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# How Graphic Novels Affect Reading Comprehension and Memory Recall of Story Elements for Language Learners

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# HOW GRAPHIC NOVELS AFFECT READING COMPREHENSION AND MEMORY RECALL OF STORY ELEMENTS FOR LANGUAGE LEARNERS

by Stephen Meuer

A Capstone submitted in partial fulfillment of the requirements  
for the degree of Masters of Arts in English as a Second Language

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How Graphic Novels Affect Reading Comprehension and Memory Recall of Story Elements for Language Learners.

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## CHAPTER ONE: INTRODUCTION

Ever since I can remember, I have loved reading. A free reading book could always be found nestled safely within my backpack from elementary school on; staying up past my bedtime with a flashlight under the covers was a common school night occurrence. This led to course loading of literature related courses in high school; I took Honors English, Creative Writing, Dramatic Literature, anything that had to do with reading. In college, I naturally studied English Literature and eventually, after living and teaching abroad, decided that I wanted pass on the joys of reading to others as a career.

As a teacher of English Language Learners in a middle school, I see the myriad of challenges my students face when it comes to reading, many more challenges than I ever faced. Some problems are difficult to counteract, and stem from a student's extreme poverty and lack of access to reading resources, parents who themselves are not literate, or sheer lack of free time due to various family responsibilities. Other equally difficult problems in reading and reading comprehension can stem from interrupted schooling, native language interference, and an overall lack oral proficiency in English to begin with. Despite my enthusiasm and feelings of high regard towards reading in the classroom, my attempt to choose culturally relevant and interesting stories for my students, and my providing an extensive classroom library, I continued to have trouble getting students to read. Furthermore, when they did read, I was having trouble getting students to explain what they read. I began to search for possible scaffolds as a solution and remembered that it was not *Goosebumps* or *Encyclopedia Brown* that got me started with reading, it was *The X-Men*, *Batman*, *The Adventures of Tintin*, and *Swamp Thing* that had me reading on a daily basis, and more importantly, talking at great lengths to my parents about what I had just read, and at a young age as well. Comic books were my entryway to the world of literature. I then wondered if comic books could be used for English Language Learners in the same manner.

Ever since these questions crept into my mind, I have done my best to infuse my classroom library with graphic novel adaptations of classic literature; student-friendly comic books sit in a tray on my desk for students to take and read at their leisure.

Posters of Batman reading in his Batcave and graphic novel depictions of Percy Jackson line the walls of my classroom. If there was a novel that was required reading according to the curriculum, I searched for a graphic novel adaptation that could be used in tandem to help foster meaning and understanding. Eventually, I began to notice that the vibrant art contained within these books not only created interest in the stories (as seen by the sheer amount of classroom library check-outs,) but, more importantly, had students talking about the stories and giving mini-synopses to their peers to encourage or discourage checking the book out. Students had their favorites, many rereading the graphic novels several times over. In contrast with the traditional text of years before, it was not as hard for me to imagine some of these students reading these graphic novels under their covers, flashlight in hand, far past their bedtime.

I knew I was on to something, but I wanted to know more. I wanted to discover just how much more graphic novels could be used, not only in my sheltered language learner classroom, but also in content classrooms as well. Visuals, after all, are commonly used to help language learners within the classroom...and what are graphic novels but simply literature with added visual aids? I wanted to know if graphic novels could work as a bridge between picture books and traditional literatures. I asked began to ponder if graphic novels were an untapped resource in the world of ELL education, and if they could have any effects on reading comprehension. Would students have a better understanding of the content of a story when reading a graphic novel? Would their understanding be as good as if they read using the traditional novel? I questioned if students would still be able to grasp the important plot elements of the story, or if reading the graphic novel version would not allow for as deep of an understanding of the story. It was these initial questions, as well as my own various classroom adaptations that resulted from them, that served as the catalyst for my initial research and eventually my two research questions.

### **Retells and Memory Recall in Reading Comprehension**

As a language instructor in a public school, helping EL students grow in their reading level is a huge part of my job. Unfortunately, reading is often an incredible challenge for many students as it is very dependent on each student's productive language abilities in both their first language (L1) as well as their acquisition of their target language of English. Add to that the already difficult nature of measuring reading comprehension in

general and it is easy to see how complex the issue really is. It is for this reason I sought to find an appropriate way to best measure my students' responses to their readings. Oral explanations struck me as too demanding and possibly stressful for students to accurately retell the events of a chapter. I finally settled on the use of a *written retell* for students, a format I feel can provide the appropriate scaffolds needed for language learners, and also allow them a great deal of independence and time to produce good work. For the purpose of my own study, I will use *retell* to describe the reading comprehension task of written expression itself, and *recall* or *memory recall* to describe the aspect of memory usage required to complete the task. In my study, I will specifically focus on how the sole task of retell, in the broad swath of various reading comprehension measures, is affected by the use of a graphic novel format. I hope to determine if students will be able to retell to completeness the important story elements of the chapter. I will also look at the effects the medium has on memory recall.

### **Graphic Novels in the Classroom**

What is a graphic novel? If you were to ask a librarian or bookstore clerk this question, you might be surprised by the variety of definitions you receive.

“It is a big comic book. “

“ It is a collection of those stories containing guys with capes and masks. “

“ They can be found next to the children section.”

These are some real answers I received from real people when posing the question that started this section. In truth, the real definition is far more complex, and sadly, the answers I received contribute to what I feel is the continued misunderstanding of a useful scaffold and untapped resource for struggling readers, ELL or not. It is these exact continued misunderstandings that pushed me to pursue study in the potential of comics and graphic novels. I often wondered how some forms of art were valued over others, and how when it came to education, shouldn't the value be based solely on results and not personal opinions or possible misconceptions?

In Chapter 2, I will continue to delve deeper into the various theories that exist regarding the use of graphic novels in education, to show how graphic novels may benefit ELLs in and out of the ELL classroom and argue for their implementation as a scaffold.

### **Role/Background of the Researcher**

As my background as a middle school ELL teacher should make evident, I work to not only teach students the intricacies of the English language and its usage, but also to teach students how to successfully use that language in the various academic settings, such as the mainstream and content classes they find themselves in throughout the school day. Furthermore, my work includes training content teachers to use specific strategies, scaffolding, and differentiation in their classrooms in order to best facilitate ELL student success. Many of my colleagues that instruct such content courses as English, social studies and science express concern for ELL success in their classrooms, most often as a direct result of low-reading levels and limited reading comprehension. It is this focus on my ELL teacher role of providing tools to other educators, coupled with the concern for low reading comprehension that has led me to my study on graphic novels as a potential tool for ELLs.

In addition, it is important for me as a researcher to recognize the various possible benefits of this study for the students themselves. Student interest has a great effect on the motivation of students, dictating how much students are willing to read in their free time or continue past a particularly challenging excerpt. Casual observation of student reading habits in my classroom, as well as the number of graphic novels checked out of the classroom and school libraries by my ELL students have shown a high amount of student interest already present in regards to graphic novels.

My role as a researcher in this study was to see if graphic novels can positively affect students' reading comprehension of a passage and, therefore, become a tool that can be used in various English, Social Studies, and even Science classes to assist reading comprehension. Since the students participating in this study were members of my pull-out ELL classroom, I acted as a both a researcher and participant.

I began this research with initial assumptions and biases regarding the plausible outcomes. I believed, first of all, that comic books and graphic novels had an added visual aspect that would naturally lend itself to increased understanding of the content for ELL students. I also made assumptions that a majority of students would benefit from this provided scaffold, as shown through improved retells in comparison to the reading of the traditional novel format. Finally, I assumed that due to the aforementioned visual nature of graphic novels, students who read the graphic novel

format would be able to better recall vital information after some time has passed in contrast to those students who read the text-only novel format.

### **Guiding Questions**

With this research, I focused on the possible effect of the medium of graphic novels on reading comprehension for ELL students in contrast to traditional text. I chose this because I wanted to find out how graphic novels can affect ELL reading comprehension in order to determine possible differentiation, scaffolding, and adaptive strategies that can be made to be inclusive of ELL students who are low readers or have difficulty with reading comprehension. Graphic novels and comic books serve as a natural mid-point between picture books and traditional literature, and therefore stood out as an under-utilized resource of ELL use in the classroom. Due to this, I am interested in comparing performance of the reading comprehension task of retelling between traditional literature and graphic novel adaptations of the same piece of literature.

In this study, I hope to find insight on the following questions:

1. How can graphic novels affect the proficiency of reading comprehension, as shown by increased performance on the task of retelling, for middle school English Language Learners in comparison with a text-only novel? In what ways can the memory recall of a chapter's events be affected by the use of a graphic novel adaption in contrast with the traditional text format?

### **Chapter Overviews**

In this chapter, I discussed my interest in looking at how graphic novels may be able to assist ELL students within both the ELL classroom and content classroom. I introduced my personal connection with reading as well as my background as an ELL teacher in a middle school setting. I connected this to my desire to help my ELL students overcome the many factors that influence poor reading and reading comprehension. I went on to explain reading comprehension from an ELL lens, and how retell is connected to determining reading comprehension. I further described the connection that exists between the uses of visuals in the ELL classroom, and connected this concept of the use of visuals to the medium of graphic novels. Finally, I introduced the study, my role in the process through analyzing the student retells, and the biases and assumptions that exist. In Chapter Two, I

provide a review of the literature relevant to reading comprehension, retell, recall, the use of visuals in the ELL classroom, and graphic novels. Chapter Three includes a description of the research design and methodology of the study. Chapter Four presents the results of this study. In Chapter Five I reflect on the data collected and discuss these findings through the lens of possible limitations that exist and implications for future use and possible further research.

## CHAPTER TWO: LITERATURE REVIEW

The purpose of this study is to determine the potential effects graphic novels can have on reading comprehension in the form of retells, as well as any potential effects on the recall of information. The study will attempt to answer

1. How can graphic novels affect the proficiency of reading comprehension, as shown by increased performance on the task of retelling, for middle school English Language Learners in comparison with a text-only novel?
2. In what ways can the memory recall of a chapter's events be affected by the use of a graphic novel adaption in contrast with the traditional text format?

This chapter presents an overview of reading comprehension and, more specifically, how retell and memory recall relate to and measure reading comprehension. It then further discusses the medium of graphic novels, as well as the potential benefits of the use of graphic novels and visuals in the classroom, including research on existing links between visuals and reading comprehension and between verbal and non-verbal systems known as the Dual Coding Theory.

### **Visuals, Comic Books, and Graphic Novels in the Classroom**

**A Brief History of Comic Books and Graphic Novels.** In his graphic novel entitled *Understanding Comics*, Scott McCloud cites Will Eisner, illustrator and recognized "grandfather of the graphic novel," and gives Eisner's definition of comics as "sequential art" (McCloud, 1993, p 5). McCloud does not stop here, however, adding his own working definition of comics as "juxtaposed pictorial and other images in deliberate sequence." (1993). That is, according to McCloud, comics are arrangements of pictures and words arranged side-by side (instead of arranged in rapid succession to depict one "moving"

image as seen in the medium of animation) as an art or story format. So, here we see how graphic novels are in the same family, but still a uniquely different medium from other sequenced illustrations like cartoon animation, however, differences do exist between graphic novels and comic books as well.

One simplistic explanation of a graphic novel is that of a large, full-length work of comic style art that also includes narrative with a beginning, middle and end (Fisher & Frey, 2011). They are a popular and ever-growing medium. The term graphic novel is in the same family as comic books, but did not make an appearance in the vernacular until around 1978 with Will Eisner's publication of *A Contract with God* (Arnold, 2003). The book was serious in nature, and was published as an original trade paperback, thereby disconnecting any ties that may have existed with the traditional serialized comic panel or comic book. The definition of a graphic novel, therefore, shares that of the comic book in terms of its pictorial and textual story format, but differs slightly in its added dimension of the comics being collected and arranged in a book format or anthology. This gives graphic novels a feeling of completeness; the entire story is present from start to finish and can stand alone, unlike the newspaper comic serial shorts or monthly issues of comic books. For the purpose of this research, however, it is easy to see how these definitions are relatively interchangeable. When discussing the visual benefits of a comic book, for example, it can be assumed the same benefits exist using a graphic novel, as the definitions are undifferentiated in regards to the fact that they both include the pictorial and textual story format.

To date, there are graphic novels for just about every subject or literary genre. Original works can deal with a range of relevant and important themes. With works like



Art Spiegelman's *Maus*, which is an artistic revisiting of Spiegelman's father's personal experience during the Holocaust, or Brian K. Vaughan's *Pride of Baghdad*, which acts as an analogy of the war in Baghdad, and which one reviewer described as "... an intense, sad story that is intelligent, relevant, and superbly drawn." it is easy to see how far removed from red tights and evil henchman some of these texts really are (Traeger, 2007, para. 12). In addition to these original literary works, there is a growing market of direct graphic novel adaptations of traditional text novels, with such graphic novel adaptations of *Frankenstein*, *Portrait of Dorian Gray*, *City of Ember*, *A Wrinkle in Time*, *Percy Jackson*, and many more. With the same thought-provoking themes as those present in the original novel and the added scaffold of visuals, it is easy to see the demonstrated worth of graphic novels and possible literary capabilities of their use; graphic novels have the potential to provide support for struggling readers while still working through difficult themes and complicated stories by providing learners the added scaffold of visuals depicting the story.

**The Link Between Visuals and Graphic Novels.** There has been some research that can be linked to graphic novels to argue for support the medium's use in the classroom. Visuals, for example, have long been hailed as powerful aids in assisting students in their reading comprehension or memory recall (eg., Levie & Lentz, 1982; Levin, Anglin, & Carney, 1987) . One proponent of the use of visuals goes so far as to categorize the five ways visuals can aid a reader, citing them as:

- (1) Representation: Visuals can act as a way to repeat, reinforce, or overlap with the text itself.
- (2) Organization: Visuals add to the organization to make the text more coherent.

(3) Interpretation: Visuals act to provide the reader more concrete information within the reading itself in order to aid interpretation of inferences made by the author.

(4) Transformation: Visuals allow readers to focus on the more critical information and store it in a more memorable (i.e. visual) format.

(5) Decoration: Visuals can be used as an aesthetic choice to add interest (Liu, 2004).

It is relevant that in graphic novels, a visual accompanies each individualized piece of text, be it a narrator's description of the setting, an inner monologue, or character speech. Therefore, each and every one of the functions listed above are ever-present within the context of graphic novels, constantly adding to the facilitation of reading comprehension for the entirety of the reading. It seems only natural that, using (3)- Interpretation, for instance, any confusion with the interpretation of the setting as defined in the text, will have a more concrete provision in the accompanying visual representation of the setting. When looking at (4) Transformation, we can even cite a very important and relevant theory regarding visuals and reading comprehension: the dual coding theory of cognition (Paivio, 1971, 1986; Sadoski & Paivio, 2001).

