ADAPTING THE GRAPHIC NOVEL FORMAT FOR UNDERGRADUATE LEVEL TEXTBOOKS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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ABSTRACT

This dissertation explores ways in which the graphic narrative (graphic novel) format for storytelling, known as sequential art, can be adapted for undergraduate-level introductory textbooks across disciplines. Currently, very few graphic textbooks exist, and many of them lack the academic rigor needed to give them credibility. My goal in this dissertation is to examine critically both the strengths and weaknesses of this art form and formulate a set of standards and procedures necessary for developing new graphic textbooks that are scholastically viable for use in college-level instruction across disciplines. To the ends of establishing these standards, I have developed a four-pronged information-gathering approach. First I read as much pre factum qualitative and quantitative data from books, articles, and Internet sources as possible in order to establish my base of inquiry. Second, I created a twelve-part dissertation blog (graphictextbooks.blogspot.com) where I was able to post my findings and establish my integrity for my research among potential interviewees. Third, I interviewed 16 professional graphic novel/graphic textbook publishers, editors, writers, artists, and scholars as well as college professors and librarians. Finally, I sent out an online survey consisting of a sample chapter of an existing graphic textbook to college professors and asked if the content of the source material was potentially effective for their own instruction in undergraduate teaching. For me, the interviews were the most enjoyable part of this process and yielded significant, actionable information from which I could
draw practical conclusions. The results of the dissertation blog exceeded expectations in that the readership extended further than anticipated. Through the use of statistical analysis tools within Blogspot, I discovered the Graphic Textbooks blog has been viewed over 3,000 times to date since it first appeared on September 4, 2012. While 68% of these page views originated from the United States, it has also been accessed from 61 other countries, of which Germany and Russia comprise the largest readership (See Appendix C: Dissertation Blog Page Views by Country).

Adapting undergraduate-level introductory textbooks in all disciplines has tremendous educational implications as we enter the digital eTextbook age. When placed on a digital platform, graphic narratives can not only simulate a classroom environment, but, because they are self-paced and utilize characters that engage the reader, can also replicate a one-on-one student/tutor dynamic as well. These understandings have implications for both introductory-level learning within a college or university setting and for distance learning where personable interaction is either limited or non-existent. Through my involvement in this research project, I have concluded that the true power of graphic narratives, of these unique multi-sensory scaffolding tools lies in their ability to help instructors motivate and educate their students. In terms of their positionality within art education, graphic narratives are malleable constructs that speak to many aspects of our discipline such as: visual culture, social media, narratology, visual learning, literacy development, design thinking, and the development of imaginative problem-solving skills. Graphic narratives can be as intimate as a memoir of a teenage girl living in Tehran (Persepolis); as inspiring as a biography of a boy growing up in poverty to become a sports star (21: The Story of Roberto Clemente); or as educational as a textbook
(The Cartoon Introduction to Economics: Volume One: Microeconomics). Graphic narratives are a verbal/visual medium whose only limitations lie in the imaginations, creativity, and skill of their creators, and likewise in the willingness of the viewers/readers to actively engage in interpreting and making meaning from this iconographic art form.
DEDICATION

For my family, Kathy, Quin, and Ryan

who have suffered through my insanity smiling…

…and groaning.
ACKNOWLEDGMENTS

I would like to thank my dissertation committee members: Professor Clayton Funk who understands me (at least I think he does), Professor Arthur Efland who inspires me, Professor Jared Gardner for his help in shaping the narrative of my dissertation, Professor Shari Savage for “pinch hitting” for me, and Professor Candace Stout who championed this dissertation from the start. I would also like to thank Professor Christine Ballengee-Morris (my first Art Education teacher) for bringing me into this “family,” Professor Patricia L. Stuhr for seeing something in me that I did not see in myself, and my fellow students who have walked this path with me. Finally, I would like to thank my 16 interviewees for their time and patience.

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* The production and publication of Optical Allusions was made possible through a grant from the National Science Foundation.

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Mark Schultz
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Graphic narrative writer and illustrator.

Mr. Steranko is a legendary figure in the comic book industry, and in the 1960s-1970s helped establish some of the visual iconography and techniques used by graphic narrative creators today.

In 1976, Mr. Steranko created the “Visual Novel” Chandler, which is considered one of the first graphic novels.

Kim Thompson  
Vice President, Editor, and Co-Publisher at Fantagraphics Books. For over thirty years Mr. Thompson has championed the cause of alternative comics in the American market. A long-time proponent of European comics, Mr. Thompson has also translated the work of a number of international cartoonists published by Fantagraphics.

Among some of the many notable cartoonists published by Fantagraphics Books include: Jessica Abel, Peter Bagge, Ivan Brunetti, Charles Burns, Daniel Clowes, Roberta Gregory, Joe Sacco, and Chris Ware.

A Columbus Public Library librarian who wished to remain anonymous.
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The Ohio State University, Arts Administration, Education and Policy Department, Columbus, Ohio. Graduate Teaching Assistant, AE252: Computer in the Visual Arts (Photoshop, and Social Media Theory).

Maintained a ninety-eight percent student approval rating over six consecutive quarters.

2012 Graduate Associate Teaching Award Nominee.

2011

M.A. History of Art, The Ohio State University

1997-2009

Columbus College of Art & Design, Columbus, Ohio. Adjunct Professor in the Illustration Department (various).

1992-present


Guest lecturer, panelist, and interviewer at science-fiction and comic book conventions across the country, discussing the history of illustration and sequential art.

My first book, Hal Foster: Prince of Illustrators was a 2002, IPPY Award Silver Medalist, a New York Times Book Review
“Spotlight” book, a Globe & Mail “Pick of the Week,” and an Eisner Award Nominee.


See list of publications for additional information.

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Shared Resources, Columbus, OH. Computer Programmer for Nationwide Insurance, Ashland Chemical, and Bank One accounts.

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aben


FIELDS OF STUDY

Major Field: Arts Administration, Education, and Policy

Minor Field: History of Art
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PROLOGUE

Over the past ten years the graphic novel has gained unprecedented acceptance by academicians internationally. Just Google “comics in the classroom as an introduction to narrative structure,” and you will find over 20 million hits. From comics in primary school classrooms to degreed programs in colleges and universities, scholars are becoming more attuned to the strengths of this unique verbal/visual scaffolding tool. In addition to numerous anecdotal, qualitative reports, new studies by Dr. Jay Hosler (Juniata College, 2012), and Dr. Jeremy Short (University of Oklahoma, 2013) have recently revealed quantifiable data in support of this medium’s potential for education. Now, poised at the leading edge of the digital eTextbook age, this once-ridiculed art form has the potential to evolve into a powerful, sensory-engaging, multi-modal educational tool.

Having completed this research project, it is my opinion that one day introductory-level educational Graphic eTextbooks for college students will be the norm rather than the exception. The sequential art medium used in graphic narratives is not a juvenile art form; it is a hybridized, verbal/visual, problem-solving, engaging art form that entertains as it educates. These strengths are an asset in an educator’s arsenal against illiteracy, especially now when there is a growing fear that the educational system cannot keep up with changes in the digital landscape. Graphic eTextbooks can help in this
transition because they can make learning enjoyable without diluting the concepts and information to be learned.

The use of comics in the classroom is not a new concept, and, for art educators, began much earlier than Brent Wilson’s studies of J. C. Holz’s *Superheroes* in the early 1970s (Wilson, 1974). To my knowledge, the earliest reported accounting of using superhero comic books in the classroom occurred shortly after the first appearance of Superman in *Action Comics* #1 in 1938 (the first superhero comic book). The following was written by Milton Schwebel, Professor Emeritus of the graduate school of applied and professional psychology at Rutgers University, as well as Dean Emeritus of the graduate school of education of the same institution. Professor Schwebel was also the founding chair of American Psychological Association's Advisory Committee on Impaired Psychology for eight years, and founding editor of the APA divisional publication, *Peace and Conflict: Journal of Peace Psychology* for seven years. It is the earliest account that I have found regarding the use of comic books in the classroom and it validates my belief in the benefits of using graphic narratives for teaching undergraduate students.

Recent attention to the use of comic books in schools drove me to the search engine Google, where my query of the phrase yielded 682,000 English pages. [In] the late 1930s, when, as a high school substitute teacher in Troy, N.Y., I was called upon to teach a course in English for students in a low-status vocational program. [...] To my dismay, I discovered that the chief literary fare in this so-called class in English consisted of comic books. As a recent graduate of Union College in Schenectady, N.Y. —then an all-male institution of about 800, with a proud record of well over a century of teaching the liberal arts and science — and with a major in philosophy, I had nothing but disdain for this folly and for the elderly teacher, now ill, who had created it.
Fortunately for me, she was absent for a month, during which time I came to see that my arrogance had blinded me to her creativity. These boys and girls, all from working-class families, many of them children of immigrants, were devouring the comic books, and were reading for pleasure for the first time. Some of them had moved from comic books to Mark Twain, Charles Dickens, and Jack London, and they enjoyed discussing Oliver Twist as much as Superman.

The wisdom of this experienced woman taught me that there are numerous ways to get children hooked on books and learning. In the many ensuing years, the lesson I learned from her influenced my teaching at the college, university, and postdoctoral levels. I discovered that it didn't matter whether an instructor lectured, led discussions, or used role-play or any other procedure, provided the students—no matter their age—were engaged. It's not surprising that educational research has substantiated that principle.

―Milton Schwebel, Education Week, February 20, 2008

Note: As of April 19, 2013, just five years after Professor Schwebel’s letter was published, his Google query comic books in schools now yields 41,600,000 results due to the increased interest in this topic.
PREFACE

My Positionality With the Material

I am a visual learner. That is neither a good nor a bad thing; it is simply my way of knowing the world around me and how I derive meaning. Approximately, 65% of people are visual learners (Vakos, 2013). Pick any decade, pick any study, and you will find percentages below and above that figure, but you will see that all tolled the number of visual learners averages out to roughly two-thirds of the population. I am also a comic book native. I grew up with them. In fact, I cannot remember a time without comic books (probably because my brother is seven years older than me). Comic books are how I learned to read. They are how I learned to spell “Amazing” (Spider-Man), “Fantastic” (Four), “Incredible” (Hulk), “Invincible” (Iron Man), and “Uncanny” (X-Men). They are how I learned story structure. Comic books also taught me that mediocre art will never detract from a well-told tale, but even the best artist in the business cannot save a poorly-conceived story.

Comic books are also how I came to love visual art and how I came to understand the power of the graphic narrative art form. The summer after I turned five-years-old we went to visit my grandmother in New Jersey. I remember sitting with my brother on the porch of her neighbors’, the Dudishine’s, reading comic books, and devouring a copy of Tales of Suspense #45, featuring Iron Man. The week ended, we left for home, and that comic book slipped from my memory. In 2003, forty years later, I picked up Marvel
Masterworks: Iron Man, Volume #1, which reprinted that issue. As I turned to the story I enjoyed as a child it all came back to me. Before I could turn the page I “saw” the art in my head. I saw the panels frame-for-frame in my “mind’s eye” as neural pathways, long-since abandoned, fired once more in my brain. But it was more than just the visuals of that story that came back to me. I smelled the pulp paper and fresh ink and the warm summer air. I felt the wood beneath me and the roughness of the gray peeling paint. I heard the leaves of the trees that lined the street rustling gently in a slight breeze. Cars sped by, a small black ant crawled on my bare leg, someone was mowing grass somewhere, Dorothy, a special needs woman walked across the street, birds chirped, the kids two doors down were spraying each other with a hose and squealing, and, because the windows were always open since no one in those days had central air, I could smell something (cookies!) baking in my grandmother’s oven next door, beckoning me to come home. At that moment, snapping back into the present, I realized I was salivating.

I am a visual learner and I understand just how powerful graphic narratives can be for education. I believe in this medium and I believe that as an educational tool the use of graphic eTextbooks will eventually become the norm rather the exception for introductory-level undergraduate teaching. It is my goal, and the goal of this dissertation to find ways to make that happen.
DEFINITIONS OF TERMS USED IN THIS DISSERTATION

The terms graphic novel, picture novel, visual novel, and long-format comic book all mean the same thing. Simply put, comic books and graphic novels are visual narrative mediums that tell their stories by using multiple static images, called panels, placed consecutively throughout the book (physical or digital) with each panel containing complementary text, juxtaposed text, parallel text, or no text at all. This technique is called sequential art (Eisner, 1985). A story told through the use of sequential art is a graphic narrative. Because the art is in service to the narration, each panel may or may not have text, but each panel must progress the overall story. In fact, some sequential art stories are told entirely though images with no text, which is similar, in theory, to silent film. Furthermore, like traditional text-only books, yet unlike film, a story told via sequential art is interpreted, read, or, better still, experienced at the viewer’s own pace. Essentially, a graphic novel is nothing more than a long-format comic book, or, to use Pulitzer Prize-winning graphic novelist, Art Spiegelman’s definition; it is “a comic book that needs a bookmark” (McGrath, 2004, 26).

Since the terms graphic novel format and sequential art are predominately synonymous I will use the latter (sequential art) when referencing the art form. Additionally, since textbooks are not novels, and deal primarily with relaying information rather than developing story arcs or character arcs, I will use the term graphic textbooks when referencing sequential art textbooks, and graphic eTextbooks when referencing
digitally formatted versions. This distinction is not intended to exclude the possibility for
the development of biographic or historic graphic novels for the undergraduate
classroom, but rather to acknowledge the difference between the two formats in terms of
intent, approach, and audience. *Graphic narrative* is an all-inclusive term and will be
used when referencing any sequential art format be it comic book, graphic novel, or
graphic textbook. Finally, the terms *illustrated book(s)* and *illustrated textbook(s)* will be
used to designate books that do not use sequential art in order to tell stories or relay
information, but rather include minimal “spot” illustrations that help elucidate passages
within the text.

