton.k12.ct.us

Thank you for your consideration, cooperation, and contribution to this research study.

Sincerely,

John E. Priest

Participant Teacher Name _____
(please print)

Participant Teacher Signature _____ Date _____



Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810

February, 2011

Dear Parent or Guardian,

My name is John Priest, and I am a sixth-grade teacher at Middlebrook School in Wilton, CT. I am also enrolled in a doctoral program at Western Connecticut State University (WCSU). This cover letter and the accompanying consent form are intended to encourage participation in my doctoral research study in instructional leadership at WCSU. The purpose of this study will enable educators to better understand the benefits of using graphic novels in the middle school classroom. Participation in this study is completely voluntary. This study is dependent on participation of the superintendent, principal and teacher. Each of the above-mentioned has already agreed to participate.

Graphic novels are fictional and nonfictional book-length narratives that often remind people of comic books. They use visual metaphors and symbolism to convey their message and are becoming quite popular with teens and young adults. The number of graphic novels has multiplied in recent years including the book *The United States Constitution: A Graphic Adaptation*. It is this book that compliments your child's eighth-grade curriculum which will be featured in the study.

A variety of instruments will be used in this qualitative study. A review of students' *Otis-Lennon School Ability Test (OLSAT)* will assist in drawing out a sample group of six to nine eighth-grade students. The *Reader Self-Perception Scale (RSPS)* will determine students' attitudes regarding their own reading, and will assist in determining the study group. Classroom observations, student interviews, and review of student class work will revolve around the use of the book *The United States Constitution: A Graphic Adaptation*. The *Reader Self-Perception Scale for Graphic Novels (RSPS-GN)* will assess the study groups' attitudes regarding reading graphic novels, and will assist in selecting a focus group of three to four students.

Students who agree to participate will be interviewed in a central school location (library media center) and time will be selected so as not to interrupt their academic schedule. Student names will be numerically coded and as a result privacy will be protected. All subjects' identity will be maintained in a secure location. **These efforts will maintain confidentiality and participation in the study is completely voluntary.**

This research study has been reviewed and approved by Western Connecticut State University's Institutional Review Board. Results of this study will enable educators to better understand how graphic novels can assist certain students in their learning.

Thank you for your consideration, cooperation, and contribution to this research study. Please read the attached consent form, sign and return to me.

Sincerely,

John E. Priest
priest@wilton.k12.ct.us



Parental Consent Form

February, 2011

Dear Parent or Guardian,

I am currently enrolled in the doctoral program for Instructional Leadership at Western Connecticut State University. This program requires that I design and implement a dissertation research study. This research will take place in the months of September to November, 2011.

The purpose of this study will enable educators to better understand the benefits of using graphic novels to assist instruction in the middle school classroom. Review of student records, classroom observations, and student interviews will be used to collect data regarding this emerging field of instructional literacy.

Participation in this study is completely voluntary. The student data will be coded to ensure that all responses will be held strictly confidential. A copy of the results will be available upon request. You may decide to withdraw your child from the data collection process at any time. If you withdraw your child from the data collection process, this will not change your child’s school program in any way or affect my child’s grades in school. You may contact the Project Director, John Priest, at any time and receive a final report of the research results in aggregate form upon request.

This research study has been reviewed and approved by Western Connecticut State University’s Institutional Review Board. If you have any questions concerning the IRB research application process, please call the WCSU Office of Sponsored Programs and Research at (203) 837-8944.

Thank you for your consideration, cooperation, and contribution to this research study.

Sincerely,

John E. Priest
priest@wilton.k12.ct.us

If you agree to have this information collected about your child, please complete the following information. Your signature indicates that the research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. A copy of this form has been included for your records.

Print your child’s name

School

Grade Level

Print your name (Parent/Guardian)

Your Signature

Date



Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810

Student Information and Form to Participate in a Research Study

February, 2011

Dear Student,

My name is Mr. Priest and I am a sixth-grade teacher. I am also a student at Western Connecticut State University and I am conducting a research study as part of my doctoral program. I am writing this letter because I would like you to be a part of my study. I will be sending home a permission letter to your parent(s), but I would first like to tell you about my study.

Over the past few years I have noticed a lot of students reading graphic novels. These are books that resemble comic books. They are full-length stories that use illustrations, speech bubbles, and narration boxes to tell the story. Some of these titles are simple, but some others are very detailed and sophisticated. What I would like to do is select a handful of students to talk to while you are reading one of the more sophisticated graphic novels in your social studies class. The name of the book is called *The United States Constitution: A Graphic Adaptation*.

I will be asking you to take a 15-minute survey called the *Reader Self-Perception Scale*. This asks you questions about how you read. Another survey you will take is called the *Reader Self-Perception Scale for Graphic Novels*. Again, this should take about 15 minutes. I will also be observing some class lessons when you read the graphic novel, looking at some of the work you complete related to the reading, and interviewing you so that you can tell me your reactions to the book.

I will not use your name in the study, but instead I will assign you a number. The tests we use will have nothing to do with report card grades or homework. Interviews will take place in your library media center and I will not have you miss any academic classes during the study. All of the information will be kept private. **Participation in my study is completely voluntary, and if you have any questions now or during the study you can contact me.**

Thank you for considering helping me with my study.

Sincerely,
Mr. Priest
priestj@wilton.k12.ct.us

If you would like to be in my study, please print and sign your name below.

Appendix I: Themes and Categorical Codes

Categorical Code	Themes
ER-FNF: Enjoy reading fiction and nonfiction	reading attitude
ER-F: Enjoy reading fiction	reading attitude
ER-NF: Enjoy reading nonfiction	reading attitude
IL-S: interest level story- enjoys specific story	reading attitude
IL - SC: interest level specific content motivates	reading attitude
MW-RR: mind wandering reread	reading focus
SRF-CS: strong reading focus - content specific	reading focus
SRF: strong reading focus	reading focus
SRF-I: strong reading focus-images	reading focus
AL: auditory learning	learning style
VL: visual learning-non-text	learning style
TA: text attack first in reading	learning style
TA-SBH: text—attack -scan bold headings	learning style
IA: image attack first in reading	learning style
PA: purpose attack of reading	learning style
SM: strong memorization	learning style
SMF: symbol and metaphor provide focus	visual literacy
SMR: symbol or metaphor recognition	visual literacy
SMC: symbol or metaphor confusion	visual literacy
GNS: graphic novel same as all-text	graphic novel attitudes
GN-D-I:graphic novel demanding-interest	graphic novel attitudes
GN-D-D:graphic novel demanding-dislike	graphic novel attitudes
GNE: graphic novel ease	graphic novel attitudes

LCPK: low constitutional prior knowledge	prior knowledge
MCPK: moderate constitutional prior knowledge	prior knowledge
HCPK: high constitutional prior knowledge	prior knowledge
RLC: real life connections	prior knowledge
SCC: school content connections	prior knowledge
PKA: prior knowledge assists learning	prior knowledge