The dual coding theory discusses two separate systems of cognition, the language systems and the imagery system (Paivio, 1971). In much the same way that Liu argues that visuals allow readers to focus on and store information better, Paivio argues with his dual coding theory that we better understand and remember the written word when it comes in tandem with visuals. These are some of the better-known arguments for the beneficial uses of visuals in the classroom.

The various examples given of the merits of visuals in the classroom can easily translate to the visual aspect of comic books and graphic novels. Set foot in any ELL classroom and there will be variety of visuals present, from picture dictionaries, word walls, and graphic organizers, to story charts, mind maps and similar visual scaffolding. Visual scaffolds such as graphic organizers or storyboards help serve a dual purpose of making input more comprehensible through creating visualized depictions of the text as well as how it can be arranged within our thought processes, which can simultaneously remove some degree of affective filter that may be present by allowing students to grasp concepts that may have been too difficult in text-only format (Bruce, 2011). In essence, students who may otherwise have lagged due to language barriers, are now provided with a tool that can allow them to work at the level of their native speaking peers, and then challenge them in their Zone of Proximal Development (Vgotsky, 1978). Taking into account the visuals provided in text from such media as comic books and graphic novels, it is natural to come to the conclusion that graphic novels are simply another form of visual scaffolding. Many have long argued the merits of comics, citing the medium's unique ability to display the relationship between words and visual images simultaneously, allowing readers an easier path to imagine what they read which is a fundamental key to facilitating comprehension (Eisner, 1998). In fact, this path Eisner was talking about seems to naturally assist students with the use of the *visualization reading strategy*, a strategy of forming mental pictures in student minds, which helps students to essentially live the story in their minds as they read (Roe, Smith & Burns, 2005). Roe, Smith and Burns (2005) go on to argue that by doing this they will not only enjoy the story more, but also understand it on a deeper level. Many researchers agree with this idea of pictures facilitating

comprehension, positing that the visual aspect of comics can reduce the cognitive load of what would otherwise be dense text or more sophisticated concepts (Burke, 2012). That is, students who normally may have been overwhelmed by dense text, excess detail or flowery and metaphoric language will have a reduced chance of being overloaded through the use of visuals acting as a scaffold that allows an additional visual channel for comprehension, thereby improving processing.

The phrases “easier path” or “reducing load” might lead some to believe comic books or graphic novels are designated as easy or low-level readers. This is not the case. In fact, many can offer the same reading level as *TIME Magazine*, but simply contain text features within that can help foster increased comprehension (Snowball, 2005). If teachers are aware of the already discussed incredible cognitive demand reading requires, for ELLs especially, the next logical step would be for professionals to pursue a scaffolding option that, through visuals, can increase student comprehension while simultaneously demystifying difficult text (Burke, 2012; Cary 2004). The following are some studies and theories that show how this visual scaffolding, be it through comic books, graphic novels, or visual images, can be used to support ELL reading comprehension.

### **Reading Comprehension, Retell, and Recall**

**Reading comprehension.** The topic of *reading comprehension* in the field of education is a complex and broad one. The actual process of measuring reading comprehension levels, however, is even more multi-faceted and involved. In fact, Fletcher (2006) states, “measurement issues are complicated, reflecting the complex, multidimensional nature of reading comprehension” (p. 323). It seems that there are a myriad of ways for a teacher to measure a student’s reading comprehension; however,

many of these methods have the added bane of being rather informal. These measurements include teacher observation, anecdotal records, student written response, group discussions, retelling, and text comprehension questions; no individual method can serve to evaluate a student's text understanding in whole, as argued by researchers Paris & Stahl (2005) with, "Reading comprehension is multifaceted and cannot be adequately measured by any single approach, process, or test" (as cited in Cohen, Krustedt & May, 2009, p.106). Reading, therefore, is not simply a passive act, but rather a complex, involved, and ongoing process requiring consistent participation from the reader (Kucer, 2005). It is much more than simply looking at the words on the page; instead, it requires reader participation to make meaning of those works. The *making meaning* process is when reading comprehension takes place. To fully read and comprehend a text is a process that involves a great deal of different factors to take place, including not only phonemic, phonic, and vocabulary recognition, but also more involved processes such as fluency, decoding, interpreting, making connections, memory recall, and higher level thinking (Moore & Smith, 2014). In essence, reading is a multi-level process that not only includes the extraction of meaning from the words and context, but the simultaneous construction of meaning from this extraction (Snow and Sweet, 2003).

Researching the complex process of reading and comprehension can shed some light on where potential difficulties for students may lie regarding reading. Reading is a highly active and involved process, requiring a great deal of background knowledge, strategies, and processing components from the participants (Kintsch & Kintsch, 2005). This process, therefore, cannot be simply taught, and interventions cannot be in the form of simple solutions. In order to help our own particular brand of participants (i.e. middle

school language learners), teachers know they will need to combat reading comprehension problems in multiple ways, using an extensive arsenal of interventions including such concepts as increased motivation, pre-teaching of reading strategies, incorporating student prior knowledge to build links, and the use of diverse texts.

When considering the ever-growing category of students labeled ELLs, the process of improving reading comprehension becomes even more difficult, drawing upon a number of additional factors and challenges this particular sub-set of learners face. These challenges may include, but are not limited to, the level of phonological and phonemic awareness the student has mastered in their native language (L1), the ability to transfer their skills from L1 to their target language (L2), the unique nature of student's L1 including the presence of a different alphabet, interrupted schooling, and nonliterate parents (Ford, 2005). Reading and reading comprehension can be incredibly difficult for ELLs, and, due to these possible additional problems resulting from that of language acquisition, possible solutions will require factors independent from the written language itself.

**Measuring reading comprehension.** We have examined how reading comprehension is a complex and involved process, so it only makes sense that the act of accurately measuring and determining a student's reading comprehension is equally complex and involved. There are many ways to measure a student's comprehension of a text, such as informal class discussions, small group activities related to the reading, and even written responses to questionnaires, each one with its own merits and faults in their ability to assess different components or skill areas as they are related to reading comprehension (Westerveld, 2009). Still some other methods of measuring

comprehension in reading research include the use of open-ended questions after completion of a read aloud, the use of multiple choice text comprehension questions, a cloze type procedure referencing the text, student think-alouds, free recalls, and student oral or written retells (Westerveld, 2009; Gromley & Azevedo, 2006). Despite the many different ways to go about measuring student comprehension, it is important to note that they are all unique in how they go about getting results. Some of these methods might heavily emphasize word recognition or decoding over language comprehension; some might do a good job incorporating both word recognition and listening comprehension but rely too heavily on test-taking strategies to display understanding, while others such as class discussion cannot adequately measure all involved. With language learners in particular, there are a number of hurdles that exist between the steps of reading, comprehending, and displaying comprehension to the instructor. It is with these potential pitfalls in mind that the measurement tool chosen was that of a student produced written retell.

**Retell.** In multiple studies on reading comprehension like those by Gambrell Kapinus, and Koskinen, as well as in my own personal practice, there has been one frequently used method of determining a student's reading comprehension, the retell (1991). A retell is a process that occurs after the reading of passage, chapter, or entire story. The process itself requires students to consider the information they read, and summarize (either orally or in writing) what they understand (Fisher & Frey, 2011). While this definition sounds simple enough, many researchers have found the act actually includes a number of higher order thinking skills including schematic processing (organizing your framework of thought to help process further understanding), the ability

to process and filter textual information, the ability to sequence events, and the ability to determine the relative importance of events (Fisher & Frey, 2011). Furthermore, upon the student's own production, the student requires the ability to then recall this important information, as well as the ability to organize it in an understandable and meaningful way (Klingner, 2004). Essentially, in a retell, while it is true that the end result will hopefully be a clear view of a student's understanding of a particular scene or chapter through a summary, the process of the assessment itself requires the student to take the information they just read, internalize and reconstruct that information, and finally recall the information in order to retell it, either orally or through a written format (Cohen, Krustedt & May, 2009). It is through this higher-order thinking process that researchers, myself included, hope to gain an accurate portrayal of true comprehension of a reading.

The retell is a clearly researched and is an often-used assessment of reading comprehension due to its higher-order thinking processes required, as it can be found in a number of research studies on student reading comprehension (Fletcher, 2009; Shaw, 2005; Brown & Cambourne, 1987; Gambrell, Pfeiffer, & Wilson, 1985; Irwin & Mitchell, 1983). In fact, it has been argued that retellings can be more effective in checking for understanding than direct questioning (Gambrell, Koskinen, & Kapinus, 1991).

Researchers feel the act of retelling informs us about a reader's assimilation and reconstruction of the text information, and, therefore, reflects comprehension (Cohen, Krustedt & May, 2009). Being able to "retell" or "recall" could be used to elicit main ideas, give summaries of the content of the story or chapter, or provide a student-friendly restatement of the passage in question (Reed & Vaughn, 2012). The process itself requires a great deal of thoughtful reflection; the student needs to recall or remember the



information read, then, reorganize this information to present it in their own words, and finally work through those ideas to draw their own conclusions on what they read (Klingner, 2004). In essence, retelling strategies have been argued to be a good measure of comprehension, and can serve to help students better remember and understand what they read and would, therefore, be a good choice as a tool for measuring reading comprehension (Shaw, 2005).

**Memory Recall.** Memory recall (sometimes called free recall or recall) is also a factor to be considered when discussing measuring reading comprehension. Memory recall describes the process of remembering certain aspects of the reading in question and, therefore, takes place before the performance of such tasks as retells and think-alouds (Reed & Vaughn, 2012). The ability to accurately retell any aspect of a story will depend to some degree on the reader's ability to remember or recall the information read (Klingner, 2004). Essentially, a student's memory process will undoubtedly affect their results on any retell assessment, so this process cannot be overlooked when discussing a retell.

### **Supporting Reading Comprehension with Graphic Novels**

There are various studies that can easily be linked to support the use of visuals in the form of comic books and graphic novels within the classroom. As previously mentioned in his report, *The Effects of Comic Strips in L2 Learners' Reading Comprehension*, Jun Liu (2004) lists the various ways in which many researchers (e.g. Levie & Lentz, 1982; Levin, Anglin & Carney, 1987) have described how visuals in reading can serve a variety of functions to aid reading comprehension and memory recall. Liu compiles this information into five distinct categories:

(1) Representation: Visuals repeat, reinforce, or overlap with the text.

- (2) Organization: Visuals add organization to the text, making it more coherent.
- (3) Interpretation: Visuals provide concrete information for interpretation.
- (4) Transformation: Visuals aid in focusing on critical information and allowing increased memory retention through a visual format.
- (5) Decoration: Visuals are aesthetically pleasing and can add interest (2004).

What follows will provide more specific evidence of additional research, theories, and studies that can relate directly back to these categories and, more specifically, the effectiveness of visuals in terms of supporting reading comprehension and recall. Due to this study's focus on visuals as aids in relation to reading comprehension and recall rather than student interest or motivation, only categories one through four will be discussed in detail.

**Representation.** The concept of representation can be expressed as the use of visuals as reinforcement of the text, an oft-researched topic. Looking at the world around us, it is easy to see how words and images in general serve to supplement or reinforce each other in order to foster better communication (Cook, 2013). This is seen in the combined use of words and images throughout our daily lives. It is evident in our culture's magazines, periodicals, and online; we even see it in our street signs and product advertising. Combining words and images have been proven highly effective in our day-to-day world, but what about in education? What about graphic novels as visuals?

Interestingly enough, the question about whether comic books and their visual nature can aide in education was discussed as early as 1959 (more than twenty years before the term graphic novel was coined by Will Eisner), when researchers began to look at how the U.S. military used comic books in order to educate their soldiers who were

nonliterate or non-native English speakers (Vacca, 1959). In his research with students in his Spanish classes, Vacca reported that his students claimed some of the comic books read were able to “offer a clearer understanding, a deeper insight into nature, science, geography, biography, history, and patriotism” (1959, p. 291). He also reported how sometimes the increased reading comprehension and the clearer understanding offered by comic books led some students to read the original text afterwards. The overlapping of comic adaptation and traditional text-only literature became a natural result of students feeling more confident in their understanding as a result of their ability to decipher a more difficult text after spending some time with the visuals in the adapted comic books.

Another study by Moss, Lapp & O’Shea further accentuates the way visuals can reinforce the traditional text. In the study, the use of graphic adaptations of Shakespeare’s play *Romeo and Juliet* served to provide reinforcement of the text for students participating in the study, and can prepare them for the original text (2011). The researchers argue that the visuals present in the graphic novel adaptation serve as a “tiered text” or building block that allows students practice with an easier and more scaffolded version of the text that then prepares them for future reading of the more difficult traditional Shakespearean play (Moss, Lapp & O’Shea, 2011). In this way, the visuals enable the traditional text to become more accessible to students, reinforcing the potentially difficult passages of Shakespeare’s Early Modern English by simultaneously pairing it with the more concrete format of visual literacy.

The usefulness of visuals in the frame of representation is not exclusive to secondary students. In a study by Jun Liu (2004) of adult ESL learners, the same positive scaffolding effects of reinforcement of difficult text can be found, but with an interesting

twist. Using two different groups of adult ESL learners, one low-level proficiency and one more proficient, Liu had students read low-level and high-level texts, both with and without the accompanying visuals of comics provided. The overall analysis found that the use of comic strips did help reinforce student performance on immediate recall protocols (IRP) with one caveat: it was only shown to help the low-level students with comprehension of the most difficult text, while the high-level students' memory recall was relatively undifferentiated (Liu, 2004). These results help argue for the idea of the visual aid function of representation, as it shows visuals in the light of their ability to reinforce text when needed. In the case of the high-proficiency students with both texts, the students did not require any reinforcement or repetition; the same holds for the low-proficiency students with the low-level text. Only when difficulty in text comprehension existed (i.e. low-proficiency students with high-level text) did the visuals act as an anchor for comprehension and serve their purpose of reinforcing a difficult text by adding additional clues (Liu, 2004).

**Organization.** Another way visuals can aid reading comprehension and memory recall is to add to the organization in order to make the text more coherent (Levie & Lentz, 1982; Levin, Anglin, & Carney, 1987; Liu, 2004). Visuals naturally allow for a more universal understanding of a concept, this is the reason depictions of tents on roadside signs indicate nearby camping, or how of stick figures in pants or skirts will accompany bathroom signs--visuals are not affected by any language barrier; they are concrete and cannot be so easily misinterpreted as abstract words. Scott McCloud describes this idea as related to simplified cartoons in comics as "amplification through simplification," (1993, p.30). A simplified cartoon allows readers to focus on specific things, such as a

visualization of a character's actions, rather than be overwhelmed by every detail such as a poetic, verbal description of a character, what he looks like, and what he is doing. This "amplification through simplification", a concept that can also describe how a visual, when paired with text, can help the reader focus their attention on what is most important and eliminate any unnecessary and potentially confusing aspects of the text.