Glossary of Additional Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comics Code Authority</td>
<td>A self-policing code of ethics and standards developed for the comic book industry in the 1950s, as an alternative to government regulations.</td>
</tr>
<tr>
<td>Panel</td>
<td>A frame of art on a page. While there are usually multiple panels per page, it is possible for one entire page to be a single panel.</td>
</tr>
<tr>
<td>Gutter</td>
<td>The space between the panels.</td>
</tr>
<tr>
<td>Manga</td>
<td>The Japanese word for comics, cartoons, and graphic narratives.</td>
</tr>
<tr>
<td>Underground Comics</td>
<td>Non-mainstream, small press, or self-published comic books depicting content forbidden by the Comics Code Authority, such as sexuality, violence, and explicit drug use. Their height of popularity in the United States was from 1968-1975.</td>
</tr>
<tr>
<td>Word balloon</td>
<td>Speech bubbles containing an individual’s spoken words or thoughts.</td>
</tr>
</tbody>
</table>
Components of Educational Graphic Narratives

There are three interlocking components for the development of an educational graphic narrative (See Figure 1). They are: 1) Process – How graphic narratives are made, and how they evolved; 2) Content – The script/words/text used to tell the story; and 3) Visual Form – The illustrations/pictures/cartoons used to tell the story.

The first, process, is the thorough understanding of the nature and evolution of graphic novel medium, and its storytelling capabilities. Comprehending the historical aspects of how the graphic novel format evolved, who its foremost creators were/are, and, specific to educational graphic narratives/textbooks, which books were and were not successful is vital to understanding the medium. Only by developing a thorough historical foundation of graphic narratives, by understanding both the strengths and weaknesses of this art form, is it possible to hypothesize ways in which this medium can evolve into an engaging, multi-modal didactic device (textbook).

Content and visual form are both project specific. Content and visual form are interlocking components with process since a comprehensive knowledge of the historical aspects of how the graphic novel format evolved forms the foundational underpinnings for creating viable and engaging graphic narratives. In their simplest definitions, content and visual form represent the contributions of the writer(s) (content or story), and the illustrator(s) (visual form or artwork) respectively. When the content and visual form are under the purview of a single creator, these two individual storytelling elements coalesce
making it impossible to discern where content influenced the visual form or visa-versa.
The result is a complete organic synthesis of the two storytelling elements resulting in a
creative catalyzed construct (the graphic narrative).

However, as a film represents more than the contributions of just the screenwriter or just the director, many graphic novels are more than just the contributions of one or two individuals. When there is a division of labor and two or more individuals develop the writing and artwork, demarcations between these elements are more apparent. Yet it is both important and necessary to acknowledge that the synergy created by the interactive creative processes of multiple individuals more often than not results in a final product that exceeds the sum of its constituent parts. Each graphic narrative is limited only by the creativity, imagination, and facility of its storyteller(s).

Figure 1: Educational Graphic Narrative/Graphic Textbook Model
CHAPTER 1
INTRODUCTION

Overarching Research Questions

Two overarching research questions guide this dissertation. 1) What are the advantages of utilizing educational graphic narratives in teaching at the undergraduate level? 2) What standards can be established for successfully producing multi-modal, academically rigorous textbooks that utilize the sequential art or graphic narrative format?

Purpose Statement

As an educational tool, graphic narratives have the potential to speak to students on multiple levels, be it simply as a narrative, or, with the accompanying scholarship, a more fully-realized learning experience that is entertaining, engaging, and informative. The goal of this dissertation is to help create new ways of teaching for college instructors, and broaden the emerging educative possibilities for this growing medium by showing that educational graphic narratives can be used to inform undergraduate students in multiple disciplines.

In sum, this dissertation will examine and evaluate existing educational graphic narratives and determine their pedagogical strengths and weaknesses. Relatedly, the research will theorize the feasibility of graphic narratives as a viable learning format for
students at the undergraduate level. This dissertation will also theorize how migrating to a digital platform will assist graphic eTextbooks in becoming a more robust and engaging scaffolding tool for education.

Research Questions

In regards to the components of developing educational graphic novels and graphic textbooks, the following embedded research questions were employed to guide my investigation:

Embedded Research Questions

1) What is the nature and evolution of graphic narratives?
2) What are the intricacies of creating a graphic narrative?
3) What is the relationship between content and visual form in a graphic narrative?
4) What are the most effective ways in which graphic narratives can be adapted into a multi-modal educational tool?
5) How do graphic narratives interact with the reader (performativity/reader performance)?

Statement of the Problem

In the past decade, graphic narratives have grown in acceptance among college and university academicians as an educational medium (Goggin & Hassler-Forest, 2010, p. 3). Since the 1970s, the prevailing trend has been to utilize pre-existing graphic novels as part of a course’s literary reading list. The majority of these graphic novels were created as storytelling mediums in much the same way A Tale of Two Cities (1859), The
Adventures of Tom Sawyer (1876), or Fahrenheit 451 (1953) were. Neither these graphic novels nor the books mentioned were created expressly as textbooks. What this dissertation focuses on is how to develop new textbooks aimed specifically for use in undergraduate-level classrooms utilizing the sequential art/graphic narrative medium. This recent publishing trend is slowly developing, predominately in the area of the sciences, with the publication of graphic novel formatted textbooks such as Optical Allusions (2008) by Jay Hosler; Charles Darwin's On the Origin of Species: A Graphic Adaptation (2009) by Michael Keller and Nicole Rager Fuller; and Evolution: The Story of Life on Earth (2011) by Jay Hosler, Kevin Cannon, and Zander Cannon. In the September 23, 2011, issue of The Chronicle Review, evolutionary biologist and Emeritus Fellow of New College, Oxford, Richard Dawkins, author of the illustrated novel, The Magic of Reality: How We Know What’s Really True (2011) was credited as one of “a growing band of scientists and science writers who are making use of the comic-book format—one that can ‘give accurate information and make it exciting.’” Determining why these illustrated texts are gaining so much credibility as a teaching tool in the more structured, quantitative fields of math, science, and economics, yet not in the humanities, was of great interest to me. I believed from the onset of my work in answering my overarching research questions in this dissertation that a thorough understanding of why scientific graphic novels are so prevalent would aid me in the conceptualization, creation, and promotion of undergraduate-level educational graphic novels across the curriculum by developing a set of standards that could ensure the academic rigor of their content.
Significance of the Study

In Heidi Hammond’s book, *Graphic Novels and Multimodal Literacy: A Reader Response Study* (2009), she states in her *Review of the Literature* that there are few academic studies regarding educational graphic novels because they have such a short history (Hammond, 2009, p. 42). Currently there are very few educational graphic narratives/graphic textbooks available for teaching students at the undergraduate level. Considering the increased interest in biographical, autobiographical, and journalistic graphic narratives among college and university instructors the graphic textbook is an underutilized pedagogical tool.

While the quantity of educational graphic narratives/graphic textbooks for teaching undergraduate students is limited, and the academic rigor is, at times, questionable, these should not be seen as detriments, but rather as opportunities. As indicated in my purpose statement, the significance of this study, its true importance for education, is to set academic standards for the development of undergraduate-level educational graphic narratives/graphic textbooks. Since so few undergraduate-level educational graphic narratives/graphic textbooks currently exist it should be easier (theoretically) to convince publishers to adopt a series of academic standards that verify their scholarship if it means increasing their sales. Once academic standards are established for undergraduate-level educational graphic narratives, and adhered to, their credibility for use in the classroom should be the same as any other textbook.
Reasoning for the Study

In 2005, *TIME* magazine published literary critics’ Lev Grossman and Richard Lacayo’s list of “The 100 best English-language novels from 1923 to the present.”² There, among such luminaries as Faulkner, Hemmingway, Atwood, Updike, Woolf, Steinbeck, and Vonnegut, was Alan Moore and Dave Gibbon’s seminal graphic novel *Watchmen* (1986-1987). Set in an alternate reality, this non-linear narrative replete with recurring imagery, symbolic connotations, and intertextual links was the first post-modern superhero deconstructionist text to question whether or not the time for heroes was past. If we set aside the trappings of capes and cowls, we can appreciate *Watchmen* for what it really exemplifies: a validation of the graphic novel format as literature.

Over the past four decades the American graphic novel format (sequential art) has been used primarily as a vehicle for telling fictional superhero stories because, initially, they were simply comic books, but with a longer story. Etymologically speaking, there is no difference between referring to a lengthy sequentially illustrated story as a “long-format comic book,” or as a “graphic novel,” since they mean the same thing. One reason for calling a lengthy sequentially illustrated story a “graphic novel” is to denote that the story content was created for a more mature (adult) reader; however, the initial (and pervading) rationale for the “graphic novel” label was for marketing purposes, since it creates the illusion of respectability (Will Eisner, 2002). During the latter twentieth century, as comic book creators sought outlets for their own stories, apart from superheroes, a growing body of sequentially illustrated biographical, autobiographical, and journalistic texts began to develop. The art form evolved. Graphic novels such as *A Contract with God, and Other Tenement Stories* (1978) by Will Eisner; *Our Cancer Year*
(1994) by Harvey Pekar, Joyce Brabner, and Frank Stack; *Stuck Rubber Baby* (1995) by Howard Cruse; and *Fax From Sarajevo* (1998) by Joe Kubert, though all very different, all speak to the human condition realistically, while others such as *Maus: A Survivor’s Tale* (1986), which won a special Pulitzer Prize, explores disturbing historical events by utilizing anthropomorphized characters to maximize the emotional impact on the reader.

As a teaching/learning tool, the graphic novel medium is already being developed for use in a variety of educational settings such as art (*Understanding Comics*, 1993), science (*Optical Allusions*, 2008), and in literature (*Watchmen*, 1986–1987). Graphic novels are now accepted by many college and university academicians as part of their curriculum. West Point has placed the graphic novels *Enemy Ace: War Idyll* (1989) by George Pratt, and *Persepolis: The Story of a Childhood* (2004) by Marjane Satrapi, on their required reading lists. The National Association of Comics Art Educators (NACAE), as well as several colleges and universities, including The School of Education at The University of North Carolina at Chapel Hill, maintain websites containing K-12 lesson plans, study guides, syllabi, handouts, sample scripts, and resource links. In 2007, Penn State University conducted a panel discussion titled, “Graphic Novels: A Conversation,” while Fordham University hosted “Graphica in Education: Graphic Novels Come Out from Under the Desk,” the first academic conference promoting graphic novels for education. The keynote speaker at this landmark conference was Jon Scieszka, the National Ambassador for Young People’s Literature for the Library of Congress.

However, even given this growing level of acceptance by instructors, the educational possibilities of what can be achieved with this medium for undergraduate
students are only in the nascent stage. *Comics Alliance* editor, Laura Hudson wrote in the December 22, 2008, issue of *Publishers Weekly* an article titled, “Comics in the Classroom:”

Outside of the K–12 level, graphic novels and comics have also made their way into university classrooms, where they have been adopted as course texts in a variety of disciplines. “There’s a critical mass of [professors] who are pursuing this as a study, and they’re legitimizing the medium not only for their students but also for their departments,” says [Peter] Coogan [director of the Institute for Comics Studies,] adding, however, that many comics publishers doom their chances for course adoptions by their unwillingness to send free copies to professors.

Comics publishers could be actively trying to cultivate relationships with university English departments,” suggests Aaron Kashtan, a teaching assistant who researches comics theory at the University of Florida. “At my university, the English department regularly holds book fairs where textbook publishers like Penguin and McGraw-Hill market their materials to the department’s instructors. These publishers do this because for each instructor who decides to adopt a textbook, 20-some students will then have to buy that textbook. Comics publishers don’t seem to have come to a similar realization that university students represent an untapped source of income. (Hudson, 2008)

While publishers of traditional (non-educational) graphic novels are comfortably ensconced, one of the problems facing the expansion of educational graphic novels is that their publishers do not know how to sell their product to academic institutions. This dissertation will look for ways in which publishers can change that dynamic and successfully expand their market. By expanding the boundaries of what the graphic novel format can achieve, and increasing their marketability, it is the aim of this dissertation to encourage the development of additional graphic narratives specifically aimed for teaching at the undergraduate level.
Scope and Limitations

Primary Source Material (Educational Graphic Narratives/Graphic Textbooks)

This dissertation primarily focuses on educational graphic narratives and graphic textbooks designed specifically for undergraduate students. Interviews were conducted with educational graphic narrative and graphic textbook creators, publishers, and editors (See Appendix A: Structured Interview Script). Some of the questions asked in these interviews focused on determining what the strengths and the weaknesses are of the sequential art medium that is used in creating graphic novels, educational graphic narratives, and graphic textbooks. Additionally, questions were asked regarding the best way possible for creating a set of standards necessary for evaluating and authenticating the scholarship of the content of graduate textbooks for introductory undergraduate-level courses across the curriculum.

Secondary Source Material (Literary Graphic Narratives)

Secondarily, based on conversations with my interviewees and my own personal reading of online blogs, articles, and news features I selected and reviewed a core group of literary graphic narratives that are currently being used by college and university instructors as part of their curriculum. The core group of literary graphic narratives was limited to ten (10) books based on these recommendations and readings.
Exclusions

This dissertation did not include collections of superhero comic books used for pop culture studies, or educational graphic narratives specifically designed for K-12 students since the academic rigor of their content is questionable.

This Dissertation’s Relation to the Field of Art Education

To quote from my own Abstract, “In terms of their positionality within Art Education, graphic narratives are malleable constructs that speak to many aspects of our discipline such as: visual culture, social media, narratology, visual learning, literacy development, design thinking, and the development of imaginative problem-solving skills.” Graphic narratives are portable safe zones and are non-threatening because readers can disengage from them at any time. As an educational tool graphic narratives have been used to help people with autism learn social skills (Comic Strip Conversations, Carol Gray, 1994), and those suffering from brain damage create new neural pathways (I Had Brain Surgery, What’s Your Excuse?, Suzy Becker, 2004).

Educational graphic narratives/graphic textbooks promote learning in much the same way Art Education does. Both inspire students to work hard, think critically, develop their imaginations, and discover solutions to the problems they face. Both remove the veil from students’ eyes to the world beyond the classroom and challenge them to question the rules and theories they encounter and ask: “Why?” And both embrace differences, stimulate the brain, and encourage new ways of thinking. Though the stories may change, though the subject matter can vary greatly, the core philosophy of educational graphic narratives and graphic textbooks—their desire to reach students,
engage them creatively, and nurture them on a path of personal growth—is the same as that of Art Education. Educational graphic narratives and graphic textbooks are made by educators, writers, and artists who have a passion to teach. The relationship of these creators and the graphic narratives they make to the field of art education is at its heart, which is why this dissertation is so important.
CHAPTER 2
BACKGROUND TO THE STUDY

Introduction

This section contains a comprehensive review of the sequential art medium relating to the history of graphic novels, educational graphic novels, graphic textbooks, graphic eTextbooks, and prejudices towards that medium. Discussion begins with a detailed understanding of the origin of the term, *graphic novel*, and a thorough accounting of the foundational sequential art narratives (books) and their creators. This is followed by a comprehensive history and evolution of both American educational graphic novels and graphic textbooks, and Japanese *Manga* graphic textbooks. Because it is important in the next evolutionary step in their development, I have included a review of discussions currently taking place regarding the migration of physical graphic textbooks to digital platforms as graphic eTextbooks. Finally, and because it is important to the continued growth and acceptance of this art form, I have traced the history of prejudice towards the medium.
The Origin of the Term and the First Modern Day Graphic Novel

Before we can discuss what Graphic Textbooks are we need to understand their origin, which means we have to understand where the term “Graphic Novel” came from. Originally conceived as a term that would define longer works of sequentially illustrated stories containing mature themes, graphic novel has become an umbrella phrase, a marketing tool for almost any work told through the use of pictures. Simply put, the term graphic novel has devolved to mean any illustrated story. Yet, that really is too broad of a description to have any well-defined meaning.