When applied to the classroom, it can be seen that the visuals found within graphic novels contribute towards making complex textual information more understandable to students (Fisher & Frey, 2011). Fisher and Frey (2011), in fact, describe the visuals in terms of serving as "an excellent way to provide students with an overview of a topic before diving into the details," (p.4). Again, it can be seen how the visual nature of comics or graphic novels can aid in coherency within a more detailed piece.

**Interpretation.** Visuals can give the reader more concrete information within the reading itself. Even our favorite authors can stray from the concrete. They can get a bit verbose, sometimes peppering their writing with words that require a dusting off of your thesaurus; some authors can make some pieces too abstract and dependent on inference, or assume a background knowledge students still lack. This can make it very difficult for students, especially language learners not yet fluent in their L2, to fully grasp the author's meaning. However, show a visual of a smiling face to a student and ask that same student how that particular character is feeling and the simplified image allows little room for interpretation (McCloud, 1993). This is because words are simply abstract stand-ins to represent something else; they are, as Scott McCloud (1993) argues, "the ultimate abstraction," while images are more concrete in their understanding (p. 47).

**Transformation.** The function of transformation is discussed more in regards to how visuals affect the brain by allowing readers to focus on the more critical information and store it in a format that is easier to remember...a visual one. Transformation allows for the discussion of original theories of learning and how the brain works, and even how the brain remembers. Perhaps the greatest argument for the existence of a visual's function of transformation as Liu describes it is Paivio's (1991) dual coding theory, which discusses the process our brain undergoes during reading.

The Dual Coding Theory argues that all learners learn to read or write in a similar but specific way that requires two separate systems of cognition. These systems are called the language system, consisting of the verbal such as words, sequence, speech, and writing; and the imagery system, consisting of the non-verbal such as images and visualizations. While reading, students are making connections between these two different systems, and it is these connections between the two different systems that allow for better understanding and recall. Paivio's (1991) theory argues for the importance of visuals in comprehension, lending credence to the transformation function aspect of visuals when he states, "Dual coding theory and its educational implications parallel the historical emphasis on concretization of knowledge through imagery and pictures" (p. 3). He later directly applies this concretization of knowledge through imagery by directly stating that beginning readers learn to read concrete words much faster when the words are paired with their pictures, rather than with their pronunciations (Clark & Paivio, 1991). It is obvious the non-verbal aspect of visuals is integral to the dual coding theory and its ability to allow for better comprehension, a fact that will hopefully highlight and encourage the use of visual media like comic books and graphic novels within the classroom.

The theory goes on to argue how not only comprehension is influenced by dual coding of verbal and non-verbal systems of cognition, but also how it affects memory recall. Paivio states, "The memory benefits of dual coding has been confirmed in numerous experiments, which also suggest that the nonverbal code is mnemonically stronger [...] than the verbal code" (2006, p.4). Essentially, Paivio postulates that information, as we understand it, is stored both verbally and non-verbally as words and images separately, and it is due to this format that one can recall information to a greater degree. He even goes a step further to stress the importance of visuals in this dual system, when he argues the non-verbal portion of the system of the dual coding is even stronger when it comes to our memory recall.

Many studies seem to support this connection between visuals and memory recall, such as that of Waddill and McDaniel's (1992). In their study, two different groups were given readings to perform, with one group using a text only excerpt, and a second group using a text with pictorials. Upon completion of the reading of the excerpts, participants were instructed to write as much as they could recall on the subject. It was found that those from the group with the added pictorial support were able to recall more information (Waddill & McDaniel, 1992). A similar study conducted by Omaggio (1979) used native English speakers to read different texts, one text in English with no pictures, one in English with pictures, one in their L2 French with no pictures, one in their L2 French with pictures, and one that consisted of pictures only. After conducting a comprehension test post-reading, he found that while the visuals had no effect on reading comprehension in English, the visuals did have a positive effect on reading comprehension and recall in regards to their French L2 reading (Omaggio, 1979). In addition, it was also found that those who

read the text that consisted of pictures only were unable to recall a number of correct details regarding the text, a finding that further accentuates what Paivio argues is a the need for the storage information both verbally and non-verbally for increased memory recall (Omaggio, 1979).

### **Need for Research**

As this chapter has presented, there is a no lack of complexity in regards to concepts like reading comprehension, assessing reading comprehension, memory recall, and ELL consideration.

My interest for this study stems from the overlap that could exist between the usefulness of visuals in reading comprehension and memory recall, and the potentially untapped scaffolding that could be provided from the visual resource that exists in graphic novels, and more specifically, how this could affect ELLs. When students struggle providing retells of a story, is it due to the abstract nature of text? Could the concreteness of images in graphic novel depictions aid them in this struggle? Or is it a difficulty with memory recall? Is the problem an interlanguage issue? My research focused on the following specific questions to attempt to parse out these ideas: (1) How can graphic novels affect the proficiency of reading comprehension, as shown by performance on the task of retelling, for middle school English Language Learners in comparison with a text-only novel? (2) In what ways can the memory recall of a chapter's events be affected by the use of a graphic novel adaptation in contrast with the traditional text format?

### **Summary**

This chapter has presented research in regards to the use of visual and pictorial supports in the classroom, research that positively supports their usefulness in terms of



reading comprehension and memory recall, as well as many studies and dissections of graphic novels and comic books performing as that visual aid in regards to reading comprehension.

In this chapter, I have provided an overview of the basis for my study. I have defined terms and explained the complexities, difficulties and factors that exist in the multi-level process of reading comprehension. I identified the additional problems that exist for the ELL population in regards to reading comprehension. The concept of graphic novels was explained and their potential usefulness as visuals in the classroom was presented using various texts and research including Liu's (2004) presentation of the five different functions that describe how visuals can aid reading comprehension and memory recall. While there have been many studies and theories on the use of visuals in the classroom, there is much work to be done in regards to bringing the specific medium of graphic novels into the spotlight as a great example of visuals to support and scaffold text, most notably for ELLs. It is important for EL and content teachers alike to be provided with and versed on every possible form of differentiation or scaffolding that is deemed beneficial to ELLs, and my study aims to explore if graphic novels are a viable scaffold for reading comprehension and recall. In the following chapter, I will describe the methodologies I used in my study to determine this.

### CHAPTER THREE: METHODOLOGY

This study was designed to research the use of graphic novels compared to traditional novels with ELLs. More specifically, I was interested in exploring the effect graphic novels have on reading comprehension and memory recall in comparison to traditional literature, the results of which may help determine if graphic novels can provide scaffolding in ESL and content classrooms alike. My research questions were the following:

- (1) How can graphic novels affect the proficiency of reading comprehension, as shown by performance on the task of retelling, for middle school English Language Learners in comparison with a text-only novel?
- (2) In what ways can the memory recall of a chapter's events be affected by the use of a graphic novel adaptation in contrast with the traditional text format?

In the fifth grade ESL program in the school where I teach, I guided a small group of intermediate ESL students through chapter readings of a class novel. The days alternated regarding whether we were reading a chapter from the traditional text-only novel, or the graphic novel adaptation of the chapter. Upon completion of specific chapters, I measured the separate media effects on comprehension that occurred through scaffolded student written retell and memory recall assessments. This was done in order to help to determine any possible effect one medium may have over the other in regards to reading comprehension. I created a retell rubric to measure students' written retell responses using previous research on formative assessment, as well as studies similar to my own in their use of written retells (Frey & Fisher, 2011; Reed & Vaughn, 2012; Kuldane, 1998). Retells allow researchers to look at student interaction with and comprehension of the text itself, rather than adding another dimension of reading comprehension by introducing

multiple choice or open ended test questions that themselves rely on a student's ability to decode and interpret them. Furthermore, taking into consideration any possible language acquisition difficulties or interference occurrences between an ESL student's L1 and L2, a story retell has the ability to remove many of these possible difficulties by allowing the student to answer in their own words, at their own ability level, and using their L1 or L2. It is with these considerations that I will use retell as the main measure of reading comprehension for this study.

Similarly, a chapter specific recall assessment in the form of questions on a chapter's important events of the chapter read was administered on following day of a chapter read in order to test a specific medium's potential effects on memory recall. This assessment was graded as a quiz, using the standard percentage basis.

I hope the findings of research will give insight to graphic novels and whether they offer any potential as scaffolds that may benefit language learners, ELL teachers, and content teachers alike.

### **Overview of the Chapter**

This chapter describes the methodologies used in this study. First, the mixed methods research paradigm is described. Second, the protocols for data collection are presented, including a description of participants, setting, and data collection techniques used. Third, a description of the data collection process is provided. Fourth, the methods used for data analysis in this research are described. Finally, any pertinent ethical considerations necessary for this qualitative research are considered.

### **Mixed Methods Research Paradigm**

This study used a mixed methods research paradigm; the study employed aspects of

both the qualitative research paradigm as well as aspects from quantitative research in order to better understand the effect graphic novels might have as a scaffold for reading comprehension and memory recall. The mixed methods approach allowed the researcher to use both descriptive data in the form of observations and interpretation of student produced work as well as a more number-driven data assessment allowed by quantitative methods of research (Dornyei, 2007).

The quantitative paradigm used in this study is identified through the manner in which the researcher scores the student writing based on a written retell rubric (see Appendix A). Student work samples in the form of written retells were analyzed for the inclusion of the chapter's specific plot content including key ideas, sequence, problem, resolution, characters and setting. These different areas were given a numerical score of 0-3 according to a rubric (see Appendix A). A score of 0 indicated the feature was non-existent in the retell, while a score of 3 indicated the text feature was present and accurate in the retell. The retell scores on the text-only chapters were compared with the scores on the graphic novel chapters. Furthermore, the researcher collected qualitative data through observation during group discussions, independent reading, and written retell work time.

The quantitative paradigm was used in this study in order to more directly quantify the differences between students' scores on written retell assessments, as well as the various researcher developed cued recall assessment. These chapter recall assessments (see Appendix B) were administered on a chapter-by-chapter basis on the following day after reading the chapter, therefore allowing a look at the 24-hour retention capabilities of each medium. The 24-hour wait was chosen as a good indicator of memory , as according

to the Michigan State University College of Osteopathic Medicine (2014), something that you can recall after a 24-hour period is considered a long-term memory. These assessments required a numerical approach in order to allow for a more quantifiable and reproducible examination of how the groups' results differed.

### **Data Collection**

**Participants.** The participants of this study were fifth grade male and female students, all of whom were labeled as Limited English Proficiency (LEP) and, therefore, received ESL services. , This small sample of students all shared similar characteristics due to their being placed in this class in the first place. All students had characteristics such as the following: (1) the students were all ranked as low-intermediate language learners ranging 2.8 to 3.9 according to the World Class Instructional Design and Assessment (WIDA) levels used by English Language Learner programs, (2) the students were all placed in a pull-out specialized English instruction setting for one class period daily due to these WIDA levels and (3) the students all fell below grade level in reading instruction.

The group of students simultaneously receiving this form of delivery in a classroom setting consisted of seven students including five boys and two girls. Three of participants, along with being designated English language learners, were on an Individualized Education Plan (IEP) through our special education program. All participants spoke Spanish as their L1, although this was happenstance and not criteria for inclusion in the study. All participants had been in the U.S. for two years or more and had received formal schooling either in the U.S. or in their country of origin. All students within the group were included in every aspect of the study

All students in this class were invited to participate in the research by means of a permission letter that was sent home for parents to be signed. Due to all of the participants sharing the same L1 of Spanish, the letter was written in both English and Spanish, with the school's Spanish speaking family liaison serving to double-check the Spanish letter. The letter explained the study and why I was conducting it, and went on to reassure families that the results would not affect the students' grades and that their information would not be shared. Both my contact information, as well as the Spanish family liaison's contact information were listed in case any families had questions or concerns regarding the research. The Spanish liaison contacted these families directly by phone to double-check if there were any concerns. Of the eight students in my classroom, seven students returned their parent permission letters signed and it was these seven that participated in my research.

**Location.** The setting of the data collection took place in an urban middle school in a pull-out setting during the school day. This means the students were receiving their English lessons during this particular period of class time from me, the English Language instructor, in place of a traditional Language Arts classroom. The students took part in the reading, reading comprehension checks, and oral interviews in the ESL classroom during each class's 58-minute class period. My participants were in a familiar classroom setting with their regular instructor and classmates for the duration of study.

### **Data Collection Technique 1: Written Retells**

In order to get students familiar with the process of composing their own written retells, several chapters of the traditional novel were read aloud as a large group the end of each class period after the day's lesson. This was done prior to collecting actual data for

the study in order to garner interest in the story itself and keep students engaged and intrigued by the story for when they would be required to read chapters independently. As the class progressed through the first eight chapters as a read aloud, mini-lessons were introduced to help students understand how to use the teacher-provided graphic organizer to properly format a written retell after each chapter. Written retells of these chapters were practiced for both the text-only and graphic novel format before the individualized work on the chapters used in this study began. This process occurred through large group readings designed to get students to think about answers to a teacher designed graphic organizer's main points for retell: (a) characters, (b) setting, (c) problem, (d) main events, and (e) solution. The graphic organizer (see Appendix C) was filled out on the Promethean board by means of student responses to teacher prompts. Gradual release of this process was used to give students an understanding of what would later be something they were required to complete independently when data collection began. The following three chapters were then read in the graphic novel format as a whole group to continue modeling and guiding the process, and the graphic organizer was completed as a large group in the same call and response manner. Students were also given mini-lessons involving how to properly read graphic novels, including how to accurately follow dialogue boxes as they are presented in the comic book format, as well as looking at the pictures for visual clues of what is happening in the story. Students worked as a large collaborative group to complete the same graphic organizer after each graphic novel chapter, and then used that organizer to compose their own written retell. Upon reaching Chapters 11-18, the chapters were no longer read as a large group, and the graphic organizer was not completed using call and response. Instead, Chapters 11-18 became the point of data collection, and the

same organizer was used by students independently as students began the process of reading, filling out the personal graphic organizers, and composing their own written retells using these graphic organizers on their own.