If we conclude that a graphic novel must include text (words), then how do we categorize Shaun Tan’s (1974–) The Arrival (2006)? If we maintain that the artwork can only be sequential, then where do we place Jim Steranko’s (1938–) Chandler: Red Tide (1976)? If we insist that the story consists of only one narrative then what is Will Eisner’s (1917–2005) A Contract with God and Other Tenement Stories (1978)? And if we demand that a graphic novel must be exclusively original and not one that was initially serialized in a magazine, then should we not exclude Art Spiegelman’s (1948–) Pulitzer Prize-winning Maus: A Survivor’s Tale (1986 & 1991) from our list?

These questions exist because of our common need to categorize everything, because of the physical and financial limitations of printing and binding, and because of Library Science’s requirement to catalog books into an antiquated classification system. In truth, the academic discourse on graphic novels, which has been almost wholly literary, has been viewed from a skewed perspective.

Graphic novels were never literature’s bastard children, but that is how they have been—and are still—perceived in some academic circles. Comparable to film, graphic
novels are a visual medium and apart from literature in much the same way film is apart from literature. In truth, graphic novels have never been a form of literature, but they have always been an independent literate art form. To elucidate the dissimilarity, if one can convert a published work into an audio book by reading just the text, without losing any of the story’s nuances and meanings, then it is literature. This test holds true for works of prose, poetry, and plays, but not for graphic novels or film because so much of the story is conveyed visually.

This does not mean that graphic novels should no longer be read in literature or other classes because the needs of the lesson outweighs the format of the pedagogical vehicle; however, it does illustrate society’s persistent problem with accepting graphic novels because of this miss-association. Comic books became trapped in a format and vernacular that has biased the public’s perception since their inception. However, if we look at the “Storytelling Family Tree” we see that pictoglyphs, petroglyphs, oral tradition, literature, film, and graphic novels are all simply narrative vehicles growing out of the same trunk. Contemporary Graphic Narratives [comic books, graphic novels, comic strips, children’s picture books, certain forms of illustrated books such as Dinotopia (1992) by James Gurney (1958–)] grew apart from their cousins to form their own branch of the Storytelling Family Tree. Because of their visuality, the questions surrounding graphic novels should never have been: “Are they, or are they not literature?” The questions should have focused on “How can we cultivate the graphic novel format in order to tell better stories?” By asking these types of questions, by “troubling the binary” as it were, we acknowledge that graphic novels are a distinctive medium—a distinctive art form—set apart from both literature and film.
Unfortunately, removing graphic novels from the literary tradition is problematic because there is no viable way to adequately market them to academicians other than book review publications such as *Booklist, Publisher’s Weekly,* and *Library Journal* to name a few. Removing them from the literary tradition would also negate the literary awards they have already received and make them ineligible for future awards. Yet, there is already a double standard at work here. While graphic novels have been considered for literary awards, such as a Special Pulitzer Prize and the World Fantasy Award, there has never been a text-only book that was considered for any of the graphic novel honors such as the *Eisner Award* or the *Harvey Award.* It is, however, vitally important to separate graphic narratives from literature because the comparison stifles growth and creativity. By understanding that they are an art form independent from literature, graphic narratives no longer need to fit into the narrow confines of form and format that has been imposed upon them. It means that they can freely evolve as the creators envision them through a process of artistic growth.

Contrary to popular belief, Will Eisner’s *A Contract with God and Other Tenement Stories* was not the first time the term *graphic novel* was used, nor is it the first modern graphic novel. The first printed usage of the term appeared in Richard Kyle’s November 1964 newsletter published in *CAPA-ALPHA #2* (Fingeroth, 2008, p.3). Previous derivations on the theme such as “Picture Novel,” and “Picto-Fiction” appeared on paperbacks and magazines in the 1950s.¹ The first *Picture Novel,* and, arguably, America’s first graphic novel was *It Rhymes with Lust* (1950). The digest-sized, 128-page book was produced by St. John Publications (1947–1958), which was founded by Archer St. John (1904–1955). *It Rhymes With Lust* was written by Arnold Drake (1924–2007).

Baker was one of the medium’s first Black artists, and one of the forerunners of the “Good Girl Art” movement; working on titles such as *Phantom Lady*, and *Sheena, Queen of the Jungle*. Inspired by film noir, *It Rhymes With Lust* was a character-oriented romance/detective story. Though the story is typical of genre films of its time, *It Rhymes With Lust* also contained an underlying social commentary about greed, graft, and worker’s rights. St. John’s second graphic novel was *The Case of the Winking Buddha* (1950), by novelist Manning Lee Stokes (1911–1976) and illustrator Charles Raab. Unfortunately, both of these books failed financially, and the format was abandoned (D. Kitchen, personal communication, December 28, 2010 - March 13, 2012).

Though it may be considered a collection of short stories, *Harvey Kurtzman’s Jungle Book* (1959) is the prototype for the graphic anthology format. *Jungle Book* was written and illustrated by Harvey Kurtzman (1924–1993), who was the founding editor of *MAD* (1952) magazine. Kurtzman was a highly influential creative force in the comics industry, and helped shape much of America’s popular culture during the 1950s (Wright, 2003). *Jungle Book* was a commercial failure; however, it had a tremendous impact on the Underground Comics artists of the 1960s (D. Kitchen, personal communication, December 28, 2010 - March 13, 2012).

Another forgotten series of books from the mid-1960s, are the Ballantine Books paperback reprints of *Mad* magazine and the EC Comics line of early 1950s horror stories. Because paperbacks were not sold with comic books they did not come under the scrutiny of the Comics Code Authority and its restrictions. Among these titles were,
*Autumn People* (1965) with stories by Ray Bradbury (1920–2012) adapted by Albert “Al” B. Feldstein (1925–), *The Vault of Horror* (1965), *Tales From the Crypt* (1964), *Tales of The Incredible* (1965), and *Dracula* (1966). While the first four books contained reprinted comic book stories, *Dracula* was an all-new adaptation of “The great horror classic illustrated in comic book form!” (paperback cover text). Produced by Russ Jones (1942–), the text for *Dracula* was adapted by Otto Oscar Binder (1911–1974) and Greg Tennis (Nom de plume for Johnny Craig, 1926–2001), illustrated by Alden “Al” McWilliams (1916–1993), and containing an *Introduction* by Christopher Lee (1922–).

Another, similar volume, albeit printed by Pyramid Books, was *Christopher Lee’s Treasury of Terror: Great Picture Stories of Supernatural Horror* (1966).² As with *Dracula*, the Christopher Lee book was produced by Russ Jones, but was an anthology of stories selected by Lee, and adapted by various writers and artists. None of these books sold well enough to warrant subsequent volumes; however, *Dracula* was, historically, the third graphic novel (following *It Rhymes With Lust*, and *The Case of the Winking Buddha*) and the Christopher Lee book was the second anthology of original work following *Jungle Book*.

By the early 1970s, the term *graphic novel* was part of the comics creator’s vernacular; however, it was not used to describe America’s next attempt at a graphic novel, *Blackmark* (1971). *Blackmark* was conceived by Gil Kane (Nom de plume for Eli Katz 1926–2000), written by Archie Goodwin (1937–1998) and illustrated by Kane over uncredited pencil layouts drawn by Kurtzman (D. Kitchen, personal communication, December 28, 2010 - March 13, 2012). Published by Bantam Books, *Blackmark* was a 119-page science fiction/sword and sorcery heroic fantasy graphic novel printed in a
traditional paperback format. While conceived as the first in a sequence of ongoing graphic novels, sales of the first volume were poor, which led to the cancellation of the series.

The first self-referential use of the term *graphic novel* appeared on the January 1976 publication *Schlomo Raven*. Written by Byron Preiss (1953–2005) and illustrated by Tom Sutton (1937–2002), *Schlomo Raven* also contained an *Introduction* by Kurtzman. Printed in large bold, capital letters on the back cover of the digest-sized paperback were the words “—VOLUME ONE OF AMERICA’S FIRST ADULT GRAPHIC NOVEL REVUE!” *Schlomo Raven* was the first in Pyramid Books’ *Fiction Illustrated* series aimed at a more mature audience. The series also included: *Starfawn* (1976), by Byron Preiss and Stephen Fabian (1930–); *Chandler: Red Tide*, by Jim Steranko; and *Son of Sherlock Holmes: The Woman in Red* (1977) by Bryon Preiss and Ralph Reese (1950?—). Even though *Schlomo Raven* was published twenty-one months before *A Contract with God*, its place in graphic novel history has been largely overlooked along with the other *Fiction Illustrated* volumes. In their day, the odd format and sporadic paperback distribution made them curiosities among comic fandom buyers who did not appreciate change (J. Steranko, personal communication, July 7, 2010). When combined with the fact that none of these volumes has ever been reprinted (mainly due to legalities resulting from the death of Preiss), and that the stories, except for *Chandler*, are only of cursory interest, it is not surprising that they have been forgotten.

Other graphic novels soon followed, including: Robert Ervin Howard’s (1906–1936) *Bloodstar* (1976), adapted by illustrator Richard Corben (1940–); *Beyond Time and Again: A Graphic Novel* (1976), by George Metzger (1939–); *Sabre: Slow Fade of an

Figure 2: A Collection of Foundational Graphic Narratives

The critically acclaimed A Contract with God was the first modern graphic novel to deal exclusively with the human condition, and revolutionized the comics industry by becoming the first commercially successful one as well (D. Kitchen, personal communication, December 28, 2010 - March 13, 2012). While some detractors claim that A Contract with God is actually a collection of short stories, and not a novel per se, the use of multiple stories with an underlying connective theme is not without precedent, and is the basis for books such as Winesburg, Ohio (1919) by Sherwood Anderson (1876–
1941), and *The Wild Palms [If I Forget Thee, Jerusalem]* (1939) by William Faulkner (1897–1962). Its longevity and continued popularity speaks to its broad market appeal and timeless stories. Additionally, its semi-autobiographical approach established a standard by which all other slice-of-life graphic novels are compared. Even though Eisner did not invent the term *graphic novel*, its use on the cover of *A Contract with God* popularized it, and brought it into public forum (D. Kitchen, personal communication, December 28, 2010 - March 13, 2012).

Educational Graphic Novels and the Beginnings of Graphic Textbooks

Pictorial narratives are found rendered on the cave walls of Chauvet and Lascaux, France, scribed onto structures in ancient Egypt, carved into Trajan’s Column, illuminated into *The Book of Kells*, woven into the The Bayeux Tapestry, inlaid into the stained glass windows in the Cathedral of Our Lady of Chartres, and painted on the ceiling of the Sistine Chapel. Comic books, whether we wish to admit it or not, represent a natural progression of a visual storytelling tradition that has evolved over 40,000 years. The first printed short graphic narratives, ones that contain no more than a few dozen panels, appeared as early as the mid-Fifteenth Century in the form of religious propaganda (Kunzle, 1973, pp. 12-39). Other, short instructional graphic narratives described how a criminal was dismembered during an execution, or how to properly use instruments of torture in the Marshalsea Prison (Kunzle, 1973, 169, p. 194). Even though it is not sequentially illustrated, the *Kama Sutra* is really a visual instruction manual.

During World War II, Will Eisner utilized the sequential art concept for short graphic narratives in order to produce cartoons for *Army Motors* magazine. The cartoons
were designed to educate soldiers on how to properly maintain their equipment and weapons. In 1951, The Department of the Army launched $P*S$, *The Preventive Maintenance Monthly* magazine (Eisner, 2011). For twenty years Eisner acted as the artistic director for $P*S$, using sequential art as a teaching tool. $P*S$ is still in publication, and celebrated its 700th issue in March of 2011.

(1897) by Abraham "Bram" Stoker (1847–1912) do we really need? By limiting illustrated adaptations to only public domain authors, younger readers are not being exposed to some of literatures’ greatest books at an earlier age, and educational possibilities are being lost.

However, educational graphic narratives need not be restricted to maintenance manuals and novel adaptations. One of the earliest educational graphic narratives printed in the United States was a Japanese import. *Japan Inc., An Introduction to Japanese Economics* (1988), by Ishinomori Shōtarō (1938–1998), was a 313-page Manga comic book published by the University of California Press. *Japan Inc.* was originally published in 1986 by the *Nihon keizai shimbun*, the Japanese version of *The Wall Street Journal*. The book brought “complex issues, facts, and figures into focus by personalizing and dramatizing them.” While it is out of date, it does provide an entertaining and interesting historical look at Reagan-era politics and economics.

Two of the most accessible areas for developing educational graphic narratives are in the categories of biographies and historic non-fiction. One of the earliest creators of historic graphic narratives is Timothy Truman (1956–). Truman’s first two graphic novels, *Wilderness: Book 1: The Borderland* (1989), and *Wilderness: Book 2: Bloody Ground* (1991) concentrated on the eighteenth century American “renegade” Simon Girty. Truman followed these books with *Allan W. Eckert’s Tecumseh* (1992), an illustrated adaptation of Eckert’s outdoor drama. In 1995, the popular writer of historical fiction and non-fiction, Morgan Llywelyn (1937–) co-wrote *Ireland: A Graphic History* with Michael Scott (1959–). This book, which had limited distribution in the U.S., was illustrated by Eoin Coveney contained a *Foreword* by Will Eisner.

Joe Sacco has carved a very impressive niche for himself as a graphic journalist with his work on *Palestine* (2001) and *Safe Area Goražde: The War in Eastern Bosnia 1992–95* (2002). Sacco does what every good journalist is supposed to do—he puts a face on the story. In terms of reportage, *Fax From Sarajevo* by Joe Kubert (1926–), and *The 9/11 Report: A Graphic Adaptation* (2006), by Sid Jacobson (1929–) and Ernie Colón (1931–), are also of importance to the educator.

The historically-based graphic novel *From Hell* (1999), by writer Alan Moore and artist Eddie Campbell (1955–) is of special interest because of the amount of research that went into its production. It is a massive 572-page volume that contains a 42-page appendix annotating all of Moore’s research. Mixing fact, conspiracy theory, and
educated speculation, *From Hell* is an examination of the Jack the Ripper murders, and a critical commentary on Victorian England. Though some may argue with his findings, as all scholars do, Moore shows us that it is possible to teach *and* entertain at the same time.

Astonishingly, there are very few graphic narratives/textbooks about art or art history. Aside from Will Eisner’s and Scott McCloud’s books on sequential art, and a few publications about the lives of cartoonists, the rest of the art world is left fallow. For example, why are there no graphic narratives/textbooks about the history of fashion? Think of how visually stunning that could be! The single most surprising publisher of the best art-related graphic narratives is the Office of Cultural Development, Musée du Louvre—The Louvre Museum in Paris. To date, there are six books translated into English: *Glacial Period* (2007), by Nicolas de Crécy; *The Museum Vaults: Excerpts From the Journal of an Expert* (2007), by Marc-Antoine Mathieu; *On The Odd Hours* (2010), by Eric Liberge (1965–); *The Sky Over the Louvre* (2011) written by Jean-Claude Carrière (1931–) and illustrated by Bernard Yslaire; *Rohan at the Louvre* (2012) by Hirohiko Araki; and *An Enchantment* (2013) by Christian Durieux (1965–). Each of these books explores the Louvre museum from a different, sometimes fanciful aspect.

The Louvre’s fourth book, *The Sky Over the Louvre* is an important art historical work of fiction. Set in the tumultuous years of the French Revolution, *The Sky Over the Louvre* is the story of the beginnings of the Museum told through the lives of political theorists Maximilien François Marie Isidore de Robespierre (1758–1794), Jean-Paul Marat (1743–1793), and painter Jacques-Louis David (1748–1825). What is distinctive about this book is that the author, Carrière, is the former president of La Fémis, the French state film school, and is the screenwriter of many important films including:
Danton (1983), The Return of Martin Guerre (1982), The Unbearable Lightness of Being (1988), and Valmont (1989). With educational graphic narratives and textbooks there is a dearth of product and a wealth of opportunity.

Educational Graphic Textbooks for Undergraduates

For many years the graphic textbooks of Larry Gonick predominated the market. However, that has changed within the past five years with the publication of sequential art textbooks such as Optical Allusions (2008) by Jay Hosler; Charles Darwin's On the Origin of Species: A Graphic Adaptation (2009) by Michael Keller and Nicole Rager Fuller; and Evolution: The Story of Life on Earth (2011) by Jay Hosler, Kevin Cannon, and Zander Cannon. This trend towards academically-credible graphic textbooks, ones which are intellectually stimulating and contain levels of academic rigor necessary for teaching undergraduate students is slowly changing, predominately in the area of the
sciences. Admittedly, the research for new graphic textbooks is time consuming, so one has to wonder why certain books, such as *A Brief(er) History of Time* (1998, 2008) by Stephen William Hawking (1942–), has not yet been adapted into a sequential art format.

*The Magic of Reality: How We Know What’s Really True* (2011) written by evolutionary biologist Richard Dawkins (1941–), and illustrated by noted film director, graphic novelist, and cover artist for the popular *Sandman* comic book series, Dave McKean (1963–), while not sequentially illustrated, is impressive because of how it visually engages the reader. Due predominantly to Dawkins’ popularity this book has not gone unnoticed by book reviewers. The September 18, 2011, issue of *The Chronicle of Higher Education* cites Dawkins as one of “a growing band of scientists and science writers who are making use of the comic-book format—one that can ‘give accurate information and make it exciting’” (Monaghan, 2011). While this statement is true for *The Magic of Reality*, it also reflects why graphic textbooks work so well as a teaching tool—because they captivate students by making the mundane stimulating!

**Manga as Textbooks**

In September 2004, one of Japan’s leading manga authors, Takemiya Keiko, was approached by a medical university to write an educational manga depicting surgical procedures. Kyoto Seika University professor, Makino Keiichi explained, “Manga can exaggerate details in a way photographs can’t” (Asia Africa Intelligence Wire, 2004). Additionally, illustrations have another advantage over photography in that they can key in on a specific subject or event, simplify it, and delete any extraneous elements that would interfere in the clearness of the information they are conveying. Dr. Su Soon Peng,
associate professor of English in University of Malaya, believes that ‘The reader should not see the graphic form as a full and accurate version of the original text. A comic cannot capture the full essence of the original text’ (Asia Africa Intelligence Wire, 2004). While I will concede this point to a degree, only in that I feel it is nearly impossible to adequately adapt certain works graphically (Lord of the Rings, The Metamorphosis, etc.), I do not feel that it is possible for any author to adapt Art Spiegelman’s Maus strictly to text, and still “capture the full essence of the original.” So what do manga-style graphic textbooks do better than text-only books?

Dr. Eric Luczaj, a professor in Miami University’s Department of Computer & Information Technology uses Manga Guide to Databases (2009) as an optional text in his database class. According to Dr. Luczaj, while the book does not contain as much depth as a traditional textbook it is a good introduction to the subject. “It makes the material accessible to students by putting a difficult subject into a format that was not so academically dense. Not all students learn in the same way, and I like to have as many options available to them for learning the material” (E.Luczaj, personal communication, September 22, 2012). Not so coincidentally, Manga Guide to Databases is one of several manga textbooks the Virginia Department of Education's Training and Technical Assistance Center (T/TAC) at Virginia Commonwealth University recommends to its faculty (Pruett, 2009).

translations of a bestselling series in Japan, co-published with Ohmsha, Ltd., of Tokyo, a publisher of science and engineering books. All of the books are written by accredited authors, lending to the credibility of the content material. For example, Mana Takahashi, the author of *Manga Guide to Databases* is a graduate of the Tokyo University where she teaches Economics, and Dr. Masaharu Takemura, the author of *Manga Guide to Molecular Biology* has written several books on biology, and lectures on biology, molecular biology, and life sciences at the Tokyo University of Science (No Starch Website, 2012).

*Japan Inc., An Introduction to Japanese Economics* (1986), or *Nihon keizai nyumon* as it was titled in Japan, by Ishinomori Shōtarō (1938–1998) was the “trigger for the growth of educational manga for adult readers” (Murakami & Bryce, 2009). In “Manga as an Educational Medium” Satsuki Murakami and Mio Bryce, both from Macquarie University, NSW, Australia, believe that it is manga’s (sequential art’s) hybridity of the visual and linguistic that makes this art form such a powerful learning tool. The following is Murakami’s and Bryce’s interpretation of the strengths of graphic narratives for education, which supports many of my own theories.

Many scholars have shown that hybrid texts of the verbal and the visual help readers’ efficient understanding and learning. For example, using Dual Coding Theory, Paivio (1986) explains that our cognitive system consists of two parts, the verbal system and the non-verbal systems, which are processed through different channels. When images or figures match the verbal input, they are encoded by both the verbal and non-verbal systems, thus promoting memory more strongly than in the case of verbal or visual input alone. Anderson and Bower (1973) likewise state that memory of verbal information is enhanced when relevant visual images are provided. Larkin and Simon (1987) also emphasize that the ability to process information is enhanced when text is augmented with pictures. McCrudden, Schraw, Lehman & Poliquin (2007) further showed that the underlying cause-and-effect in sentences are understood more
easily when there are visual clues of the cause-and-effect. Moreno and Mayer (1999) also demonstrate that multimedia is effective for learning.

William Spencer Armour refers to the use of manga for educational texts as “The Rise of ‘Soft Power Pedagogy’” (Armour, 2011, 127). Armour asserts that there are multiple ways of knowing, and that there is validity and value in different approaches. Armour also believes that integrating different approaches “results in a more complete understanding of complex issues” (Armour, 2011, p. 128). In “The Graphic Novel: a ‘Cool’ Format for Communicating to Generation Y,” Jeremy C. Short and Terrie C. Reeves feel that the “dense, pompous, and largely impenetrable writing” of business negatively impacts learning, and that the “graphic novel format would allow our field to keep pace with other disciplines while incorporating a more accessible format and has the potential to influence society while simultaneously utilizing a more engaging medium appropriate for today’s generation of business students” (Short & Reeves, 2009, p. 428). Essentially, all of this is identical to the conclusions drawn earlier by Dr. Luczaj. Much has been said regarding the benefits of, and need for developing a combined visual/verbal art form in helping students learn.

Charles Wirgman, and How Manga Evolved in Japan

Those who know the history of Manga have heard the name, Charles Wirgman (1832–1891) before. Wirgman was a graphic journalist/news correspondent for *The Illustrated London News*. Wirgman arrived in Yokohama in 1861, just two years after it opened as Japan’s first international port of commerce, and lived there the rest of his life. In 1862, Wirgman began publishing his monthly illustrated humor publication, *The
Japan Punch, which satirized the Europeans living in the protected Kannai ("inside the barrier") district of the city. Unfortunately, that is the extent of what most people know about Wirgman. However, how Wirgman arrived in Yokohama, and how European visual social parody became such a huge influence on Japanese culture is an amazing journey that began thirty years earlier in France.

Subversive Imagery and the “Liberty of the Crayon”

Following The French Revolution of 1830, freedom of the press was restricted, and political caricatures were deemed more seditious than words because of their visceral nature and broad appeal. It was perceived that the illiterate populace, referred to as the “dark masses,” was “highly susceptible to subversive imagery” (Goldstein, 1998, p. 785). Surprisingly, illustrations were not subject to pre-publication censorship restrictions the same way text articles were, but post-publication prosecutions were profuse. From 1831–1835, there were 736 prosecutions brought against the press, yet over 60% of these ended in acquittals” (Goldstein, 1998, p. 789).

La Silhouette (1829–1831) was one of the publications targeted by the monarchy. La Silhouette was the first French publication to give text and illustrations equal importance. It was the prototype for political satire publications, and was co-founded by French caricaturist, Charles Philipon (1800–1861). Originally intended to be politically moderate, La Silhouette became increasingly liberal, and in the 1 April 1830 issue Philipon furtively inserted an unsigned caricature of Charles X of France dressed as a Jesuit. The image caused a scandal due to the strict government censorship laws that prevented the publishing of caricatures of politicians. The paper’s manager Benjamin-
Louis Bellet (not Philipon) was sentenced to six months in prison and fined 1,000 francs. *La Silhouette* was financially crippled, but before he was fired, Philipon began a second political satire newspaper, *La Caricature* (1830–1835)⁵ (Goldstein, 1998, p. 789).

Censorship of the press grew more intense, and so too did the punishments. In its early years *La Caricature* was seized close to thirty times post-publication for its caricatures, which resulted in ten prosecutions. French historian, Paul Thureau-Dangin (1837–1913) believed that Philipon was “one of the most dangerous adversaries for [King Louis-Philippe]” (Goldstein. 2000, p. 143). For his cartoon depicting the king plastering over the promises of 1830, Philipon was sentenced to six months in prison and fined 2,000 francs (Goldstein, 1998, p. 790). At his hearing Philipon stated that his drawing was symbolic and that since the royal insignia was not present in the illustration, the figure was not actually the king. Furthermore, arguing that the court had no control over the “liberty of the crayon,” Philipon drew his infamous, four panel sequence, *Les Poires* (*The Pears*), transforming the face of Louis-Philippe into a pear. Philipon asked the court if the resemblance between the king and the pear meant that artists could no longer draw the fruit (Childs, 1992, p. 51)? While the exercise did not help his case, the iconic *Les Poires*, which was also French slang for “simpleton,” became a derogatory icon among political caricaturists for Louis–Philippe’s July Monarchy.

There is one aspect of the Louis-Philippe 4-part sequence that, as far as I know, has never been broached. Beginning in 1827, Swiss schoolmaster, Rodolphe Töpffer (1799–1846) began creating sequential narratives or “picture stories” that he shared with his friends and students. Töpffer has long been considered the *Father of the Comic Strip* with the publication of his first album, *Histoire de Monsour Jabot* in May 1833.⁶
However, Charles Philipon’s 4-panel *Les Poires* (redrawn by Daumier) appeared in *La Caricature* a year-and-a-half earlier on 24 November 1831. Though it was never intended to be a new art form, *Les Poires* is actually the world’s first published sequential newspaper comic narrative; technically making Philipon the “Father of the Comic Strip.”

![Les Poires](image)

*Figure 4: “Les Poires” from *La Caricature*, 24 November 1831.*
*Design by Charles Philipon. Art by Honoré Daumier.*

Philipon, along with other non-violent criminals, was placed in the "Pavilion of Princes" section of the Sainte-Pélagie prison in Paris. In this bizarre judicial form of incarceration, Philipon not only edited *La Caricature*, but also continued producing political cartoons from his prison cell. It was not uncommon for journalists to reserve their favorite cells ahead of time, or to be taken to court from jail to answer censorship charges for articles written while in prison. Other than being besieged by fellow inmates to draw their portraits, Philipon weathered his “captivity” well. It was while he was
imprisoned that Philipon, with the help of one of his most prominent artists, Honoré Daumier (1808–1879), (who was at the time confined for his caricature, *Gargantua*) conceived of his next publishing venture (Goldstein, 1998, 794; Spencer, 1956, p. 26).

Philipon, along with his brother–in–law Gabriel Aubert, created a third illustrated newspaper, *Le Charivari* (meaning *Hullabaloo* in English, 1832–1937). The publication dealt primarily with social commentary, thereby evading many of the censorship problems that plagued *La Silhouette* and *La Caricature*.

Philipon was following in the tradition of pictorial satirist and social critic, William Hogarth (1697–1764), and his publications had a tremendous impact on nineteenth century illustration and painting. Other French artists who began their impressive careers with Philipon included J. J. Grandville, Paul Gavarni, Achille Jacques-Jean-Marie Devéria, André Gill, Henri Monnier, Charles J. Traviés, Alexandre-Gabriel Decamps, and Paul Gustave Doré, who lived with Philipon after he moved to Paris at the age of fifteen.7

In 1832, Philipon undoubtedly knew that censorship laws would become increasingly more constrictive, and they did. By focusing on social commentary, he had hoped to not only avoid further fines and incarcerations (which, unfortunately, did not happen), but also speak to a broader readership (which, thankfully, did happen). Since *Le Charivari* was not politically driven, it did not polarize potential subscribers against it. This type of broad market appeal would become the basis for not only the Illustrated Press, but modern news reporting as well.