In order to determine possible differences in reading comprehension levels between the use of graphic novels and the use of traditional novels, students were required to complete a post-reading written retell for chapters 11-18; retells for chapters 12, 13, 16, and 17 were completed using the text-only traditional novel, and retells for chapters 11, 14, 15 and 18 were completed using the graphic novel. These retells were used to elicit main ideas, summaries, or student worded restatements of the reading in question, which can effectively show a student's overall comprehension of the reading (Reed & Vaughn, 2012). Even when compared to other methods of deducing comprehension of a text, such as illustrations, retells have proven to be a highly effective gauge of student comprehension, and is, as Gambrell, Pfeiffer and Wilson (1985) state "a highly potent, generative learning strategy which has direct, beneficial consequences on children's processing of textual information" (as cited by Kuldane, 1998, p. 15).

As stated, the student retell data to be analyzed occurred in written format. In an attempt to offset any language difficulties that might occur with language learners in regards to a written retell, students were able to arrange their ideas in writing first through a heavily scaffolded retell organizer and used this organization to help with their retell (see Appendix C). This same organizer was used regardless of whether the chapter being read was in graphic novel or traditional format, so as to maintain consistency between the data when compared.

### **Data Collection Technique 2: Memory Recall Chapter Check-In**



Upon completion of the student retells, students moved on to a different and unrelated lesson until their normal dismissal from class for the day in order to create a 24-hour window between student recollection of events in the chapter. Before continuing on to the next chapter in the text the following day, students were given their multiple choice recall assessment on the previous day's chapter. Recall questions asked about important events or character actions of the chapter in question, with the 5W cue words (who, what, where, when, and why) provided. With these cues provided, students were asked to complete the multiple-choice questions given. Results were graded on a standard percentage basis.

### **Materials.**

**Reading selection.** The reading selection for this study was the novel *City of Ember* by Jeanne DuPrau and *City of Ember: The Graphic Novel* adapted by Dallas Middaugh. In order to provide students with an appropriate text difficulty for their level, the measures created by The Lexile Framework for Reading were used. These measures are a numeric representation of the predicted reading ability required to successfully read the novel, and are based on word frequency and sentence length (Cohen, Krustedt, & May, 2009). The lexile measure of the traditional novel *City of Ember* is 680L (MetaMetrics, 2016). While lexile measures are not grade specific, as there will be a wide range of lexiles present within a classroom, a lexile measure of 680 shows that when looking at the middle 50% of reader measures, this number is typical for students from grades three through six (MetaMetrics, 2016). Both the traditional book and graphic novel adaptation are recommended for grade levels three through six, from ages eight to twelve according to the Lexile Framework for Reading website (MetaMetrics, 2016). The paperback novel is 270

pages, with the graphic novel adaptation being shortened to 144 pages long. The text found in the graphic novel format consists of word-for-word reproductions of the text-only format, however a great deal of descriptive information is left out and replaced by pictorial representations of the same information.

***Written retell graphic organizer.*** Language learners can have difficulty expressing themselves in writing due to such factors as lack of productive language, anxiety or high-affective filter, difficulties occurring due to L1 interference, and many more (Ortega, 2008). In order to combat many of these difficulties ESL students face, EL teachers employ scaffolding strategies in the form of such scaffolds as sentence starters and graphic organizers. In order to help students produce their best work, and garner the best results for this study, a graphic organizer was provided for students to aid in their formulation of a story retell (see Appendix C). This aid was allowed use in assisting in their written retell. The graphic organizer included a visual depiction of “The Retelling Hand” that our class uses to make sure we include all-important information in a retell. The organizer also assisted the writing by the organizer’s inclusion of key retell vocabulary words such as characters, setting, events, problem, and resolution. These words will act as thought or sentence starters for student writing. In addition, all desks had a chart of the academic vocabulary transition words (see Appendix D) of chronology that places the words first, next, last, and finally in sentence initial positions, leaving students to fill in the rest. These scaffolds provided assistance to students solely in terms of the sentential construction of their retells, but did not aide in contributing to the content of a student’s own retell itself, as this information was reliant wholly on a student’s own recall of information, organization, and transformation of knowledge from the story (Klingner, 2004).

**Written retell rubric.** In order to more efficiently score student oral and written retell, a retell-scoring rubric was used (see Appendix A). While Frey and Fisher (2011) suggest there is a number of pre-made rubrics for retells online, for the purpose of this research I opted to create my own rubric. This rubric was designed in order to focus solely on student ability to deliver information related to their comprehension of the story holistically; it emphasized the student construction of meaning in regards to their ability to retell the story rather than grading on anything sentential or sub-sentential such as construction of clauses, spelling, or punctuation, thereby eliminating possible loss of points due to language transfer errors. Many pre-made rubrics include aspects that graded on the use of complete sentences, vocabulary, and even prosody. Due to the language barriers that exist for language learners, and my desire to focus on comprehension of plot elements, features such as the use of complete sentences, as well as vocabulary and language usage were not included in the rubric or affect score in any way, in an attempt to remove any interference from a student's productive language ability, as Reed and Vaughn (2012) found this dependence as a possible drawback to the validity of retells. As ELLs can vary in their productive language ability, it was important to create a rubric that removes this possible bias while still checking for comprehension of main ideas, summarizing of chapter content, and the assimilation and reconstruction of the information presented to them. (Trabasso & van den Broek; 1985; van den Broek, 1989; van den Broek & Kremer, 2000). Emphasis on sequence of events of the reading, as well as saliency of the characters, problems, and resolution, were scored.

**Post chapter recall assessment.** On the day following the independent reading of a chapter, and before beginning the next chapter, students were given a multiple choice

recall assessment on the previous day's reading in order to determine any effect graphic novels have on memory recall of the story (see Appendix B). The assessments given contained information specific to the previous chapter read, and was similar in format regardless of the text medium that was used previously. It included cue words to guide students toward giving specific retell information of important events from the chapter in question. For example, the recall question "Why are the items in Lizzie's sack important?" served to guide students in comprehending the "who" and the "what" through use of the words "Lizzie" and "important items," but students were still required to recall on their own the "why" from the chapter.

### **Data Analysis**

**Analyzing retells.** The participants' written retells were scored by the researcher using an adapted retell rubric focusing on chronology of important events, characters, and problem resolution (see Appendix A). The scoring rubric sheet was used for each separate written retell.

**Analyzing recalls.** Scoring for the memory recall assessments was similar to any standardized quiz due to their multiple-choice format. Students wrote their names on their work, and completed the multiple-choice questions independently of one another in a quiet testing atmosphere. Upon completion, students were asked to turn in the sheet to the bin and work quietly until all students had completed the assessment. The data were then graded using the standard percentage value basis in order to determine any increase or decrease in scores between traditional novel usage and graphic novel usage for these post-chapter memory recall assessments.

### **Verification of Data**

In order to ensure internal validity of the data, a number of strategies were employed in order to strengthen the data. This included the use of content validity through the means of employing valid assessments to examine the main interest of the study, that of the potential usefulness of graphic novels in terms of higher reading comprehension and memory retention. Due to this fact, the reading retells were designed to gather data on comprehension alone, and discarded any facets relating to language or vocabulary (Merriam, 2009). To maintain internal validity, the same instructor and instruction methods were employed daily during the modeling and guided practice portion of the study. After scoring was completed, students were asked to find their scored written retell work the following day and write their name on it for data tracking. Students were aware their scores did not affect their classroom grades.

### **Ethics**

Students participating in written retells of the study were required to turn in their writings in order to be more formally reviewed later. This, in itself, may have caused some potential stress in the same manner turning in any writing within a classroom may. To minimize this anxiety, the written retell writing time took place in their private traditional classroom. Furthermore, no names were used initially; instead all sheets were given a randomly assigned number during the grading process until they were handed back for students to claim. All written retells were filed and locked on the premises at all times they were not being used. All participant parents/guardians were sent home an approved letter of intent explaining the study in detail and requesting parent/guardian permission for their child to participate (see Appendix G). The letter was also translated into Spanish for native Spanish speakers (see Appendix H).

The benefits of this study far outweighed the minimal potential risk. These benefits included the potential development of new reading strategies, increased comprehension of story elements, increased practice in writing, and greater independence stemming from students' own independent work time. The scaffolding provided by the introduction of a potential new medium of graphic novels could allow students to access a more difficult text and experience success. Growth in any of these areas could lead to an increased confidence in their reading or writing, as well as the potential to determine their own strengths as a more visual learner, or a more linguistic based learner.

Furthermore, potential benefits to society and the educational system are present as well. English language learners are a continually growing demographic in the world of education, and teachers need to be equipped to teach these learners. The use of graphic organizer, charts, and other visuals has been an invaluable tool throughout the years. However, an achievement gap still exists between ELLs and non-ELLs and we need to continually look for potential ways to close this gap. Some potential benefits of this research could include determining the effectiveness of the use of graphic novels for language learners. Any effectiveness found could lead to the introduction of the graphic novel as a visual-literacy tool into the mainstream as viable scaffolding for language learners. It could shed light on the potential benefits of graphic novels as a tool for low-level readers, students with special needs, or language learners to access the story elements of what may otherwise be a difficult text. It may allow for a more inclusive environment for these learners in the traditional classroom due to its benefits, as well as a mainstay in the ELL teacher's toolkit.

This study included the use of the following safeguards to protect participants' rights:

1. All research objectives have been shared with student participants and with the parents of student participants in both the families' L1 and L2 in letter format. A bilingual family liaison was listed as a contact for any additional questions.
2. Written permission of student participation in the study has been obtained through an informed parental consent form for all student participants, as well as informed consent from the school and school district.
3. All participants' names have been changed for this research.
4. All necessary steps were taken to officially approve the study at my university.
5. The study is conducted under the supervision of a capstone committee through Hamline University.
6. All hard copies of student work, transcriptions, and material related to the study will be stored in a locked file cabinet within a locked classroom. Any data and findings may only be used for this paper or any future presentations or publications related to this work.

## **Conclusion**

In this chapter, I have described the methods I will use to collect and analyze my data. I plan to assign graphic novel and traditional novel readings to my pull-out specialized ELL instruction classroom in an arrangement that maintains equal WIDA composite scores within the classroom. Each student will read the same chapter in their respective texts, one day reading a chapter using the traditional text and the other day reading the next chapter using the graphic novel adaptation. After reading, the students will be required to write a retell of the information presented in the chapter using a

provided scaffolded retell graphic organizer. Written retells will be graded at a later time using the provided scoring rubric. To test for memory recall, the following day students will be tested on their memory recall of the chapter's events using a cued recall assessment. These memory recall assessments will be graded and assigned a standard percentage value score in order to compare scores from memory recall assessments of traditional novel chapters to scores from memory recall assessments graphic novel chapters. The following chapter presents the findings of this study.



## CHAPTER FOUR: RESULTS

This chapter will explain the results of the research, and more specifically how the collected data relates to the answers to the following questions:

- 1) How can graphic novels affect the proficiency of reading comprehension, as shown by increased performance on the task of retelling, for middle school English Language Learners in comparison with a text only novel?
- 2) In what ways can the memory recall of a chapter's events be affected by the use of a graphic novel adaption in contrast with the traditional text format?

The first presentation of results will be the group's results on their written retells as graded by the teacher-produced rubric, which will serve to answer question one by determining the overall impact graphic novels had on the proficiency of student reading comprehension. The second presentation of results will be the group's results on their multiple choice memory recall assessments, that were graded the following day to determine the answer to research question number two and argue how memory recall can be affected by the use of a graphic novel adaptation.

### Results

**Student Written Retells.** Based on the results of this study, the use of graphic novels appeared to contribute to higher overall scores on student produced written chapter retells. Although some increases were minimal, such as a .5-point difference from an average of 12.25 out of 18 when using traditional novels, to 12.75 out of 18 when using graphic novels, other students increased their scores by up to 4.25 points when interpreting graphic novel versions of the chapter in place of the traditional novels. Despite the differences that exist in score increases between individual participants, it is

significant to note that all students did increase to some degree, with an average increase of 2.64 points when looking at all student increase data.

Student average scores were noticeably higher after students completed reading the chapter using the graphic novel in comparison with the traditional novel. All seven participants increased in their average scores. The seven student participants were graded on four different written retells of chapters from the traditional novel using a rubric that consisted of 18 points overall.

As the table below describes, the overall average scores for the written retells for chapters from the traditional novel source ranges from 8.5 to 16.75 out of 18. While some students experienced an increase in scores as they progressed from chapter to chapter, there were several cases where scores decreased or remained relatively consistent. Approximately three quarters of students' scores on their written retells were above the 50% mark, and approximately 1/5 were above 75%. All student names have been changed for the purpose of anonymity.

Table 1  
*Average Rubric Scores of Written Retells by Student for Traditional Novel Chapters*

	Total Score Traditional Novel Chapter 12	Total Score Traditional Novel Chapter 13	Total Score Traditional Novel Chapter 16	Total Score Traditional Novel Chapter 17	Average total score
Eleanor*	6/18	10/18	11/18	13/18	10/18
Jackson	10/18	08/18	13/18	03/18	8.5/18

Anthony*	13/18	8/18	11/18	06/18	9.5/18
Angelo	18/18	12/18	12/18	06/18	12/18
Jordan*	12/18	14/18	12/18	11/18	12.25/18
Julian	13/18	13/18	10/18	08/18	11/18
Paulina	18/18	17/18	15/18	17/18	16.75/18

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\*Indicates a student on an Individual Education Plan (IEP)

\*\*Assessment is out of 18

When you compare these four retell scores from the traditional novels to the four written retells of chapters when using the graphic novel, 24 out of the 28 written retells had the same score or higher when the graphic novel was used. The same rubric that consisted of 18 points overall was used.

When looking at the overall averages found in the last column of Table 2, the overall average scores for the written retells for chapters from the graphic novel source has a range of 12.75 to 17.25 out of 18. When comparing the two tables, there shows a gross difference between the minimum average total score of 8.5 for retells based on the traditional novel, and the minimum average total score of 12.75 for retells based on the graphic novel. Student total scores also remained relatively consistent throughout the process when using graphic novels, that is, the scores tended to have a smaller range

between them when writing retells on the graphic novels, and larger ranges when writing retells on traditional novels. To use a specific example, the student “Jackson” had a range of 10 when comparing his lowest and highest written retell score for traditional novels. However, when looking at the table below, we can see “Jackson” had a range of 5 when comparing his lowest and highest written retell score for graphic novels. This same pattern occurs for a number of students when comparing the two tables.