The influence of Philipon’s publications reached beyond the borders of France. In England, journalist and co-editor Henry Mayhew, co-editor Mark Lemon, printer Joseph

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7 This is a reference to Paul Gustave Doré.
William Last, and wood-engraver Ebenezer Landells (who apprenticed under Thomas Bewick, the man who redefined wood engraving for the nineteenth century) created their own illustrated review of social eccentricities titled, *Punch* (1841–1992; 1996–2002). Mayhew, an avid reader of *Le Charivari*, conceived of *Punch* while he was living in Paris, avoiding his creditors back in England. It was decided that *Punch* would take a “comedy of manners” approach to humor, abandoning Regency caricatures altogether, and focus wholly on the foibles of the upper class. As an acknowledgment to its source, and probably conceived as a marketing strategy as well, *Punch* was subtitled, *The London Charivari*.

In the wake of the Fieschi Plot, designed to assassinate King Louis-Philippe, censorship of the press reached its apex, and freedom of the press was, essentially, eliminated in France until 1881. Many political caricaturists turned their skills to social commentary to avoid prison. Daumier, one of the leading satirists of his time, abandoned political parody entirely and focused on caricatures of Parisians. This abrupt shift away from overt political satire towards a more subtle critique of French society brought about a close examination of bourgeois life that surfaced in the Realist movement that emerged during the mid-nineteenth century. It was in this climate of oppression that the weekly French newspaper, *L’Illustration* was born just one year after the stunning success of *The Illustrated London News* in 1842.

**Charles Wirgman and *The Japan Punch***

In 1862, illustrator and humorist, Charles Wirgman published his first issue of *The Japan Punch*, eventually producing 220 issues during its twenty-five-year run
Wirgman had lived in Paris in the early 1850s, and his cartoons share a stylistic resemblance to some of *L’Illustration’s* leading cartoonists/social satirists such as: “Cham,” “Marcelin,” “Stop,” “Randon,” and Töpffer. Wirgman was a freelance correspondent for *L’Illustration* and a staff artist for *The Illustrated London News*. In 1857, after the death of *The Illustrated London News*’ correspondent Arthur V. Johns, Esq. H.C.S., Wirgman was sent to China to cover the Second Opium War. Following the war the multi-lingual Wirgman went to Yokohama where he not only acted as a mediator and translator between Europeans and Japanese, but also played a vital role as a mentor and teacher of Western-style oil painting to Japanese artists. Yet Wirgman’s most notable contribution to the world of illustration was *The Japan Punch*.

Based on the original British magazine, *Punch*, Wirgman’s *The Japan Punch* was a humorous, satiric periodical intent on lampooning the politics and society of Yokohama. Although it was intended for Western audiences, *The Japan Punch* made its way into the hands of Euro-curious Japanese for whom political satire became another cultural import. The Japanese loanword, *ponchi-e* (meaning *Punch pictures, or satirical sketches*) is directly attributed to *The Japan Punch* and became that language’s first loan-word for cartoon (Duus, 2001, p. 996). Publication of intellectually stimulating and funny drawings with underlying, sometimes hidden, meanings became so popular that it spawned several Japanese versions including: *Eshibun Nipponchi* (1874, three issues) by Kanagaki Robun (pseudonym) and Kawanabe Kyosai; *Kisho Shimbun* (1875) by Hashizume Kinzo and Tsukioka Yoshitoshi; *Marumaru Chinbun* (1877–1882) by Nomura Fumio; and Garakuta-chinpō (1879) (Meech-Pekarik, 1986; Schodt, 1996).
By the 1890s, the word, *ponchi-e* took on derogatory connotations, and was replaced by the word, *Manga* (Gravett, 2005, p. 21). Wirgman was a valuable observer to the opening of Japan to the Western world during the late-nineteenth century Meiji Restoration, and spent three decades chronicling in print the political and social evolution of that country. Through the influence of *The Japan Punch*, Wirgman became one of the fore-fathers of the hugely popular Japanese graphic narrative format called Manga. What began as a discussion in a French prison in 1832 between two artists developed into a Japanese art form that has become a multi-billion dollar international phenomenon.

The Exporting and Importing of Visual Culture

*Le Charivari* created a paradigm shift in publishing that changed the direction of graphic storytelling, and created a cascade effect whose impact resonated internationally. *Punch* came to America by way of the many tourists and (especially) artists who traveled to Europe in the latter part of the nineteenth century. One such artist, Robert Henri (aka Robert Henry Cozad 1865–1929), shared them with *The Philadelphia Four* (William Glackens, George Luks, Everett Shinn, and John French Sloan), all of whom would go on to form the core of the Ashcan School, or, to use the less deprecating title, the Urban Realists.

Several of the Urban Realists taught at The Art Students League in New York, and it is not surprising that their style of socio-cultural representational art came to influence Norman Rockwell (1894–1978), and many other twentieth century artists who studied there. For American visual satirists, *Punch* was also the forerunner of Harvey Kurtzman’s (1924–1993) incredibly popular and widely influential *Mad* magazine.
Comic books and graphic novels are part of a rich visual culture history that ties back to Hogarth, *Le Charivari*, and *Punch*.

**Graphic eTextbooks and the “Infinite Canvas”**

In this dissertation, *graphic textbooks* is used as an all-inclusive term that includes both physical and digital formats. However, the term *graphic eTextbooks* refers exclusively to *digital* versions of these books. Since the majority of undergraduate textbooks are moving to digital platforms within five years it is unproductive to speculate on designing new paper-and-binding tomes. Therefore, the focus of my theorizing in regards to the content of these books will primarily focus on digital designs.

The first comic books adapted to the web appeared in situ. This is what Scott McCloud refers to as “a classic McLuhan-esque mistake of appropriating the shape of the previous technology as the content of the new technology” (McCloud, 2009). This is a reference to Canadian educator and communication theorist, Herbert Marshall McLuhan (1911–1980). McLuhan predicted the *World Wide Web* thirty years before its inception, and claimed that “the medium is the massage” (Levinson, 1999, pp. 35-43). Currently, digital representations of comic books and graphic novels on the Internet are based on the needs of the physical medium and not the needs of the content. Comic book publishers need to have one foot in both “camps” for fear of losing traditional readers. The main problem with undergraduate graphic eTextbooks lies not in the medium, but in the academic rigor of the content. What has been forgotten by most publishers of graphic textbooks is that they are not graphic novels, and they do not share the same objectives. Whereas graphic novels seek to entertain, graphic textbooks primary objective is to teach.
If we want to use graphic textbooks to teach undergraduate students then they need to conform to the same review process and academic rigor as any other undergraduate-level textbooks.

Though still narratives, graphic textbooks are not story-driven, per se, they are information-driven. With any textbook there is a beginning point and an ending point, and in between are chapters incrementally building on what was established previously. What textbooks do not (normally) have are story-arcs, character-arcs, climaxes, or dramatic dénouements. What graphic textbooks do differently than story-driven comic books and graphic novels is how they engage the reader. Many educational graphic textbooks contain a narrator either in the form of disembodied caption boxes (similar to a documentary film), or as a drawn character(s) that breaks down the fourth wall to address the reader directly. In theater, the fourth wall is the space between the stage and the audience; for graphic narratives it is the space between the picture plane (either paper, or view screen) and the reader. The narrator, or “Chorus,” is a dramatic vehicle dating back to Greek theater, and has appeared in Shakespeare’s plays, television, and film. Some authors, such as McCloud, use themselves as the narrator while others, like Jay Hosler in *Evolution: The Story of Life on Earth*, uses multiple characters who talk to each other in order to inform the reader.

The problem with transportability from static physical format to digital is that comic books and graphic novels need to fit within the viewing dimensions of an iPad, Kindle, Nook, or some other form of visual display device. This works fairly well for individual 3-tier pages even though the screen image is smaller than its physical counterpart. But while the traditional 32-page, 3-tier, 9-panel grid format has been the
norm for print comic books since their inception it does not have to continue to be the dominant format moving into the post-print era—nor should it. The dimensions of the majority of digital comic books and graphic novels conform to their print counterparts. Politics, censorship, distribution networks, functionality, economics, and the basic limitations of print media have always controlled format, which in turn have dictated how stories are told and hampered creative growth, but that is not the case for the Infinite Canvas.

The Infinite Canvas was proposed by McCloud as a way of viewing sequential art via a monitor (McCloud, 2000, p. 200). For McCloud, the computer screen is not a snapshot of a single visual, but rather a window into the infinite that stretches out multidimensionally along the XYZ axis. This means that a linear story that scrolls through a long horizontal continues, uninterrupted, as it moves across the monitor screen towards its conclusion (or vertically as with a pdf). It also means that non-traditional storytelling techniques, such as true parallel narratives, or circular narratives can now be truly parallel or circular within the digital world. However, McCloud draws the line at introducing temporal phenomena such as embedded videos, hyperlinks, sound, animatronics, and the like, since they interrupt the continuity of presentation, because, in sequential art, space equals time, and that time is regulated by the viewer (McCloud, 2009). While McCloud’s personal belief may be true for graphic novels (and I emphasize the word “may” because such hard and fast “rules” stifle creative growth), such a statement is completely erroneous when it comes to graphic textbooks.

It is the hybridity of graphic narratives combined with the power of the Internet where I believe the true strength of graphic eTextbooks comes forth for two important
reasons. First, the inclusion of temporal phenomena is no different from including sidebars or endnotes in a physical textbook. They exist spatially in time yet apart from the linear narrative, and when, or if, they are accessed by the reader that act is entirely within the reader’s control. Second, which for me is the most significant aspect of the potential for all eTextbooks, because the introduction of those tangential elements reflect the way lessons are taught in a classroom.

Rather than present lessons on an uninterrupted continuum (because it is boring), teachers often include temporal phenomena to supplement their lessons. On any given day, whether I am teaching Photoshop techniques or a lesson on visual culture, I will search for images, go to websites, watch videos, access a pdf, play a PowerPoint presentation, or simply look up information. These tangential elements are integrated into lessons to help students process information by engaging multiple senses thus increasing learning efficiency. Secondarily, by watching what I do via the SMART Board my students witness my problem-solving skills, and understand how I deductively solve a problem using the Internet, yet even these things can be integrated into the narrative of a graphic eTextbook via the “Chorus.”

With graphic eTextbooks the reader does control time spent with the temporal event by watching it multiple times, or skipping through it, or replaying certain segments, or not watching in it at all. While for some this may be antithetical to the continuity of traditional graphic narratives, the inclusion of temporal phenomena works perfectly with graphic eTextbooks through a form of expanded continuity (Author’s term). For graphic eTextbooks, this is what McCloud refers to as A Durable Mutation, or rather a mutation.
from the physical sequential art medium into digital that has “some sort of staying power” (McCloud, 2009). This form of Durable Mutation for graphic eTextbooks is actually no different from what many eTextbooks are already doing.

For purposes of making an analogy, if we borrow terms from biology’s taxonomic hierarchy, we might consider the family tree for comic strips, comic books/graphic novels, and graphic textbooks in this way. All three of these forms are of the same genus, graphic narratives, but all three are of a different species. Graphic novels and graphic textbooks are part of the same family tree, but evolving on different branches of it. Those differences, those tangential elements, those temporal phenomena that are antithetical to graphic novels because they interrupt the continuity of presentation, are part and parcel of teaching, and should be embodied in graphic eTextbooks. These differences that lend themselves so beautifully to how teachers teach are graphic eTextbooks’ Durable
Mutation. The move to a digital platform will aid graphic textbooks in creating a virtual learning environment where they can evolve into a more robust educational tool.

The Origins of Prejudice Towards Illustration

To combat prejudice towards graphic narratives we must first know where it came from. The prejudice towards comic books began with a prejudice towards illustration, and that began with a prejudice towards women.

The Commodification of Poetry

Public elitist prejudice towards illustration began with Charles Lamb (1775–1834). Lamb was a well–known English essayist, poet, dramatist, novelist, and critic who counted among his friends and contemporaries, Samuel Taylor Coleridge (1772–1834) and William Wordsworth (1770–1850) (Cengage, 2002). In his sonnet, “To Samuel Rogers, Esq., on the new Edition of his ‘Pleasures of Memory’” (The Times, December 13, 1833), Lamb vehemently opposed the inclusion of illustrations in the book (Lamb, 1904).

When thy gay book hath paid its proud devoirs,
Poetic friend, and fed with luxury
The eye of pampered aristocracy
In flittering drawing–rooms and gilt boudoirs,
O'erlaid with comments of pictorial art
However rich or rare, yet nothing leaving
Of healthful action to the soul–conceiving
Of the true reader yet a nobler part
Awaits thy work, already classic styled.
Cheap–clad, accessible, in homeliest show
The modest beauty thro’ the land shall go
From year to year, and render life more mild;
Refinement to the poor man’s hearth shall give
And in the moral heart of England live.

Lamb lambasts Rogers’ illustrated edition as being decadent, ostentatious, and abhorrent to the “true reader.” However, Lamb regards the earlier, “Cheap-clad” edition as being morally superior because it is “modest.” Lamb’s outrage at the extravagant inclusion of pictorial art in books it appears comes out of the Puritanical rhetoric of his day (Woods, 1950, p. 172). This yearning for a simpler, idealized existence was an essential element of the Romantic Movement, whose literary origins in Britain began with the publication of Wordsworth and Coleridge’s *Lyrical Ballads, with a Few Other Poems* in 1798. Lamb sent Rogers a conciliatory letter, claiming that his objection to the book was due to his prejudice against illustration. Lamb felt that the “sister arts” (i.e., the “feminine arts”) should never be intertwined, and that literary works, such as Shakespeare’s *Romeo and Juliet*, should never be acted out, or illustrated, because the concretized visuals that ensued represented a corruption of the imagination, since they tied the daughter of the house of Capulet down to the “authentic face of Juliet” (Woods, 1950, p. 172).