Table 2

*Average Rubric Scores of Written Retells by Student for Graphic Novel Chapters*

	Total Score Graphic Novel Chapter 11	Total Score Graphic Novel Chapter 14	Total Score Graphic Novel Chapter 15	Total Score Graphic Novel Chapter 18	Average total score
Eleanor*	16/18	14/18	12/18	14/18	14/18
Jackson	14/18	15/18	12/18	10/18	12.75/18
Anthony*	15/18	14/18	12/18	13/18	13.5/18
Angelo	17/18	14/18	12/18	13/18	14/18
Jordan*	15/18	14/18	9/18	13/18	12.75/18
Julian	16/18	15/18	10/18	16/18	14.25/18
Paulina	17/18	17/18	18/18	17/18	17.25/18

\*Indicates a student on an Individual Education Plan (IEP)

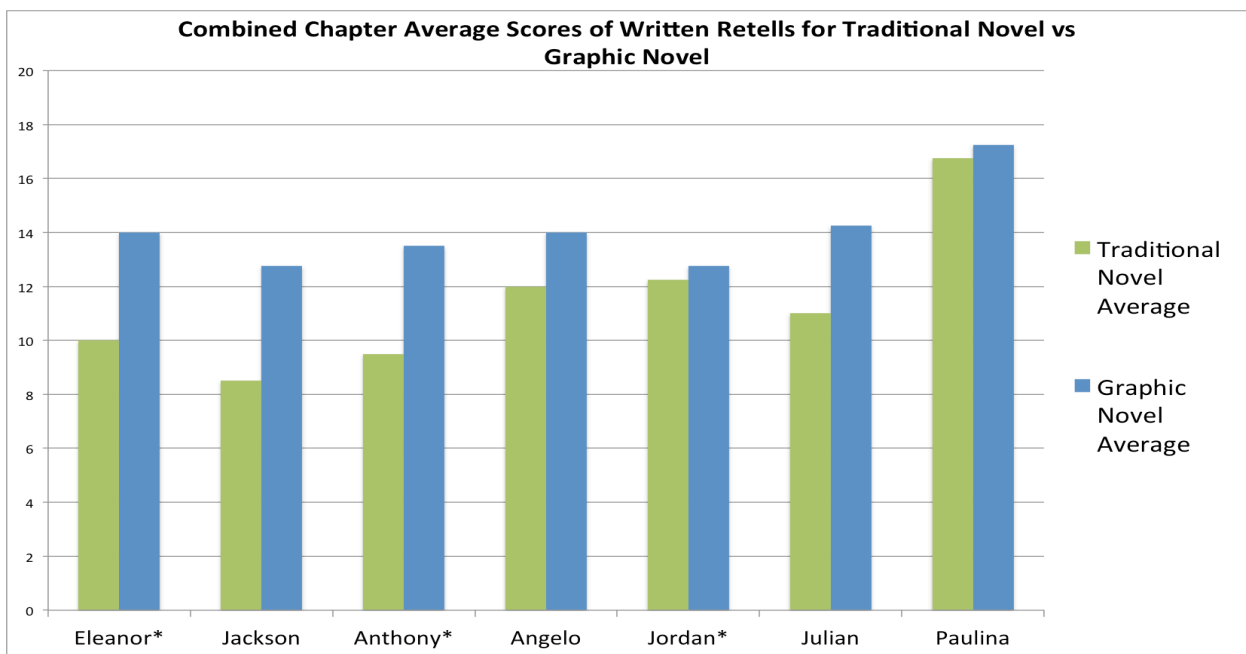
\*\*Assessment is out of 18

When comparing the average scores of all written retells between a student reading the traditional novel and the average scores of all written retells of a student reading the

graphic novel, the average scores are consistently higher when students wrote their retell directly after reading the graphic novel format, in comparison to the scores of the retells written directly after reading the traditional novel format. In fact, all seven of the seven student participants' averages show a higher average score for written retells of graphic novel chapters as compared to written retells of the traditional novel chapters. See Figure 1 below.

Figure 1

*Combined Chapter Average Scores of Written Retells for Traditional Novel vs Graphic Novel*



\*Indicates a student on an Individual Education Plan (IEP)

\*\*Assessment is out of 18

The average difference in score when using the graphic novel compared to a traditional novel was an increase of 2.64 points. The maximum difference in average score was 4.25 and minimum difference in average score was an increase of .5. When looking at the comparison results, they propose an answer to my first research question by showing

an increase in the performance of retelling when students had read the graphic novel format of the chapter.

In addition, all three students in the study that were dual identified as ELLs and in need of an individualized education plan showed generally increased performance when using the graphic novel as well, in contrast with the traditional novel.

These findings show not only that language learners can show an increase in the performance of retelling when students had read the graphic novel format of the chapter show, but gives an additional depth in answering my first research question by showing that, in this case, students with IEPs and learning disabilities are not an exception to this increased performance, as they too show how they can benefit from the use of graphic novels as well through their proven increased comprehension. See Figures 3-5 below.

Figure 2 Eleanor's Written Retell Scores for Traditional Novel vs Graphic Novel

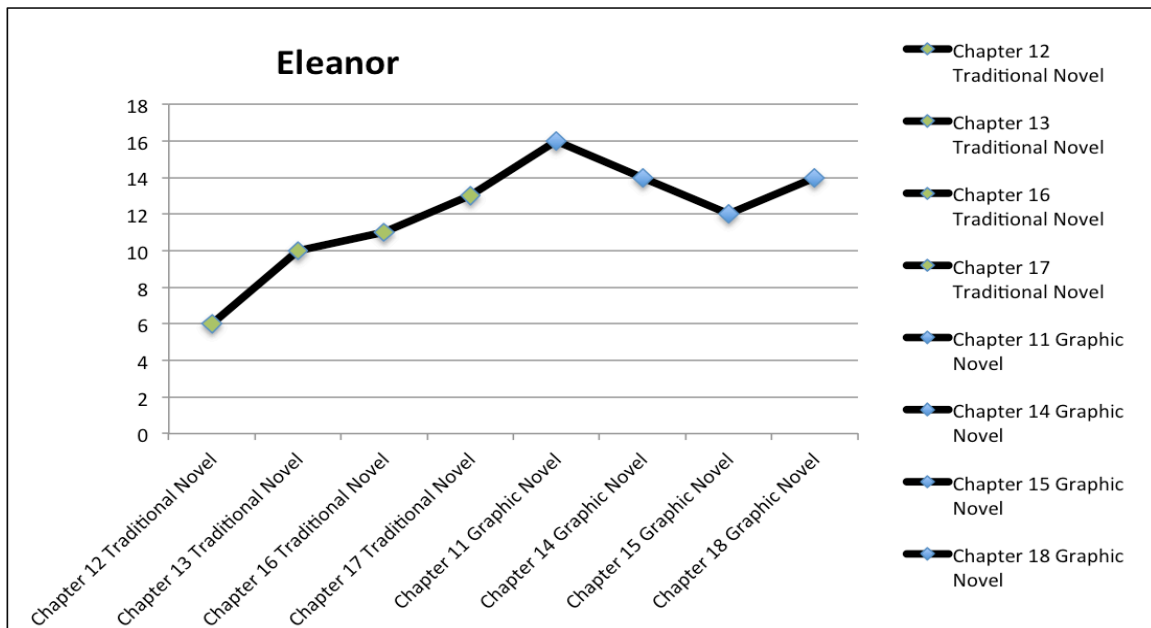


Figure 3 Jordan's Written Retell Scores for Traditional Novel vs Graphic Novel

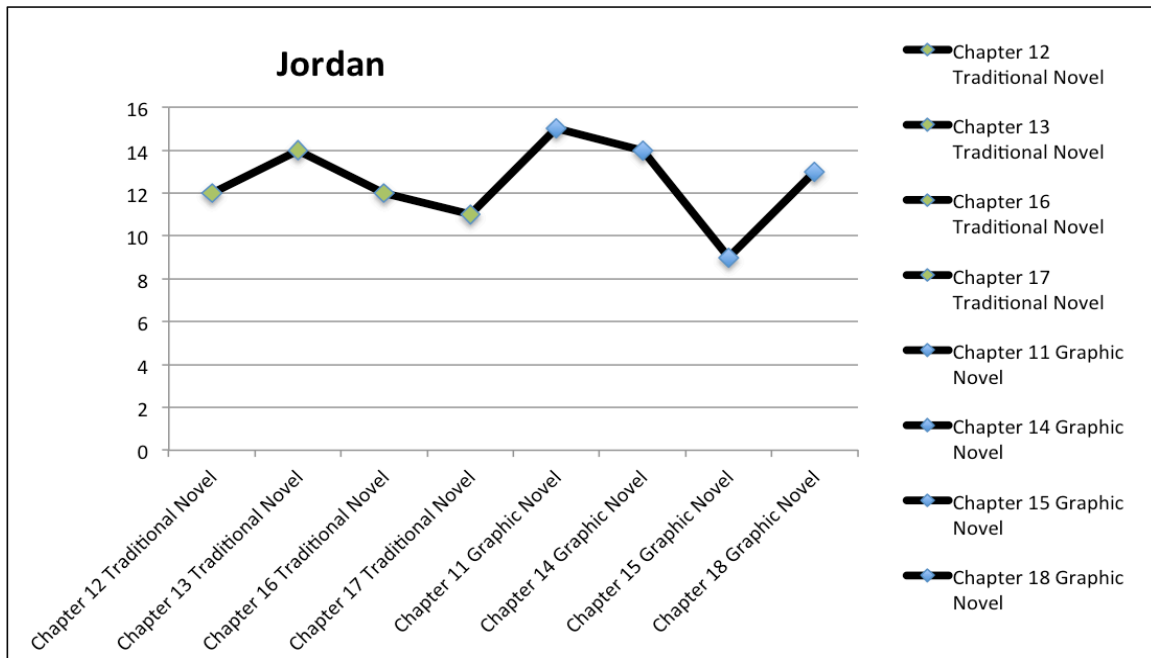
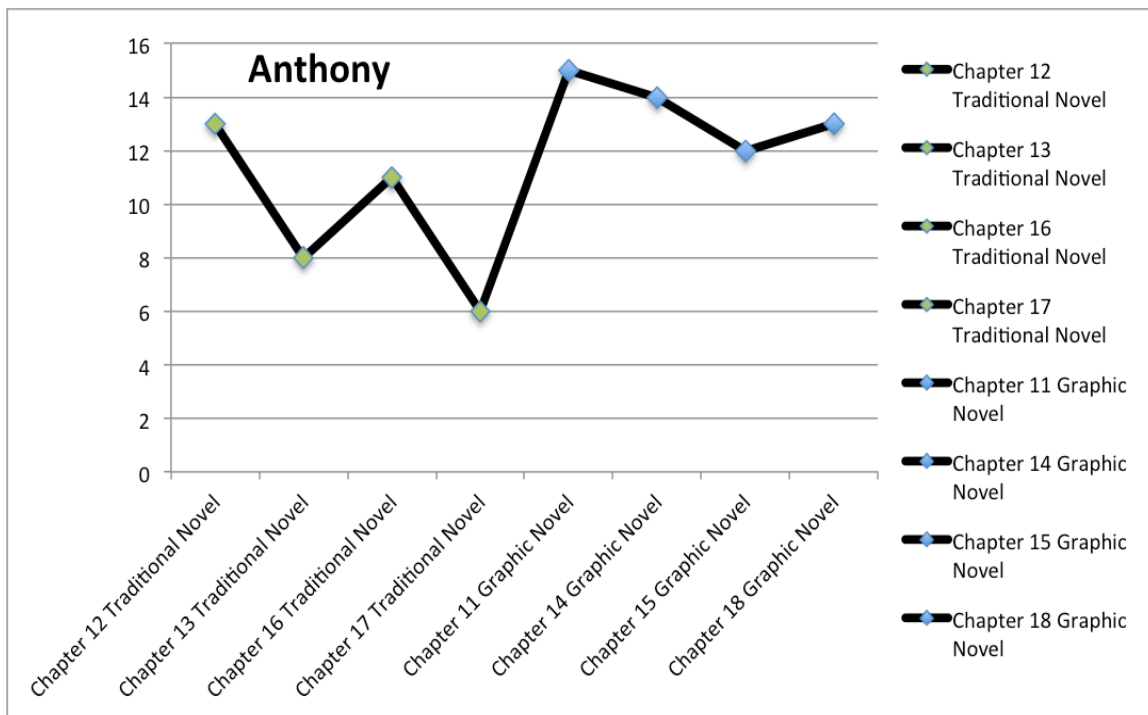


Figure 4 Anthony's Written Retell Scores for Traditional Novel vs Graphic Novel



**Student Memory Recall Assessments**

In addition to completing written retells of chapter events, students were given a short three to four question quiz the following day to attempt to gauge the student's ability

to recall the events from the chapter before in an attempt to answer how memory recall of a chapter's events are affected by the use of a graphic novel adaption in contrast with the traditional text format.

The scores were totaled and given a percentage point typical of formative assessments such as quizzes for ease of scoring, as well as averaged to create a student personal average on the four traditional novel chapters.

Based on the results of the memory recall quizzes found in the tables below, all participants had higher percentage scores after reading the graphic novel chapters. The scores on these recall assessments varied, not only amongst students, but also in regard to an individual student's scores from chapter to chapter and from medium to medium.

When looking at the scores as a whole class, the averaged class results of the memory recall assessments of the traditional novel chapters 12, 13, and 16 scores all resulted in a failing grade (57.1%, 33.3%, and 42.9% respectively). The maximum student average when looking at all scores on chapters from the traditional novel was 69.2% or 9/13 correct. However, when looking at the class' average score on memory recall assessments for graphic novels per chapter, the averaged class results for the graphic novel chapters 11, 15, and 18 scores all resulted in a passing grade (85.7%, 60.7%, and 76.2% respectively). Furthermore, the maximum student average when combining scores for all chapters showed a great increase at 93.3% or 14/15 correct total. See Tables 3 and 4 below.

Table 3

*Percentage Scores of Memory Recall Assessments by Student for Traditional Novel Chapters*



Student	Memory Recall Chapter 12 Novel		Memory Recall Chapter 13 Novel		Memory Recall Chapter 16 Novel		Memory Recall Chapter 17 Novel		Student Average Memory Recall Novel score	
Paulina	50.00%	2/4	33.30%	1/3	66.60%	2/3	100.00%	3/3	61.5%	8/13
Anthony*	25.00%	1/4	0.00%	0/3	33.30%	1/3	66.60%	2/3	30.8 %	4/13
Jackson	75.00%	3/4	66.60%	2/3	66.60%	2/3	33.30%	1/3	61.5%	8/13
Julian	75.00%	3/4	66.60%	2/3	33.30%	1/3	100.00%	3/3	69.2%	9/13
Angelo	100.00%	4/4	33.30%	1/3	33.30%	1/3	100.00%	3/3	69.2%	9/13
Eleanor*	25.00%	1/4	33.30%	1/3	33.30%	1/3	100.00%	3/3	46.1%	6/13
Jordan*	50.00%	2/4	0.00%	0/3	33.30%	1/3	33.30%	1/3	30.8%	4/13
Average score per chapter	57.1%	16 /28	33.3%	7/21	42.9 %	9 /21	76.2%	16/21		

\*Indicates student is on Individual Education Plan (IEP)

Table 4

*Percentage Scores of Memory Recall Assessments by Student for Graphic Novel Chapters*

Student	Memory Recall Chapter 11 Graphic Novel		Memory Recall Chapter 14 Graphic Novel		Memory Recall Chapter 15 Graphic Novel		Memory Recall Chapter 18 Graphic Novel		Student Average Memory Recall Graphic Novel	
Paulina	75 %	¾	75 %	¾	50 %	2/4	66.6%	2/3	66.7%	10/15
Anthony*	75 %	¾	25 %	1/4	25%	1/4	66.6%	2/3	46.7%	7/15
Jackson	75 %	¾	0 %	0/4	100%	4/4	100%	3/3	66.7%	10/15

Julian	100%	4/4	100%	4/4	50%	2/4	66.6%	2/3	80%	12/15
Angelo	100%	4/4	100%	4/4	100%	4/4	66.6%	2/3	93.3%	14/15
Eleanor*	100%	4/4	50 %	2/4	75 %	3/4	100%	3/3	80%	12/15
Jordan*	75 %	3/4	50 %	2/4	25%	1/4	66.6%	2/3	53.3%	8/15
Average score per chapter	85.7%	24/28	57.1%	16/28	60.7%	17/28	76.2%	16/21		

\*Indicates student is on Individual Education Plan (IEP)

In line with my second research question, the table below shows that in this particular study, when averaging the all chapter memory recall scores and comparing the averages between the traditional novel and graphic novel, scores on the memory recall assessment were higher when students had read the chapter using the graphic novel format (see Table 5).

Table 5

*Student Average Percent Memory Recall Score Increase for Graphic Novels*

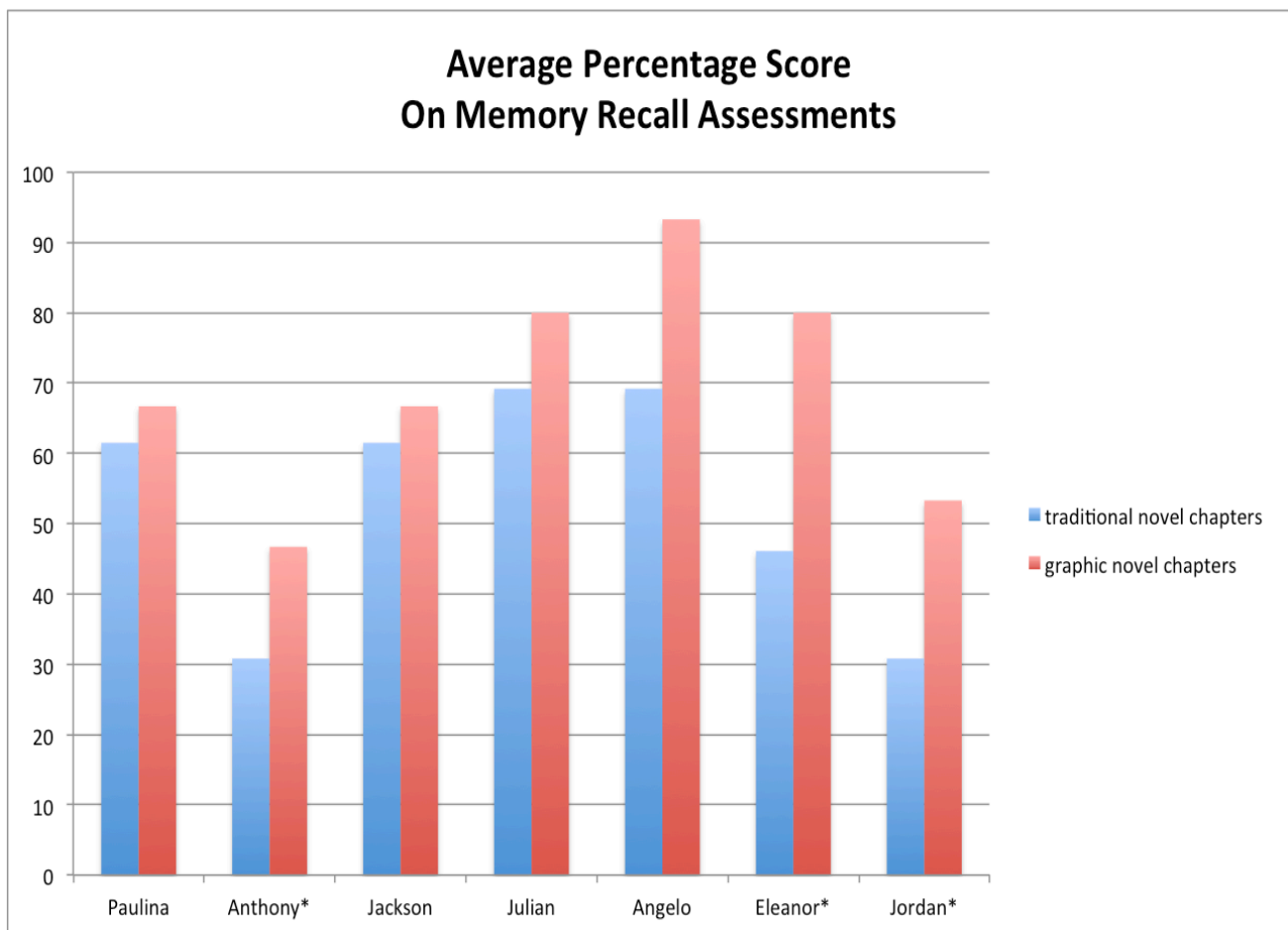
	Traditional Novel Chapters Average Percent Score	Graphic Novel Chapters Average Percent Score	Average Percentage score increase for Graphic Novels
Paulina	61.5 %	66.7%	+ 5.2%
Anthony*	30.8 %	46.7%	+ 15.9%
Jackson	61.5%	66.7%	+ 5.2%
Julian	69.2%	80%	+ 10.8%
Angelo	69.2%	93.3%	+ 24.1%
Eleanor*	46.1%	80%	+ 33.9%
Jordan*	30.8%	53.3%	+ 22.5%

\*Indicates a student on an Individual Education Plan (IEP)

The average percentage score on memory recall assessments were higher when students had read graphic novel chapters with all seven of the seven participants. When directly comparing the average percentage scores of memory recall assessments scores for traditional novel chapters and the memory recall assessments scores for graphic novel chapters by student, there shows a pattern of higher percentage scores for the chapters students read in the graphic novel format, with several averages increasing by up 20% or more. See Figure 5 below.

Figure 5

*Average Percentage Score on Memory Recall Assessments for Traditional Novel vs Graphic Novel*



\*Indicates a student on an Individual Education Plan (IEP)

The largest percentage score difference for a student participant between their memory recall assessments for graphic novels and traditional novels was a 33.9% difference. The student's score differed from 46.1% on the traditional novel memory recall assessment, to 80% on the graphic novel memory recall assessment. The combined average percentage score difference among participants as a group was a difference of 16.8% from the traditional novel percentage score to the graphic novel percentage score, with the graphic novel as the higher score. These results, when looking at my second research question, show that scores on memory recall assessments of a chapter's events are consistently higher when students have read the graphic novel format of a chapter.

## CHAPTER FIVE: CONCLUSIONS

In this chapter I begin by addressing the major findings and discussing those results. I will then determine the limitations that existed throughout this study. I will then address the implications these results may have on teachers and language learners. Finally, I will make some suggestions regarding any further and future research I would be interested in pursuing on this matter.

Many researchers have argued that reading comprehension and memory recall in learners can be increased through the use of visuals. Burke (2012), Paivo (2006), and Liu (2004) all researched and argued this point in their own way. This section will attempt to connect my research results with the research questions, as well as discuss what this means. The first question is: How can graphic novels affect the proficiency of reading comprehension, as shown by increased performance on the task of retelling, for middle school English Language Learners in comparison with a text only novel? Using the results of rubric graded written retells of chapters from both the traditional novel and graphic novel, the results show that students performed higher when writing about a chapter from the graphic novel format.

The second research question is: In what ways can the memory recall of a chapter's events be affected by the use of a graphic novel adaption in contrast with the traditional text format? Using memory recall assessments given the day after reading a chapter, the results show that students performed higher on memory recall assessments when they were drawing from chapters read using the graphic novel format.

### Discussion of Results

**Reading retells.** When looking at the overall rubric scores of the written retells

produced from interpreting the traditional novel compared to the written retells produced from interpreting the graphic novel, all students' scores increased, lending credence to the idea that the participants were better able to comprehend the plot elements of a chapter when interpreting the graphic novel version rather than the traditional novel version.

This seems to corroborate the thoughts of Bruce (2011) when he argues that visuals can serve as scaffolds within texts to aid interpretation. With students consistently scoring higher in regards to their ability to retell what they had read when they used graphic novels, it is hard to ignore that this very well may have been a direct results of the visual aspect of graphic novels themselves aiding in their understanding.

In much the same vein, it is hard to ignore Liu's (2004) concept of interpretation, and McCloud's (1993) similar thoughts on visuals making the abstract more concrete when interpreting this data. Potentially, the overall increase in scores could very easily have been a result of these concepts, as the visual nature of the graphic novel format could have served to reduce any confusion or abstractions created by the written word, and allowed a more concrete and universally recognized input to fill in the blanks through visuals.

**Memory recall.** Based on the results of the memory recall quizzes, all participants had higher percentage scores after reading the graphic novel chapters, indicating that the participants were better able to remember events after using the graphic novel format.

This increase during the use of graphic novels affirms Burke's argument that visuals account for better memory retention, in that the visuals can reduce the cognitive load that may exist when reading (2012). Scores indicate the use of graphic novels allowed students better retention of the important story elements, both short term for the written retells, as well as longer term for the memory recall assessments given the following 24 hours. This

ability to better recall information stems from the same concepts Liu presented to us earlier, in that visuals provide students reinforcement of the text, additional organization of the text, more concrete information, and a better format for storing information (2004).

The pairing of words with pictures that exists in the use of graphic novels is directly related to Paivio's Dual Coding Theory, and, he argues, since information is stored separately as words and images, it is these connections that allow for better memory recall and retention (2006). This claim is perfectly exemplified with the memory recall results found in this research. Without the images to pair written information with, it seems, the students scored lower on both their written retells and memory recall assessments. However, just as Paivio's theory suggests, when words were paired with pictures as in the graphic novel, in a similar fashion to the pictorial flashcards of early language learning that had words paired with pictures, the students were able to better read and understand the text, as shown by their superior scores after reading the graphic novel formats. Overall, the memory recall results this research provided seem to directly coincide with Paivio's own arguments on the brain's use of visuals in memory retention (2006).

### **Limitations**

Upon reflection of this study, there are many things I would alter or avoid if I were to do it again, all reactions to the various limitations that presented themselves throughout the process. One limitation was the lack of inter-rater reliability used in the grading of the written retells. To begin, due to my being the only 5<sup>th</sup> grade ELL teacher in the building, as well as the only one who read the chapters of the novel to the point of having a set knowledge of the events of each chapter that was to be assigned, I acted as the sole grader of the written retells. While I attempted to keep the written retell grading as uniform as

possible through the use of a rubric with specific grading points reflected therein, I was still faced with the knowledge that when it comes to grading writing one teacher can be completely different from another. The use of a rubric helps curb this to some degree, but it is hard to believe multiple teachers would interpret the rubric the same way; determining whether a student is being “wholly inaccurate”, “non-specific” or “accurate but vague” is certainly a fine line. More accurate findings may have resulted from multiple graders using the same rubric, and using a combined average of those scores.

Furthermore, I feel some of the language within the rubric itself is rather subjective and open for interpretation. To use one example, according to the rubric, students would receive a score of 2 instead of a perfect 3 if description of the setting was “...accurate but vague or with some inaccuracies.” However, during and after grading I had to continually ask myself, what exactly constitutes “vague”? If they describe the setting in general, but do not use a name or explicitly state it, is that still considered “vague” or not? While I attempted to answer these questions as they came, and remain consistent throughout, it certainly gave me insight as to potential limiting factors that may have influenced scores.

Another factor that I feel could have limited the results was the possible occurrence of chapters that were simply less difficult than others. Chapter difficulty could have influenced student scores on their written retells, with some chapters having far more important events to be included in a “good” retell than other chapters. Some chapters could be very complicated or involved, with multiple scenes, characters, events, and settings, while other chapters simply served to move the plot forward and included one main character and one setting.



As any language teacher may know, a student's comfort with his or her own writing, as well as their overall ability, is not something that can be fixed or improved upon in a short time, and certainly not in the short period of 20 days during this study. This leads me to question the limiting factor of student produced writing in itself. While I attempted to counter any confusion in regards to what to write by including teacher modeling, group practice, and the use of the same graphic organizer for the first 10 chapters before requiring independent work on Chapters 11-18, I still feel upon reflection that student writing is not the most accurate reflection of comprehension as seen by the varied scores. I believe the transference of their comprehension of the chapter to a medium many may have had little comfort with (writing) failed to accurately portray the most accurate results.

It's also possible that as the process became habitual, students had become bored or tired of the repetitive process of reading silently, completing a scaffolded graphic organizer, and writing a retell. Fatigue, motivation and stress are all factors that may have influenced results. The length and completeness of some retells were noticeably affected by the student's particular mood and investment on the particular day.

### **Implications**

I believe the results of this study confirm the importance of visuals for language learners as they progress towards the language levels of their native speaking peers. However, while the use of visuals may be common knowledge, the results of this study strongly suggest the usefulness of graphic novels as an aid in comprehension for language learners. In order for these students to access content that is above their language level, teachers need to do their part to use whatever tools and scaffolds they can, and this study argues that in regards to retells and comprehension of plot elements of a story, graphic

novels could be a viable option as a scaffold. Language learners seem to not only be better able to reproduce the main plot elements of a story after reading graphic novels, but it is also readily apparent that they are not losing comprehension of the story when switching from traditional novel to graphic novel. Furthermore, this study proves language learners will also remember the previous day's reading better using the graphic novel format, allowing them to better maintain their understanding as they progress throughout the story and possibly feel more confident and willing to participate in class discussions and reviews.

### **Further Research**

Throughout my research, there were many questions that came to me in regards to future work or study on this topic. One reoccurring question I had was to what degree is student motivation affecting the results? There have been numerous studies on measuring increased student motivation through the use of graphic novels. While this was not a focus of my particular study, I often wondered to what degree this motivation affected their results. Many personal student comments seemed to reflect an increased motivation when using the graphic novels, including such quotes as, "I feel like pictures make it easier," and "I really like it [the graphic novel], it helps me remember." Many students made similar comments throughout the process, and continually showed reluctance or dismay when it was a "traditional novel" day in comparison to general ease or even joy when it was a "graphic novel" day. Further research might include a pre and post survey to determine student feelings and attitudes in an attempt to garner some understanding of student motivation in regards to graphic novels.