The “Cheap-clad” edition of *The Pleasures of Memory* was originally published in 1792, and sold 30,000 copies, establishing Rogers’ popularity (Cengage, 1999). Yet, Rogers’ skill as a poet never rose to the level of his peers. In comparison to other poets such as Lamb, Coleridge, and Wordsworth, Rogers’ popularity waned so dramatically in the first quarter of the Nineteenth Century that his 1828 edition of *Italy* was a publishing failure. Nevertheless, Rogers, who was independently wealthy, expanded the work, commissioned illustrations from J. M. W. (Joseph Mallord William) Turner (1775–1851),
Thomas Stothard (1755–1834), and Samuel Prout (1783–1852), and remarketed the lavishly illustrated edition of *Italy* two years later to “wild” success (Cengage, 1999). Based on this strategic business model, Rogers commissioned Turner and Stothard to create illustrations for a new edition of *The Pleasures of Memory*. Essentially, Rogers used the illustrations to fool “The eye of pampered aristocracy” into believing that his boorish text was worthy of the art that embellished it.

Since Rogers’ was a minor poet of vanity publications the idea that he was financially capable of commodifying his books to the point of spectacle, and profiting from that, must have galled Lamb, who grew up poor and worked for a living (Cengage, 2002). Lamb was a talented “egotist,” who was described as “nervous, easily excitable, and emotional” (Mair, 1944, pp. 156–157). While on the surface Lamb’s apology appears sincere and is cloaked in his Romantic aesthetic, it can also be read as a passive-aggressive rationalization conveniently masking his true feelings towards Rogers’ marketing tactic. Had the illustrations in *The Pleasures of Memory* been inferior, the thought that Lamb harbored a hidden agenda towards Rogers could never be considered, but Turner and Stothard were two of the best artists of their time, and their illustrations, “However rich [and] rare,” were (and are still) collectable in and of themselves.

Both Turner and Stothard attended The Royal Academy of Arts in London, and both have paintings hanging in The National Gallery (The recent exhibit, *Turner Inspired: In the Light of Claude*, ran from 14 March – 5 June 2012). Though he mainly worked as a painter, Turner contributed illustrations to such books as *Scott's Poetical Works* (12 volumes, 1833), *The Southern Coast of England* (1849), and the aforementioned *Italy*, all of which still command prices in the hundreds of dollars in the
collector’s market. Turner was one of the most highly respected artists of his time, and
The Turner Prize, an annual award organized by the Tate gallery and presented to a
British visual artist under the age of 50, is named after him. Turner’s paintings became a
seminal influence on the Impressionists, especially Claude Monet (1840–1926), who
carefully adopted his techniques some 30-40 years later. One only has to look at Monet’s
Impression, Sunrise (Impression, soleil levant, 1872) and compare it to Turner’s
Chichester Canal (1828), or The Fighting Temeraire Tugged to Her Last Berth to Be
Broken up (1838) to see the enormously apparent influence.

Stothard was a prolific illustrator contributing to special editions of The Pilgrim's
Progress (1788), The Life and Adventures of Robinson Crusoe, (2 volumes, 1790), Vicar of Wakefield (1792), and The Rape of the Lock (1798). Of his art it was written, “…into even the slightest and most trivial sketches he infused a grace and distinction which render them of value to the collectors of the present time.” (1911 Edition of the Encyclopedia Britannica) Stothard’s illustrated books are still highly collectable, and even the later, 1820 edition of Robinson Crusoe commands prices beginning at $2,255.00.13

It is not inconceivable that Lamb would object to the value–added aspects associated with the commodification of poetry. If Lamb had not known Rogers and if Rogers had not been a wealthy, influential, generous patron of poets, perhaps Lamb’s critique of The Pleasures of Memory might have placed the blame for its failings where it belonged: on the author and not the artists. While there was, undeniably, a Romantic sensibility at work here, it was actually Lamb’s misdirected lack of honesty and selfish sense of social preservation that began the elitist prejudice against illustration.

Verbal vs. Visual: “The Frivolity of the Times”

In 1844, eleven years after Lamb’s letter, The Quarterly Review posthumously published an article by former editor, John Murray (1778–1843) simply titled, “Illustrated Books.” Curiously, the article championed the work of Stothard and Turner, the two artists Lamb disliked, but found fault with the majority of the artists of the time and their facility to properly illustrate the text (Murray, 1844, pp. 191-192). The critique is understandable considering the growing demand for illustrations quickly outgrew the talent pool of skilled artists and engravers. Murray believed that illustrations best served
travel and history books because “in the case of accurate views of authentic portraits, the
pictured representation conveys to the mind a more clear and accurate knowledge than
any verbal description could by any possibility communicate—when a single glance of
the eye will at once impress on the mind the accurate idea of form which is impossible
for a blind person to obtain” (Murray, 1844, p. 193). This concession, regarding the
capability of illustration to both “illuminate” the text and convey information through the
use of graphic visuals, unfortunately gets lost in Murray’s essay. While he mentions the
positive natural consequences ensuing from the publication of illustrated books such as
an increase in demand, a greater supply, a lower per copy cost, and an increase in jobs,
Murray predominantly dwells on the negative aspects of their popularity (Murray, 1844,
p. 191-192).

Murray decried “the rage for ornamented, or as they are now termed, ‘Illustrated’
or ‘Pictorial’ editions of books,” and referenced Christian Edward who, twenty-six years
earlier, commented that decorated books were nothing more than a “superfluous and
meretricious” exemplar of “the frivolity of the times” (Murray, 1844, p. 168). Murray’s
main complaint was that the pictorial arts, which were once included in books as visual
aids, “now bid to supersede much of descriptive writing,” and that the text of many books
had become subordinate to “their so-called illustrations” (Murray, 1844, p. 171). For
Murray, illustrated books and magazines were “low utilitarian” because they sought to
impart “the greatest possible amount of knowledge at the least possible expense of time,
trouble, money, and, we may add, of intellect” (Murray, 1844, p. 171).

To support his case against illustrated books, Murray quoted Horace: “Segnius
irritant animos demissa per aurem, Quam quæsunt oculis subjecta fidelibus, et quæ Ipse
sibi tradit spectator” (Horace’s *Ars Poetica*, II, pp. 180-182), which means, “Less vividly is the mind stirred by what finds entrance through the ears than by what is brought before the trusty eyes, and what the spectator can see for himself” (Boulton, 2007, p. 174). On the surface, it is an insignificant quote in which Horace is actually referring to a stage performance and not the graphic visual arts; however, it appears to have been deliberately left incomplete for the masses. Horace’s entire passage, which would have been known to the higher-educated, concludes with, “Quodcunque ostendis mihi sic, incredulus odi.” (Horace, *Ars Poetica*, II, p. 188), or “Whatever you thus show me, I discredit and abhor” (Boulton, 2007, p. 174). The inclusion of Horace’s quote appears to be nothing short of a craftily hidden declaration of war on illustration by elitists.

To Murray, illustrated books represented a “superficial knowledge” that pervaded not just the country, but the whole world. Illustrations in books, newspapers and magazines were becoming more powerful, more seductive—more popular—than the written word. Murray unhesitatingly balked at the idea that these “Gems of Art,” which was the “artistic slang of the day,” were now labeling books with the words “with illustrations designed by,” and “engraved by” in their advertising, as if to indicate that the crayon and burin of the artists were quickly becoming mightier than the quill of the writer (Murray, 1844, p. 190). Yet, rather than call upon writers and poets to rise to the challenge by creating works equal to or better than the art that accompanied their texts, Murray took the indolent, underhanded approach by chastising illustrated books as a “partial return to baby literature—to a second childhood of learning”, thus beginning the “juvenile” pejorative that has stigmatized illustration for centuries (Murray, 1844, p. 171).
It is Nothing More than Masculine vs. Feminine

A year after *The Quarterly Review* article saw print, William Wordsworth seized upon Murray’s “call to war” and published his sonnet, “Illustrated Books and Newspapers.”

Discourse was deemed Man's noblest attribute,
And written words the glory of his hand;
Then followed Printing with enlarged command
For thought—dominion vast and absolute
For spreading truth, and making love expand.
Now prose and verse sunk into disrepute
Must lacquey a dumb Art that best can suit
The taste of this once-intellectual Land.
A backward movement surely have we here,
From manhood, —back to childhood; for the age—
Back towards caverned life's first rude career.
Avaunt this vile abuse of pictured page!
Must eyes be all in all, the tongue and ear
Nothing? Heaven keep us from a lower stage!

In his sonnet, Wordsworth bemoans the written word’s fall from grace (“sunk into disrepute”) to become the servant (“lacquey”/lackey) of the mindless public’s increased “taste” for illustration (“dumb” meaning both silent and inane). He not only reiterates Murray’s “juvenile” pejorative (“back to childhood”), but claims that the popularity of illustrations is a degenerative return to a time when cavemen painted on walls (“caverned life’s first rude career.”). Wordsworth seeks to further debase illustration by associating it with the “lower stage,” which exposes his fear of feminine subversion on the “masculine” art of writing.

According to Lorraine Janzen Kooistra, “illustration theory in the nineteenth century assumed a hierarchical model for image/text relations based on a sexual
paradigm” (Kooistra, 2007, p. 396). Furthermore, the “superior” verbal arts were considered masculine, powerful, intelligent; while the pictorial arts, referred to as the lesser arts, were aligned with the feminine attributes of “imitation, sympathy, charm, grace, and beauty” (Kooistra, 1995). Ideologically, for Wordsworth, the combination of verbal and visual in the same book, or worse, on the same page, personified an unnatural relationship between the sexes. The fact that illustrated books sold better than and were more popular than text-only books, physically manifested a construct that was in direct opposition to a man’s masculinity, his power base, his value structure, his station in society, and his sense of self.

For writers of the Romantic Movement era, such as Lamb, Murray, and Wordsworth, illustrated books attacked their masculinity, their sense of superiority, their popularity, and, since the payment for illustrations had to come out of the cost of producing a book, their financial security. In his essay, Murray tipped his hand at his own gynophobia when he wrote about the Annuals, which were women-centered publications “written and largely (though not exclusively) by women for women” (Kooistra, 2007, p. 396). With sales driven by a growing, prosperous middle class rife with young, semi-educated brides-to-be, publishers pumped out various illustrated gift books such as The Juvenile Forget Me Not, The Juvenile Keepsake, and the Juvenile Scrap-Book, all, unfortunately, making ample use of the youth-oriented adjective (Renier, 1964, pp. 17-19). Murray contended that the Annuals were nothing but “nonsense,” and that he was “[happy] they are nearly extinct” because so much money was “wasted on their production” (Murray, 1844, p. 192). Curiously, Lamb (who openly detested them), Wordsworth, Coleridge, and Walter Scott (1771–1832) all contributed to the Annuals
(Renier, 1964, p. 9). Since the publication (and ever-increasing popularity) of illustrated books could not be stopped, they were something to be feared and denigrated. Therefore, the pejoratives such as “superficial,” “frivolous,” and “juvenile” began not because they were truly deserved, but because a few prejudicial, frightened, elitist men needed to find some way to convince themselves that they were still superior.

The Foundations of American Illustration

Because there was no prejudice against illustration, the reach and influence of these artists was vast and varied. Nast, who created the images of the Republican Elephant and the Democratic Donkey, also drew “The Tammany Tiger,” which helped bring down the Tweed Ring; Remington chronicled the American West; Vedder painted murals in the Library of Congress; Farny, while on assignment for Century Magazine, introduced Sitting Bull to General Grant; Kemble illustrated the works of Mark Twain; the “Gibson Girl” personified the look of the “ideal” American sweetheart; Pyle (“The Father of American Illustration”) began The Brandywine School; and Clinedinst painted President Theodore Roosevelt and Admiral Perry’s portraits (Reed, 1984, pp. 10-43). These were the magazines and artists who formed the foundation of the Golden Age of Illustration in America, which lasted from the 1880s until The First World War.

Illustration and the Prejudice of Modernism

In 1927, Thomas Craven (1888–1969) wrote “The Decline of Illustration,” which appeared in the October issue of American Mercury Magazine. As an art critic, Craven was known to be caustic, judgmental, opinionated, and, due to his popularity, highly influential. “My pet abominations,” Craven once wrote, “are artists who have to go abroad to find time to paint and think there’s nothing at home worth painting; critics who have just discovered modernism; artists ditto; …and I have a prejudice against women who paint” (McMahon, 1931, p. 40); an obvious reference to Georgia O'Keeffe (1887–1986). Craven’s approach to “inspiring admiration” among his readers for the artists he liked was to slander the artists he disliked (McMahon, 1939, p. 37). Therefore, while “The Decline of Illustration” was intended as a call for better painters and illustrators, its
mixed message set the tone for a heightened prejudice against American illustration that has lasted almost eighty-five years.

Even though Craven thought Abbey, Vedder, La Farge, Blum, and Homer were “outstanding Americans”, he felt Gibson was “inept,” “limited and mediocre;” and that Pyle, “the most significant” illustrator of his time, eventually “succumbed to popular evils, [and] ended a prolific hack” (Craven, 1927, p. 204). Craven continued his essay by denouncing the works of N.C. (Newell Conovers) Wyeth (1882–1945), Harvey Thomas Dunn (1884–1952), Howard Chandler Christy (1873–1952), Harrison Fisher (1877–1934), J.C. (Joseph Christian) Leyendecker (1874–1951), Maxfield Parrish (1870–1966), Dean Cornwell (1892–1960), and Rockwell Kent (1882–1971) some of the most popular illustrators of the early twentieth century (Craven, 1927, p. 205).

Instead of the more popular artists and publications, Craven preferred illustrators whose works appeared in “radical or subsidized magazines” (Craven, 1927, p. 206). Ironically, most contemporary art historians consider many of these individuals Fine Artists rather than illustrators. Among the twentieth century “illustrators” Craven admired were John French Sloan (1871–1951), Boardman Robinson (1876–1952), George Wesley Bellows (1882–1925), William James Glackens (1870–1938), Jerome Myers (1867–1940), and George Benjamin Luks (1867–1933) because their works depicted “scarifying irony, humor, sincerity, and artistic intelligence” (Craven, 1927, p. 205).

Craven claimed that the decline of illustration was due to the emergence of photography, the seduction of advertising to lure away great illustrators, and the importation of the “old” prejudice against illustration by the cult of modernism (Craven,
What Craven did not take into consideration was that because the increase in the use of photography in publishing since the First World War eliminated so many jobs, illustrators had to turn to advertising to earn a living. Unfortunately, even though Craven alleged “the whole world of modern art was no good,” because he deemed the artists “morally corrupt and even dishonest,” he could not see the damage he himself was doing to illustration (McMahon, 1934, p. 26). By eviscerating the artists people knew and cherished in a public forum, he perpetuated and popularized the “old” prejudice against illustration throughout the general population. By his own hand Craven not only helped turn public opinion against illustration, but also reinvigorated and fortified modernist’s continued prejudice against it.