## **Conclusion**

Language learners are a unique and ever-increasing student population that, despite being non-native speakers of English, are often required to perform difficult grade level tasks that require native-level comprehension. Content teachers need a varied set of tools and strategies to help our language learners develop their language levels and experience success. My student suggests that the use of graphic novels as a tool or scaffold can help language learners from the start by giving them a format that allows better memory retention and comprehension. Graphic novels could be used as a replacement for the traditional novel, pre-taught before attempting the more difficult text, or used as a supplement. As language learners use these tools and stepping stones to reach the level of understanding of their native speaking peers, they will be more willing and confident to speak, participate, and take risks in their learning. While the use of visuals has always been a hallmark of good language teaching, this study has opened my eyes to the use of an often-overlooked format when it comes to reading comprehension and retention for language learners. It is my hope it will help other teachers continually support their language learners as well.

## Appendix A : Written Retell Rubric

Idea Unit      Verbal Prompts Used      0      1      2      3

Key idea of chapter's event	What important events took place during this chapter?	Wholly inaccurate or not included	Does not recall many key ideas or inaccurately expresses events	Accurately expresses some key, although incomplete, events.	Accurately expresses all key events in the chapter to completeness.
Sequence of events	How does this chapter begin? What was the order of the events?	Wholly inaccurate or not included	States some events in order, but with some inaccuracies.	States many events in order, but with some inaccuracies	Accurately states events in correct order.
Problem	What was one important problem in this chapter?	Wholly inaccurate or not included	Includes chapter non-specific, vague, or unrelated problem.	Chapter's problem description is accurate but vague or with some inaccuracies.	Accurately states chapter's problem.
Resolution	How does the chapter end? Is a problem solved?	Wholly inaccurate or not included	States chapter non-specific or unrelated resolution.	Chapter's resolution description is accurate but vague or with some inaccuracies.	Accurately states chapter's resolution.
Characters	Who were the important or main characters in this chapter?	Wholly inaccurate or not included	States chapter non-specific or unrelated character descriptions or includes unimportant characters.	Chapter's character description is accurate but vague or with some inaccuracies.	Accurately states chapter's main characters.
Setting	Where and when does this chapter take place?	Wholly inaccurate or not included	States chapter non-specific or unrelated chapter setting.	Chapter's setting is accurate but vague or with some inaccuracies.	Accurately states chapter's setting.

## Appendix B: Chapter Recall Assessments

### **City of Ember Chapter 11 Review**

What does Lizzie have in her sack?

- a) colored pencils
- b) canned fruit
- c) light bulbs
- d) a map

Why are the items in Lizzie's sack important?

- a) the items are very rare
- b) the items will help solve the puzzle
- c) the items belong to the mayor
- d) the items are expensive

Who is the storeroom worker who finds these items?

- a) Mrs. Murdo
- b) Lizzie
- c) Looper
- d) Lina

Why does the storeroom worker give Lizzie the items?

- a) she asked the worker nicely
- b) the worker likes Lizzie
- c) the mayor said so
- d) Lizzie is royalty

### **City of Ember Chapter 12 Review**

What does Doon find behind the locked door?

- a) a room full of light bulbs and electronics
- b) a room full of food, clothes, boxes and cans
- c) a room full of books
- d) a janitor's closet

Who does Doon find in the room behind the locked door?

- a) Lina
- b) Looper
- c) The Mayor
- d) Doon's father

Lina and Doon decide to tell someone about the room. Who do they plan to tell?

- a) their family
- b) the Mayor
- c) the guards
- d) their teachers

What information does Lina also tell Doon?

- a) she likes him
- b) she found colored pencils
- c) her grandmother died
- d) her favorite song



**City of Ember Chapter 13 Review**

What does “Egress” mean?

- a) an eagle
- b) a river
- c) a secret group
- d) an exit

When do the children decide to announce to the city about the instructions?

- a) after they escape
- b) during “the singing”
- c) after they talk to the mayor
- d) as soon as possible

What is the letter marked stone they need to search for?

- a) a
- b) e
- c) i
- d) o

### **City of Ember Chapter 14 Review**

Why was the Pipeworks closed?

- a) closed for repair
- b) the power was off
- c) rehearsals for “the singing”
- d) it was flooded

What did Lina and Doon find at the bottom of the mystery ladder?

- a) a steel panel door
- b) a steel frying pan
- c) a broom closet
- d) the mayor’s office

What is inside each of the boxes Lina and Doon find?

- a) food and clothes
- b) batteries and wire
- c) candles and matches
- d) maps and pencils

What do Lina and Doon find in the room they enter?

- a) books
- b) food
- c) a boat
- d) treasure

### **City of Ember Chapter 15 Review**

While Lina and Doon are searching the hidden room, they find another door that leads to another room. What do they find inside?

- a) hundreds of boats
- b) hundreds of boxes
- c) a room of treasure
- d) another door

What did Doon put in his pillowcase traveling pack?

- a) candles and his key
- b) pencils and a map
- c) clothes
- d) his bug book

What happened with Doon's green worm before he left?

- a) it died and he buried it
- b) he gave it to his Dad
- c) it seemed to say goodbye
- d) it grew into a moth and he set it free

Who is looking for Doon and Lina?

- a) their parents
- b) the Mayor's guards
- c) their bosses
- d) the entire village

### **City of Ember Chapter 16 Review**

Lina and Doon decide to escape. How do they plan to tell everyone?

- a) send an email later
- b) shout it out loud as they escape
- c) write and deliver a note
- d) they don't plan to tell

After Lina gets captured, how was she able to escape from the Mayor and his guards?

- a) she fights them off
- b) she runs away when the lights turn off
- c) she tells them a riddle
- d) Doon helps her break out

What does Lina see in the crowd of people that tells her Doon is ok?

- a) his candle
- b) a flag
- c) the moth
- d) Doon waves at her

### **City of Ember Chapter 17 Review**

Where was Lina supposed to meet Doon?

- a) the school
- b) the Mayor's office
- c) the pipeworks
- d) her house

Why was Lina late meeting Doon?

- a) she had to bring food
- b) she stopped to get her colored pencils
- c) she stopped to get Poppy
- d) she got lost

How do Lina, Doon, and Poppy escape the City of Ember?

- a) walking along a path
- b) by boat through a river
- c) crawling through a cave
- d) climbing down a ladder

**City of Ember Chapter 18 Review**

What do Lina and Doon find when the river stops and they get out?

- a) a mountain
- b) a path
- c) a house
- d) food

What did Lina forget to do before she left?

- a) bring food
- b) deliver the message about their plan
- c) check the map
- d) hide the instructions

How can Lina and Doon return to the City of Ember?

- a) by plane
- b) by climbing a mountain
- c) they can't return
- d) by calling for help

## Appendix C: Retell Organizer Scaffold

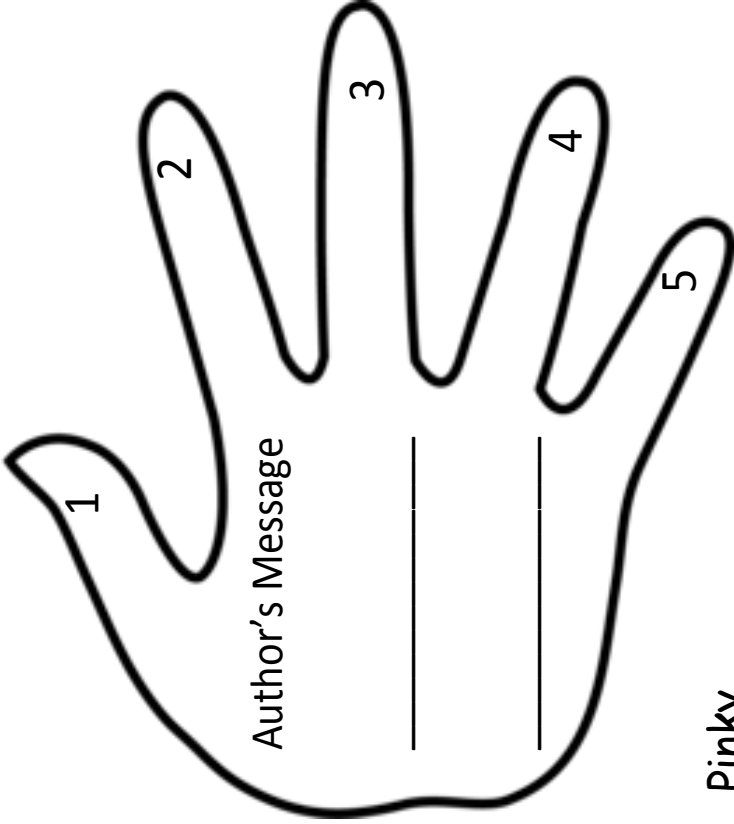
# The Retelling Hand

1. Thumb

- ◆ Main character (s)

---

---



5. Pinky

- ◆ Solution to the problem

---

---

2. 1<sup>st</sup> finger

- ◆ Setting: where and when the story takes place

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---

3. Middle finger

- ◆ Problem: the problem in the story

---

---

4. Ring finger

- ◆ Events: name at least three

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## Appendix D: Academic Vocabulary Transition Words

# fiction stories

name \_\_\_\_\_

\*using ordinal words

first

next

then

last

## Appendix E: Sample Traditional Novel Text

## CHAPTER 12

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### *A Dreadful Discovery*

About a week after he and Lina had seen the man come out the mysterious door, Doon was assigned to fix a clog in Tunnel 207. It turned out to be easy. He undid the pipe, rammed a long thin brush down it, and a jet of water spurted into his face. Once he'd put the pipe back together, he had nothing else to do. So he decided to go out to Tunnel 351 and take another look

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at the locked door. It was strange, he thought, that no announcement about a way out of Ember had come. Maybe that door had not been what they thought it was.

So he set out for the south end of the Pipeworks. When he came to the roped-off passage in Tunnel 351, he ducked in and walked along through the dark, feeling his way. He was pretty sure the door would be locked as usual. His mind was on other things. He was thinking of his green worm, which had been behaving oddly, refusing to eat and hanging from the side of its box with its chin tucked in. And he was thinking about Lina, whom he hadn't seen for several days. He wondered where she was. When he came to the door, he reached absently for the

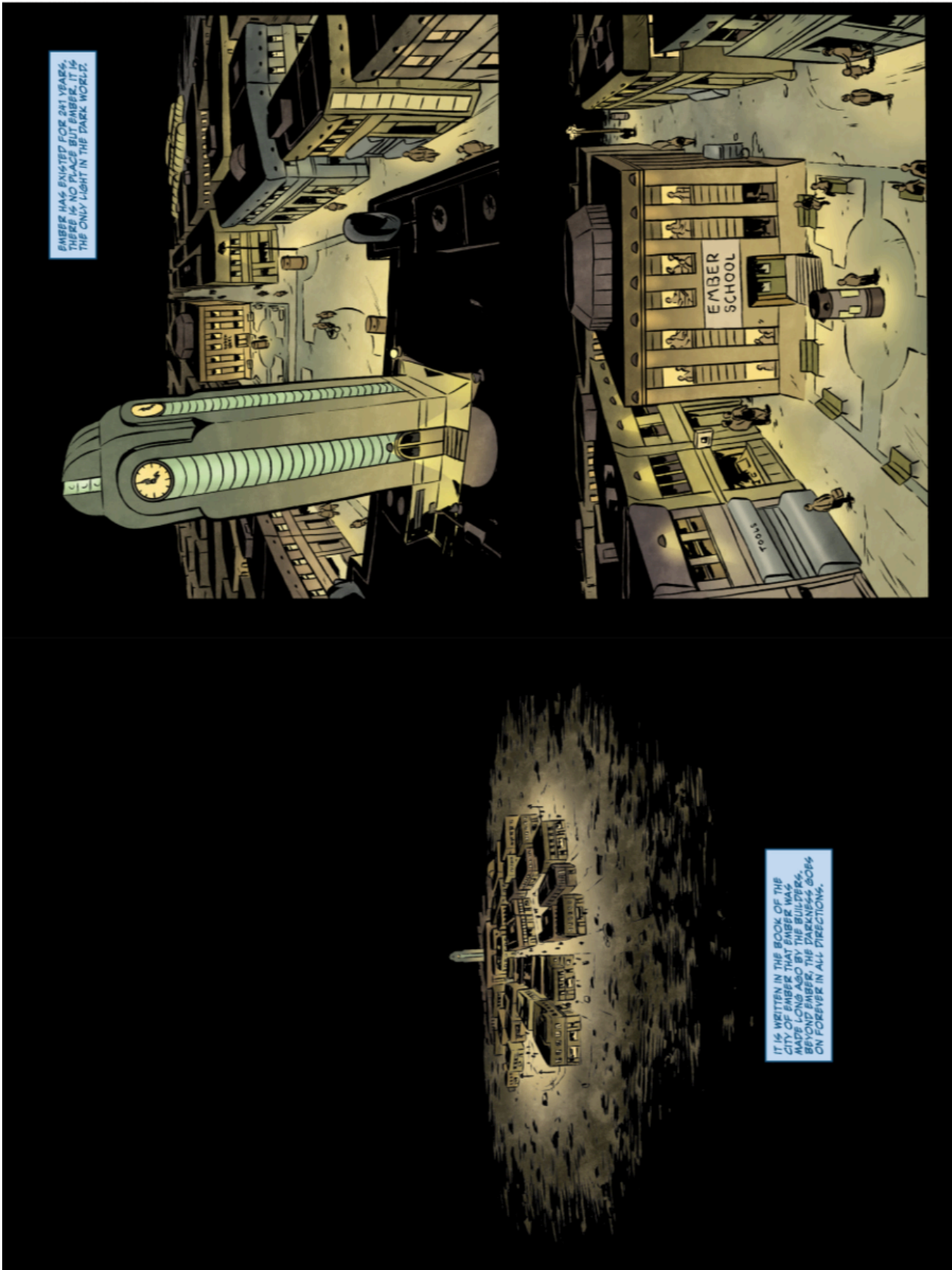
knob, and what he felt startled him so much that he snatched his hand back as if he'd been stung. He felt again, carefully. There was a *key* in the lock!

For a long moment, Doon stood as still as a statue. Then he took hold of the doorknob and turned it. Very slowly, he pushed on the door. It swung inward without a sound.

He opened it only a few inches, just enough to peer around the edge. What he saw made him gasp.