Fear Mongering in the 1950s

The problem with critiquing Fredric Wertham in the 1950s was because an attack on him was seen as an attack on children. With chapters titled “Design for Delinquency” and “I Want to be a Sex Maniac,” Fredric Wertham, M.D. (1895–1981) effectively sensationalized and popularized his infamous “mental hygiene” condemnation of comic books, Seduction of the Innocent (Wertham, 1954). Essentially, some comic books of the 1950s were no different than the Penny Dreadfuls of the 1800s, but, the witch hunts and paranoia of the 1950s prompted by rampant McCarthyism fear mongers needed a scapegoat for anti-social teen rebellion and comic books were an easy target. After Seduction of the Innocent’s publication in 1954, comic books that sensationalized sex, violence, and horror came under heavy governmental scrutiny. However, not everyone agreed with Wertham’s findings. One Oxford University Press reviewer considered
Seduction of the Innocent to be “polemical rather than scientific in approach and presentation,” and that “the unsystematic nature of the data presented [should] argue against giving this book serious consideration” (Mischler, 1955, p. 115). Without hard scientific evidence, the reviewer for The Library Quarterly wrote that “Wertham comes close to using in this book one of the features that is essentially wrong in the comics, namely, an arousal of feelings, an absence of balanced judgment, an appeal to violent emotions, rather than an appeal to reason,” and concluded, “methinks this psychiatrist asserts too much” (Bettelheim, 1955, p. 129).

While both reviewers acknowledged violent and sexually explicit comic books were problematic for young children, they also felt Wertham was attacking a symptom rather than the underlying problems of society. As Claywood pointed out in School Library Journal, Wertham’s solution to eliminate comic books was simplistic, owing more to “high-brow tastes in the 1950s than about the psychology of young people” (Claywood, 1994, p. 48). “Our cry should be for better education,” wrote Bettelheim in The Library Quarterly, “better supervision, better living conditions for youth, and not against comics. Sin is eradicated not by preaching or legislating against it, but only by making virtue readily possible, enjoyable, and rewarding” (Bettelheim, 1955, p. 129). Regrettably, in the absence of any other studies, Wertham was considered the leading expert on comic books in his field, and he leveraged that position as a celebrity du jour.

Wertham chose to demonize a form of entertainment rather than deal with the root cause of society’s problems probably because comic books were an easily-accessible, tangible target, or perhaps because on some level he knew that the difficulties associated with growing up were vastly beyond his, or anyone’s, ability to solve. Unfortunately,
Wertham never interviewed Harold Rudolf “Hal” Foster (1892–1982), the creator of the comic strip *Prince Valiant* (1937–present). Had he done so, he may have found that root cause. As a lecturer at a women’s club meeting in 1949, Foster was asked by one of the members whether or not “the industry didn’t need a house-cleaning” because she felt some comic strips had a “bad influence” on children. Sharp as ever, Foster replied, “Let’s say the average youngster spends a half hour a day on the comics. If that half hour can undo the good that parents are supposed to do in the other 23½ hours, madam, whose fault would you say that was?” (Howard, 1949, p. 109). *Seduction of the Innocent* nearly destroyed the comic book industry, and permanently scarred a generation’s perception to their positive educational possibilities because Wertham knew it was easier to blame the presses instead of the parents.

**Will Eisner’s Artistic Family Tree**

While illustrations and comic books are two separate mediums, they share a common history. Over the past two centuries, graphic storytelling has progressed from single illustrations that accompanied a text to the utilization of multiple panels of sequential art to convey meaning and information. As with illustration, graphic narratives fought against their own prejudices, but these two bodies of art share a common artistic lineage. Many of America’s representational artists can trace their artistic roots to the French Academy—and so can Will Eisner. In fact, we can trace Eisner’s Artistic Family Tree, his Artistic DNA if you will oblige, to nine Prix de Rome-winning painters including Jacques-Louis David (1748–1825).
If we think of the rolls of teacher/student in terms of parent/child we can trace an artist’s Artistic Family Tree back through time over many generations. Eisner studied at the Art Students League of New York under the famous anatomist, George Brandt Bridgman (1864–1943). [Note: PdR, YYYY indicates a Prix de Rome-winning artist and the year they won it]. Bridgman was taught by Gustave Clarence Rodolphe Boulanger [PdR, 1849], and Jean-Léon Gérôme who both studied under Paul (Hippolyte) Delaroche. Delaroche was preceded by Baron Antoine-Jean Gros, Jacques-Louis David [PdR, 1774], François Boucher [PdR, 1720], Joseph-Marie Vien, Charles-Joseph Natoire [PdR, 1721], François Lemoyne (Le Moine) [PdR, 1711], Louis Galloche, and Louis de Boullogne II [PdR, 1673] whose father, Louis Boullogne the Elder, was one of the fourteen original founders of the French Academy in 1648. However, that is not the most remarkable aspect of Eisner’s artistic pedigree because this lineage of teacher-to-student also traces back through Jean Bardin [PdR, 1765], Gabriel-François Doyen [PdR, 1746], and Charles-André van Loo [PdR, 1724] to Leonardo da Vinci and beyond. This means that anyone who ever took a class from Eisner, or has been taught by a student of Eisner’s, is connected to this lineage as well (See Figure 7: Will Eisner’s Artistic Family Tree at the end of this chapter).

In Summation

Illustration and graphic narratives share a rich heritage. Though picture books were once viewed as a frivolity or as a threat to a male-centric society, the power of illustration to influence viewers’ perceptions and opinions has persisted despite many obstacles. While illustrations and comic books are two separate mediums, they do share a
common history. Over the past two centuries, graphic storytelling has progressed from single illustrations that accompanied a text to the utilization of multiple panels of sequential art to convey meaning and information. Comic books and graphic narratives fought against their own prejudices for almost a century, but they have survived to become not only a respected art form, but also a complex and versatile educational tool. Prejudice towards the Arts, such as the type perpetuated by Lamb, Murray, Wordsworth, Craven, and Wertham, appears driven by a sense of masculine elitism. A continued prejudice towards illustration and graphic narratives is a continued prejudice towards women. While we may have forgotten the origin of that prejudice it is still there nonetheless, and it has no place in the 21st Century.

As the migration to digital forms of interacting with students progresses, graphic eTextbooks are poised to make the move as well. It is the belief of this author that digital graphic eTextbooks for introductory-level undergraduate study will one day be the norm rather than the exception, and it is the purpose of this dissertation to find ways to make that happen.
Figure 7: Will Eisner’s Artistic Family Tree
CHAPTER 3
CONSTRUCTING THE STUDY

Historical Research and Grounded Theory:
Inextricably Interwoven Methodologies

While the overall framework of this dissertation followed a mixed-methods approach, two very important inextricably interwoven methodologies were utilized for collecting, evaluating, and understand the data. They were historical research and grounded theory. My historical research methodology adhered to the heuristic-criticism-synthesis and exposition triumvirate establish by Gilbert Garraghan in his book, A Guide to Historical Method (1946). A heuristic search for material followed “Father of Modern History,” Leopold von Ranke’s exhortation to “go to the sources.” Since educational graphic novels and graphic textbooks are visual mediums, Jonathan Crary’s writings in Techniques of the Observer (MIT Press, 1992), specifically those dealing with subjective vision and visionary abstraction, were incorporated into my own theory base. In addition to printed material, educational graphic novel and graphic textbook creators and scholars were interviewed. Historical criticism was used to appraise the material, and, when necessary, placed it in the context of the time it was written. Specifically for this dissertation, historical data included the graphic visual arts in the form of comics, comic books, graphic novels, graphic textbooks, illustrations, and paintings in addition to
written material. A modified grounded theory approach was used to constantly compare educational graphic novels, graphic textbooks, pre factum data, and interviews in order to produce a broader understanding of their strengths and weaknesses thus creating a “formal, substantive theory of [this] social phenomena” (Schwandt, 2007, p. 131). I refer to this as a “modified” grounded theory approach because I was working from a loose theoretical framework based on my own experience with the material. However, I openly permitted the information gathered to lead me down new paths of inquiry, and analyzed all the data before drawing my conclusions.

Mixed Methods (Multimethodology) Approach for Research

My strategy for inquiry followed a mixed methods approach with very broad parameters. I did this because I needed to include quantitative information into a discourse that has predominantly been quantitatively-based in its discussions of the use of graphic narratives for education. I felt that by including quantitative data into the discourse I had a better chance of convincing my analytically-grounded critiques regarding the benefits of introductory graphic textbooks. To do this I gathered both qualitative and quantitative data in order to fully explore the meaning of these issues for creators, publishers, teachers, and students. This larger framework helped to guide the research, and inform my understanding of the issue involved.

By their nature graphic narratives fit nicely within a pragmatic worldview for research because they are pluralistic and are real-world practice oriented constructs, which means that, according to Creswell, graphic narratives conform to the philosophical assumptions associated with a mixed methods approach (Creswell, 2009, pp. 14-18).
While there are, admittedly, aspects of qualitative strategies associated with grounded theory, phenomenology, and, because of the multi-layered storytelling aspects embedded in the creation of graphic narratives, Narrative research/narratology, it was the application of my methods of research that drove my need for a mixed methods approach, to wit, the use of: both open-ended and closed-ended questions, both emerging and predetermined approaches, multiple forms of data drawing on open possibilities, statistical and text analysis, and across database interpretation (Creswell, 2009, pp. 14-18). My purpose for my using a mixed methods approach was because I was seeking to understand the positive and negative issues surrounding the implementation of using educational graphic narratives and graphic textbooks for teaching undergraduate students, and bring about positive change by creating academic standards and strategies necessary for their future development. Because of this, not all of my questions could be answered through qualitative research alone.

Collins, Onwuegbuzie and Sutton (2006, pp. 69-70) outlined 13 steps that a researcher should go through when conducting mixed research. They are: 1) determine the goal of the study; 2) formulate the research objective(s); 3) determine the research/mixing rationale(s); 4) determine the research/mixing purpose(s); 5) determine the research question(s); 6) select the sample design; 7) select the mixed methods research design; 8) collect the data; 9) analyze the data; 10) validate/legitimate the data and data interpretations; 11) interpret the data; 12) write the final report; and 13) reformulate the research question(s).
Determine the Goal of the Study

The goal of this study is delineated in my overarching research question.

What are the advantages of utilizing educational graphic novels in teaching at the undergraduate level, and what standards can be established for successfully producing a multi-modal educational textbook that offers new ways for undergraduate students to relate to, understand, and construct knowledge utilizing the graphic novel format?

Formulate the Research Objective(s)

The primary research objective is simple, and is also delineated in my overarching research question.

…what standards can be established for successfully producing a multi-modal educational textbook that offers new ways for undergraduate students to relate to, understand, and construct knowledge utilizing the graphic novel format?

Determine the Research/Mixing Rationale(s)

The qualitative aspects of graphic narratives is not enough to convince staunch academic detractors that this format is a significantly more robust teaching/learning tool than traditional text-only textbooks. I needed to present quantifiable data from not only within the educational graphic textbook community, but also from other disciplines such as cognitive learning as it relates to how the brain deciphers images. Only by integrating both the qualitative and quantitative aspects of educational graphic novels and graphic textbooks could I have a strong enough case for their substantive development in the area of undergraduate studies.
As I delineated in Figure 8: Dissertation Research Design, much of my study was qualitative consisting of data collected through document analysis, personal interviews, and a blog. Data collected from documents fed both the interview questions and the blog questions. Interview answers fed blog questions, and blog questions in turn fed follow-up interview questions (See Graphic Textbook Dissertation Blog section below for a further explanation regarding problems with blog questions.). Information collected from the survey was intended to form my quantitative data.

Determine the Research/Mixing Purpose(s)
As stated previously, I needed to gather both qualitative and quantitative data in order to fully explore the meaning of the issues surrounding the implementation of utilizing graphic textbooks for teaching undergraduate students.

Determine the Research Question(s)
Because research questions “dictate the type of research design used, the sample size and sampling scheme employed, and the type of instruments administered as well as the data analysis techniques” (Onwuegbuzie and Leech, 2006, p. 475), my interviewing strategy incorporated a combination of both quantitative and qualitative questions. My sub-questions, which flow from the overarching research question, were directed towards graphic narrative creators, editors, publishers, and readers, and ranged from the very basic to the more complex and esoteric. As they relate to the art making process of creating graphic narratives and the experiential process of reading graphic narratives, these questions followed a “What works?” “What doesn’t work?” “Why doesn’t it
Concurrent Triangulation Design

**Qualitative research**

- Document Analysis
  - Formulate Questions
    - Interviews
      - Analyze Answers
      - Are all the questions answered? (No)
    - Emerging Methods
      - Formulate new questions
      - Are all the questions answered? (No)
- Blog
  - Analyze Answers
  - Are all the questions answered? (Yes)

**Quantitative research**

- Document Analysis
  - Formulate Questions
    - Send out questionnaire
    - Analyze Answers
      - Are new questions raised? (Yes)
      - Are new questions raised? (No)
- Compare Data Results

Figure 8: Dissertation Research Design
work?” and “How can we make it work?” form of inquiry. See Appendix A: Structured Interview Script for questions used for my interviews.

Select the Sample Design

Using theoretical sampling, I selected the majority of my interviewees specifically because they are professional creators working in, or connected to, the graphic narrative profession, so they came to this study with a solid knowledge-based regarding the subject matter. For the quantitative survey sample chapters were selected from the following graphic textbooks mentioned by the interviewees:

*The Cartoon Introduction to Economics, Volume One: Microeconomics* (2010) by Yoram Bauman, Ph.D. (Author), and Grady Klein (Illustrator).


Concurrent Triangulation Design

The format for this dissertation followed a modified *Concurrent Triangulation Design* (Figure 8). The design consists of two qualitative sections, and one quantitative section. After document analysis of existing literature on the subject was completed, questions were formulated for each section. For the qualitative *Structured Interview* section only professional graphic narrative creators, editors, publishers, historians, and
librarians were interviewed. Interviews consisted of closed questions, open questions, and leading questions.