There was no road, or passage, or stairway behind the door. There was a brightly lit room, whose size he could not guess at because it was so crowded with

## Appendix F: Sample Graphic Novel Text









## Appendix G: Parent Permission Letter

### **Capstone Study Consent Letter**

January 6th, 2016

Dear Parent or Guardian,

I am your child's English Language teacher and a graduate student working on an advanced degree in education. As part of my graduate work, I plan to conduct research in my classroom from April 11-June 10, 2016. The purpose of this letter is to ask your permission for your child to take part in my research. The research I do will be cataloged in my universities Digital Commons, and is, therefore, searchable on the Internet. It may also be published in future educational journals or used in other ways. However, it is important for you to know that no student names or individualized identification of the student in any manner will be included in the research.

In my research, I want to study how using graphic novels in the classroom can affect a student's reading comprehension of a passage. I have used graphic novels in the classroom for three years and want to collect further information about their possible benefits for my study. I plan to have a reading group read a story, with one day devoted to reading a chapter in a traditional book format and the next day reading the next chapter in graphic novel format of the same book. Next, students will be asked to "retell" the particular section of the story, in written format. Each student will receive a score indicating their ability to accurately retell the important events in the story, and information like what important events were left out, what unnecessary events were included, and whether the events were remembered in the correct order will be reviewed.

There is little to no risk for your child to participate. All results will be confidential and anonymous. I will not record information about individual students, such as their names, nor report identifying information or characteristics in the study. Participation is voluntary and you may decide at any time and without negative consequences that you do not want your child to be a part of the study.

I have received approval for my study from Hamline University, as well as from ISD 197 district curriculum supervisor. The capstone will be kept in my university's Digital Commons, a searchable electronic library. My results might also be included in future published articles or professional journals. In all cases, your child's identity and participation in this study will be confidential. If you agree that your child may participate, keep this page. Fill out the duplicate agreement to participate on page two and return to me no later than April 11th. If you have any questions, please email or contact me at school.

Sincerely,

Stephen Meuer

Heritage Middle School

Stephen.meuer@isd197.org

Informed Consent to Participate in Qualitative Study  
 Keep this full page for your records.

I have received your letter about the study you plan to conduct in which you will be observing students' abilities to retell a story in groups. I understand there is little to no risk involved for my child, that his/her confidentiality will be protected, and that I may withdraw or my child may withdraw from the project at any time.

\_\_\_\_\_  
 Parent/Guardian Signature

\_\_\_\_\_  
 Date

Participant copy

Informed Consent to Participate in Qualitative Interview  
 Return this portion to Mr. Stephen Meuer at Heritage Middle School

I have received your letter about the study you plan to conduct in which you will be observing students' abilities to retell a story in groups. I understand there is little to no risk involved for my child, that his/her confidentiality will be protected, and that I may withdraw or my child may withdraw from the project at any time.

\_\_\_\_\_  
 Parent/Guardian Signature

\_\_\_\_\_  
 Date

Researcher copy

### Capstone Estudio Consentimiento Carta

Estimado padre o tutor,

Soy profesor de Inglés de su hijo y un estudiante graduado que trabaja en un grado avanzado en educación. Como parte de mi trabajo de graduación, tengo la intención de llevar a cabo la investigación en mi salón de clases a partir del 10 de mayo. . El propósito de esta carta es solicitar su permiso para que su hijo participe en mi investigación. La investigación que hago será catalogado en mis universidades Digital Commons, y es, por lo tanto, realizar búsquedas en Internet. También puede ser publicado o utilizado de otra manera. Sin embargo, es importante que usted sepa que no hay nombres de los estudiantes o de identificación individualizada del estudiante de cualquier manera serán incluidos en la investigación.

En mi investigación, yo quiero estudiar cómo el uso de las novelas gráficas en el aula puede afectar la comprensión de lectura de un estudiante de un pasaje. He utilizado las novelas gráficas en el salón de clases durante tres años y quiere recoger más información sobre sus posibles beneficios para mi estudio. Planeo tener un grupo de lectura leer una historia , con un día dedicado a la lectura de un capítulo en un formato de libro tradicional y al día siguiente de leer el siguiente capítulo en formato novela gráfica del mismo libro .- A continuación, se les pedirá a los estudiantes a "contar" la sección particular de la historia, a veces por vía oral y, a veces, en formato escrito. Cada estudiante recibirá una puntuación que indica su capacidad de volver a contar con precisión los acontecimientos importantes en la historia, y la información como lo que eventos importantes quedaron fuera, qué eventos innecesarios fueron incluidos, y si los hechos fueron recordados en el orden correcto se-revisado.

Hay poco o ningún riesgo de que su hijo participe. Todos los resultados serán confidenciales y anónimas. No voy a registrar la información acerca de los estudiantes individuales, como sus nombres, ni información de identificación informe o características en el estudio. La participación es voluntaria y usted puede decidir en cualquier momento y sin consecuencias negativas que usted no quiere que su hijo sea una parte del estudio.

He recibido la aprobación para mi estudio de mi escuela de estudios, así como de ISD 197 supervisor de currículo del distrito. El toque final se mantendrá en los Comunes Digitales de mi universidad, una biblioteca electrónica de búsqueda. Mis resultados también podrían incluirse en futuras publicado artículos o revistas profesionales. En todos los casos, la identidad de su hijo y la participación en este estudio serán confidenciales. Si está de acuerdo que su hijo puede participar, mantener esta página. Rellene el acuerdo duplicado para participar en la segunda página y vuelve a mí no más tarde del 11 de enero. Si usted tiene alguna pregunta, envíe un correo electrónico o póngase en contacto conmigo en la escuela.

Sinceramente,

Stephen Meuer  
Heritage Middle School  
[Stephen.meuer@isd197.org](mailto:Stephen.meuer@isd197.org)

Yolanda Beltran  
de Enlace Familiar  
[Yolanda.beltran@isd197.org](mailto:Yolanda.beltran@isd197.org)

Consentimiento informado para participar en el Estudio Cualitativo  
Guarde esta página completa para sus archivos.

He recibido su carta sobre el estudio que va a realizar en el que se le observando habilidades de los estudiantes para volver a contar una historia en grupos. Entiendo que hay poco o ningún riesgo que implica para mi hijo, que su / su confidencialidad será protegida, y que puedo retirar o mi niño puede retirarse del proyecto en cualquier momento.

---

Padre / Guardián Fecha

Copia Participante

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Consentimiento informado para participar en la entrevista cualitativa  
Devuelva esta porción al Sr. Stephen Meuer en Heritage Middle School

He recibido su carta sobre el estudio que va a realizar en el que se le observando habilidades de los estudiantes para volver a contar una historia en grupos. Entiendo que hay poco o ningún riesgo que implica para mi hijo, que su / su confidencialidad será protegida, y que puedo retirar o mi niño puede retirarse del proyecto en cualquier momento.

---

Padre / Guardián Fecha

Copia Investigador

### Bibliography

- Arnold, A.D. (2003). The Graphic Novel Silver Anniversary. *Time Online Edition*. Retrieved from <http://content.time.com/time/arts/article/0,8599,547796,00.html>
- Brown, H. & Cambourne, B. (1987). *Read and Retell: A Strategy for the Whole Language/Natural Learning Classroom*. Portsmouth: Heinemann
- Bruce, D. L. (2011). Framing the text: Using storyboards to engage students with reading. *The English Journal*, 100(6), 78-85. Retrieved from <http://www.jstor.org/stable/23047885>
- Burke, B. P. (2012). *Using comic books and graphic novels to improve and facilitate community college Students's literacy development* Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED551679&site=ehost-live>; [http://gateway.proquest.com/openurl?url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:dissertation&res\\_dat=xri:pqm&rft\\_dat=xri:pqdiss:3546922](http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:3546922)
- Clark, J. M., & Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review*, 3, 149–210.
- Cohen, L., Krustedt, R. L., & May, M. (2009). Fluency, text structure, and retelling: A complex relationship. *Reading Horizons*, 49(2), 101-124. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ867135&site=ehost-live>; <http://www.wmich.edu/coe/spls/reading-horizons/index.htm>
- Cook, M. P. (2014). *Reading graphically: Examining the effects of graphic novels on the reading comprehension of high school students* (Doctor of Philosophy Curriculum & Instruction).
- Cromley, J. G., & Azevedo, R. (2006). Self-report of reading comprehension strategies: What are we measuring? *Metacognition & Learning*, 1(3), 229-247. doi:10.1007/s11409-006-9002-5
- Dornyei, Z. (2007). *Research methods in applied linguistics*. New York: Oxford University Press.
- Eisner, W. (1985). *Comics and sequential art*. Paramus, NJ: Poorhouse Press.
- Fletcher, J. M. (2006). Measuring reading comprehension. *Scientific Studies of Reading*, 10(3), 323-330. doi:10.1207/s1532799xssr1003\_7
- Ford, Karen. (2005, July). *Fostering literacy development in English Language Learners*. Paper presented at the American Federation of Teacher's QuEST Conference, Washington, DC.
- Frey, N. & Fisher, D. (2004) Using Graphic Novels, Anime, and the Internet in an Urban High School. *English Journal*, 93, pp 19-25. doi: 10.2307/4128804



- Frey, N & Fisher, D. (2011) *The Formative Assessment Action Plan*. Alexandria, VA: ASCD.
- Gambrell, L. B., Koskinen, P. S., & Kapinus, B. A. (1991). Retelling and the reading comprehension of proficient and less-proficient readers. *Journal of Educational Research*, 84(6), 356. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=keh&AN=5819447&site=ehost-live>
- Gambrell, L. B., Pfeiffer, W. R., & Wilson, R. M. (1985). The effects of retelling upon reading comprehension and recall of text information. *Journal of Educational Research*, 78(4) Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=5005483&site=ehost-live>
- Irwin, P. A., & Mitchell, J. N. (1983). A procedure for assessing the richness of retellings. *Journal of Reading*, 26, 391-396.
- Kintsch, W. and Kintsch, E. (2005). Comprehension. In Paris, S. G. and Stahl, S. A. (eds.) *Children's Reading Comprehension and Assessment*, (pp 71–92). Mahwah, NJ: Erlbaum.
- Klingner JK. (2004). Assessing reading comprehension. *Assessment for Effective Intervention*. 2004; 29(4): 59–70.
- Kucer, S. B. (2005). *Dimensions of literacy: A conceptual base for teaching reading and writing in school settings*. (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kuldaneck, K. (1998). *The effects of using a combination of story frames and retelling strategies with learning disabled students to build their comprehension ability* Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED416469&site=ehost-live>
- Levie, W. H. & Lentz, R. (1982). Effects of text illustrations: A review of research. *Educational Communication and Technology*, 30(4), 195-233.
- Levin, J. R., Anglin, G. J., & Carney, R. N. (1987). On empirically validating functions of pictures in prose. In D. M. Willows, & H.A Houghton (Eds.), *The psychology of illustration. Vol 1*. New York: Springer-Verlag, 51 - 85.
- Liu, J. (2004). Effects of comic strips on L2 learners' reading comprehension. *TESOL Quarterly*, 38(2), 225-243. Retrieved from <http://search.proquest.com/docview/85638343?accountid=28109>
- McCloud, Scott. (1993). *Understanding Comics: The Invisible Art*. New York: Paradox Press.
- Merriam, S. B. (2009). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.

- MetaMetrics. (2016). *The Lexile® Framework for Reading*. Retrieved from <https://www.metametricsinc.com/lexile-framework-reading/>
- Michigan State University College of Osteopathic Medicine. (2014). *Whole student learning series: Study tips for improving long-term memory retention and recall*. Retrieved from [http://com.msu.edu/Students/Academic\\_Guidance/long\\_term\\_retention\\_recall.pdf](http://com.msu.edu/Students/Academic_Guidance/long_term_retention_recall.pdf).
- Moore, D., & Smith, M. (2014.). *Reading Instruction for Students with Learning Disabilities. Best Practices in Secondary Education*.
- Moss, B., Lapp, D., & O'Shea, M. (2011). Tiered texts: Supporting knowledge and language learning for English learners and struggling readers. *English Journal*, 54-60.
- Ortega, L. (2008). *Understanding Second Language Acquisition*. New York: Routledge
- Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt, Reinhart & Winston.
- Paivio, A. (1986). *Mental representations: A dual coding approach*. New York: Oxford University Press.
- Paivio, A. (1991). Dual coding theory: Retrospect and current status. <http://dx.doi.org/10.1037/h0084295>. *Canadian Journal of Psychology*, 45(3), 255-287.
- Paivio, A. (2006). *Dual coding theory and education. Draft chapter presented at conference on Pathways to Literacy Achievement for High Poverty Children, The University of Michigan School of Education*.
- Paris S G & Stahl S A (Eds.), 2005. *Children's Reading Comprehension and Assessment*. New York: Lawrence Erlbaum Associates, Inc.
- Reed, D. K., & Vaughn, S. (2012). Retell as an indicator of reading comprehension. *Scientific Studies of Reading*, 16(3), 187-217. doi:10.1080/10888438.2010.538780
- Roe, B.D., Smith, S.H., & Burns, P.C. (2005). *Teaching reading in today's elementary schools* (9th ed.). Boston: Houghton Mifflin.
- Sadoski, M., & Paivio, A. (2001). *Imagery and text: A dual coding theory of reading and writing*. Mahwah, N.J.: Lawrence Erlbaum\_Associates.
- Shaw, D. (2005). *Retelling strategies to improve comprehension: Effective hands-on strategies for fiction and nonfiction that help students remember and understand what they read*. New York: Scholastic

- Snow, C.E. & Sweet, A.P. (2003). *Rethinking reading comprehension*. New York: Guilford Press.
- Trabasso, T., & van den Broek, P. (1985). Causal thinking and the representation of narrative events. *Journal of Memory and Language*, 24, 612-630.
- Traeger, Dan. (2007). *The Pride of Baghdad* [online review]. Retrieved from <http://seuart.org/magazine/28688/the-pride-of-baghdad>
- Vacca, C. (1959). Comic books as a teaching tool. *Hispania*, 42, 291-292. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eir&AN=520311052&site=ehost-live>
- van den Broek, P. (1989). Causal reasoning and inference making in judging the importance of story statements. *Child Development*, 60, 286-297.
- van den Broek, P., & Kremer, K. E. (2000). The mind in action: What it means to comprehend during reading. In B. Taylor, M.F. Graves, & P. van den broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades* (pp. 1-31). New York: Teachers College Press.
- Vygotsky, L. (1978). Interaction Between Learning and Development. In Gauvain & Cole (Eds.), *Readings on the Development of Children* (pp. 34-40). New York: Scientific American Books.
- Westerveld, M. (2009). Measuring reading comprehension ability in children. *Acquiring Knowledge in Speech, Language & Hearing*, 11(2), 81-84. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eft&AN=508420181&site=ehost-live>