Research Methods for Data Collection

Methods of retrieving information for this dissertation included graphic narrative inquiry, structured interviews, unstructured interviews, pre factum Internet data collection, a dissertation blog, and a quantitative survey.

Graphic Narrative Inquiry

*Graphic narrative inquiry* was used to determine how information and meaning are conveyed to the reader. Because narrative inquiry uses stories, autobiographies, journals, field notes, letters, conversations, research interviews, family stories, documents, photographs, and life experiences as data sources, it was eminently useful for dismantling and evaluating educational graphic narratives and graphic textbooks (Clandinin & Connelly, 2000, 92-118). Verisimilitude, as it related to graphic narrative inquiry, was used “as a criterion for judging the evocative power or sense of authority of a [graphic narrative] portrayal” (Schwandt, 2007, p. 313).

The term *graphic narrative* as it relates to visuals employed to inform a story has been in use for nearly a 150 years with the publication of *A Troopers Adventures in the War for the Union: A Thrilling History of the Campaigns, Battles, Exploits, Marches, Victories and Defeats of the Army of the Potomac. Being a Complete and Graphic Narrative of the Peninsula Campaign Under McClellan* by F Colburn Adams (New York: Hurst & Co., 1865). However, its use as it pertains specifically to sequential art
storytelling is more recent, as it appeared on the cover of *Steranko: Graphic Narrative: Story-Telling in the Comics and the Visual Novel* by Philip Fry and Ted Poulos (Winnipeg: Winnipeg Art Gallery, 1978). Because educational graphic novels and graphic textbooks are a combination of visuals and text, they are atypical of conventional, text-only narratives. Therefore, traditional narratology, without a modifier, cannot sufficiently encompass the scope of my methodology. Since storytelling in educational graphic novels and graphic textbooks takes place through an interplay of visuals and words (and sometimes just through visuals), the term graphic narratology presents a more descriptive, accurate and comprehensive methodological approach for defining the scope of my research.

Since educational graphic novels and graphic textbooks are illustrated pedagogies, disassembling them presented unique challenges not found in their more traditional narrative counterparts. Because their purpose is to convey information (teach), graphic textbooks do not necessarily follow, nor have to follow, the standard narrative structure of setup, conflict, and resolution. It was necessary to disassemble existing graphic textbooks in order to determine how they conveyed information to readers.

One of the ways in which graphic novels involve readers in the narrative is by placing them *in locum tenens* with the main character (in place of the main character). In theater this is referred to as transpositionality, and it is performed to evoke a sympathetic bond between the main character and the reader (Chew & Stead, 1999). Another way in which educational graphic novels and graphic textbooks have successfully interacted with the audience is to use a narrator who addresses the reader directly by breaking down the *fourth wall*. The fourth wall is another term that is also borrowed from theater, and is
attributed to eighteenth century French philosopher Denis Diderot (Wilson & Goldfarb, 2003, p. G4). In theater the fourth wall represents the “wall” between the stage and the audience (the stage’s two sides and back wall comprise the other three). In sequential art it is the space between the two-dimensional picture plane and the reader. Additionally, when the narrator addresses the reader/audience he/she/it plays a similar role to that of a Greek chorus as found in plays by Aeschylus (Agamemnon), Sophocles (Electra), and Euripides (The Bacchae), and later, Shakespeare (Romeo and Juliet, Henry V, etc.). The primary difference between live theater and a graphic narrative is that the graphic narrative experience is more intimate since it is a one-to-one interaction whereby the reader controls the amount of time spent on any one sequence (or soliloquy).

Disassembling Graphic Narratives

Because academic rigor of content material is crucial to their development, the primary focus of this dissertation is to create standards by which educational graphic narratives and graphic textbooks can be developed for undergraduate students in introductory classes across the curriculum. As mentioned in Components of Developing an Educational Graphic Novel, development of graphic narratives can be divided into three interlocking areas of study: process, content, and visual form (Figure 1: Educational Graphic Narrative/Graphic Textbook Model). At the intersection of the three components with narratology is the completion of a graphic narrative. Each of the three primary areas of study required its own research design strategy.

Process is the knowledge of the graphic novel format’s genealogy—its history. Historical research, grounded theory, and document analysis approaches were used to
understand how the graphic narrative format began, how it evolved, and who the major contributors/creators were/are.

Content (the narrative—the story the graphic novel is telling) and visual form (the illustrations that accompany the text) were evaluated as inextricably interwoven elements of a single construct. While some graphic narrative authors also illustrate their books, others do not; however, creating a graphic narrative requires skills beyond simply just writing words and/or drawing pictures. Therefore, content and visual form were examined jointly because these two elements work in concert with one another to create an amalgamated learning experience. Sequential art narratives, such as those presented in comic books and graphic narratives, engage both the right and left hemispheres of the brain to interpret meaning. This “unique multi-modal literacy of comics” (Hammond, 2009, p. 27), I believe, initiates a co-dependent revelatory experience in the brain between both visual and oral reception. It is an interpretive act that disassembles images, text, and iconography (both covert and overt); identifies and deciphers these component parts (connotations and denotations); determines the relative value of each of the component parts, and places them in context; and then reconstructs these component parts into a meaningful translation as they relate to the ongoing narrative.

Reading sequential art is problem-solving—it is a form of higher-order thinking comprised of analysis, synthesis of thought, application of ideas, and evaluation of concepts. Reading sequential art is a form of converging learning, which, according to David A. Kolb’s Experimental Learning Theory (ELT), is a product of Abstract Conceptualization (AC) and Active Experimentation (AE) (Kolb, 1983, rev. 2006). Converging learning is a “doing/thinking” style of learning (different from
“watching/feeling”). “People with a converging learning style can solve problems and will use their learning to find solutions to practical issues” (Kolb, 2006). Curiously, this may explain why science-related graphic novels are currently the most prolific and popular of all educational graphic novels.

During the data collecting portion of this dissertation the following questions were continuously foregrounded in order to understand how graphic narratives already initiate multi-modal learning, and how they may be further developed as a multi-modal educational tool.

1) How do educational graphic novels visualize information?
2) How do educational graphic novels portray people? Do readers make an emotional connection with the characters portrayed?
3) How do educational graphic novels map the information?
4) How do educational graphic novels chart the information? Do they use graphs?
5) How do educational graphic novels visualize timelines?
6) How do educational graphic novels explain connectivity? How do they explain how the parts relate to the whole?
7) How do educational graphic novels visually outline the key points and sub-points?
8) Pow! Bam! Smack! How do educational graphic novels use sound effects to enhance the learning experience?
9) Can educational graphic novels that visually portray action sequences simulate a kinesthetic learning experience? Do readers physically move during visually portrayed action sequences?
10) How are educational graphic novels used for group learning?
Working Theories: How We Derive Meaning From Graphic Narratives

Artists are interpreters of what they see or imagine. Even photorealism is an interpretation of a subjective reality based on the eye of the observer (and the talent of the artist). But what the eye can see also has physical limitations. For example, no one can see ultra-violet light, so there are no visual representations of it. Yet most artistic limitations are not based on universal physics, but rather personal aesthetics. Artists, like everyone else, edit reality by enhancing what is important, and deemphasizing (or eliminating) the unimportant—it is how our brains work (Zeki, 2005, p. 100). For sequential artists this happens all the time because the illustration is in service to the narrative. However, much of the information and/or details in the story portion of the graphic narrative must be conveyed visually in order to create meaning. There is a whole lot more to developing sequential art than simply drawing “talking heads,” and to fully understand the cognitive dynamics at work in experiencing a graphic narrative it is necessary to understand what the brain “sees” when it “reads” a page or panel of sequential art, and how the brain derives meaning from this literate art form.

Gestalt Psychology

In *Understanding Comics*, Scott McCloud describes *Closure* as “observing the parts, but perceiving the whole” (McCloud, 1993, p. 30). This is a sideways interpretation of Gestalt psychology’s *Law of Closure*, in which Kurt Koffka states: “It has been said: The whole is more than the sum of its parts. It is more correct to say that the whole is something else than the sum of its parts, because summing up is a meaningless procedure, whereas the whole-part relationship is meaningful” (Koffka, 1935, p. 176). Koffka begins
by referencing Aristotle’s oft-misquoted quote, which is: “The whole is greater than the sum of its parts.” In actuality, what Aristotle was saying about Unity was that things “have several parts [in] which the totality is not, as it were, a mere heap, but the whole is something besides the parts.” What both Aristotle and Koffka are saying is that when we see only part of something (as in single comic panels for example), there are more complex and dynamic relationships transpiring in the brain—more meaning-making occurring—than simply reading and/or looking.

The Law of Closure works in a more complex fashion for sequential art. When drawing a circle, for example, it is better to make the form with a broken line as opposed to a solid one. With a broken line the brain becomes more interested in the representation, more engaged with the drawing, since it has to actively complete the form. A broken line adds energy to a drawing, whether the illustration is as incredibly intricate as a work by Joseph Clement Coll (1881–1921), or as beautifully simplified to its vital essence as rendered by Charles Schulz (1922–2000). Within Gestalt psychology there are other “Laws” that have meaning to creators of graphic narratives and artists in general. Among these are the Law of Continuity, the Law of Similarity, the Law of Proximity, and the Law of Symmetry. Gestalt psychology concerns itself with perception and organization, and if you examine these “Laws” you will find corresponding lessons being taught in any foundational design class.

Cognitive Psychology and Dual Coding Theory

Cognitive psychology focuses on how the brain acquires, processes, and stores information. Perception is a huge component of cognitive psychology, which is an
equally huge component of sequential art. How we see what we see and derive meaning from images has as much to do with enculturation as it does with physiology (Young, 2005, pp. 224-225). We are a long way from knowing how much of our aesthetic sensibilities are culturally-based and how much of it comes from our brain being hard-wired, and we may never know. However, what we do know from the study of cognitive psychology is how we can remember better, make accurate decisions faster, and become better learners. Some of the areas of research in cognitive psychology include form perception, pattern recognition, language acquisition, problem solving, and dual coding theory.

Dual Coding Theory (DCT) was conceived by Allan Urho Paivio (1925–), a professor of psychology at the University of Western Ontario. The two major components of DCT are logogens (verbal system units/words) and imagens (non-verbal system units/pictures). In DCT, meaning is derived from the relationship between these two components (Eysenck & Keane, 2000, p. 262). This is no different from how sequential art works. Not surprisingly, in a 2009 article by Alan G. Gross regarding DCT’s verbal-visual interaction, the author used a page from Eisner’s Comics and Sequential Art to illustrate this theory (Gross, 2009, p. 154). Curiously, Paivio’s Mental Representations: A Dual Coding Approach (1986), which details DCT, was published only a year after Comics and Sequential Art. Not that Paivio or Eisner ever met, but it is fascinating that their two interrelated/interwoven/interlocking theories appeared in the arts and psychology at the same time.

There are two types of “Codes” in DCT: Analogue Codes and Symbolic Codes. Analogue Codes refer to images in our minds based on what see, or have seen, in the real
world. Symbolic Codes are those things, such as writing, or icons, that represent a concept or idea. Symbolic Codes are divided into verbal and non-verbal subsystems, which are then divided into visual, auditory, and/or haptic sensorimotor subsystems (Paivio, 1986, p. 54). McCloud covers Symbolic Codes in Understanding Comics when he writes about “Icons” (McCloud, 1993, pp. 24-59). For graphic eTextbook creators, having a working knowledge of cognitive psychology, especially DCT, would be a plus.

**Neuroscience**

“Visual artists are, in a sense, neurobiologists of vision, studying the potential and capacity of the visual brain with techniques that are unique to them” (Zeki, 2002, p. 918).

How does the brain process art? *Inner Vision: An Exploration of Art and the Brain* (1999) by Semir Zeki, professor of neuroaesthetics (his term) at University College London, lays some interesting groundwork into understanding how art works. Currently, neurobiologists know more about how the brain responds to color, motion, and depth systems than they do about form systems, but that is quickly changing with strides in computational neuroscience’s understanding of neural networks. However, there is a small area of Zeki’s neuroaesthetics that needs further examination.

It should be no surprise that different areas of the brain are functionally specialized. Some areas process visuals, such as motion, color, form and faces, while others process information from the other four senses. Yet even cells are specialized. There are, for example, orientation-selective cells, “which respond selectively to straight lines and are widely thought to be the ‘building blocks’ of form perception” (Zeki, 2005, p. 99). According to Zeki, this is why artists such as Piet Mondrian (1872–1944) began
experimenting with line and non-figurative art. Mondrian believed that there was a configuration made up of lines, squares, and rectangles that was serene or “free of tension” (Zeki, 1999, p. 123). What neuroaesthetics is discovering now is that this “plurality of straight lines” is “admirably suited to stimulate cells in the visual cortex” (Zeki, 1999, p. 124). It is my belief that the very panel “grid” of the sequential art page plays a significant part in preparing the brain to receive information. However, there is no research supporting this hypothesis, and developing such a test goes well beyond the scope of this dissertation.

Figure 9: How the Brain Disassembles Sequential Art to Derive Meaning
Putting it All Together

So, how does the brain process information from a graphic narrative? While we see whole pages of art we do not read whole pages of art—we “read” panels. Panels are the “building blocks” of sequential narratives, and, as we migrate to digital platforms with smaller and smaller screens, I believe the medium will need to focus less on traditional page design and more on screen/panel design. Figure 9 represents what I believe is happening when the brain interprets a panel of sequential art, and tries to derive meaning from it. Understand that the idea of the brain being wholly right or left is very simplistic, but it sells a lot of mass-market books. The brain is much more complex than that, and information readily passes back-and-forth between the two hemispheres. For example, language processing, for example, is not modularized to one location, but resides in multiple areas (Cohn, 2007). Yet for all that complexity, the intricate process of reading graphic narratives goes largely unrecognized, probably because they are “cartoonish” and enjoyable to read.

The Potential for Graphic Narratology in Pedagogy

The past ten years have shown a tremendous growth in the publication of texts geared towards utilizing graphic narratives in the classroom. Teaching the Graphic Novel (2009), edited by Stephen E. Tabachnick contains 34 essays covering “Theoretical and Aesthetic Issues,” “Social Issues,” “Individual Creators,” and “Courses and Contexts.” It is an excellent resource book, filled with many qualitative accounts, but without any quantitative meat to it. Tabachnick begins his Introduction with “It is rare for a new genre to appear in any art form.” It is an unfortunate choice of words, and is emblematic of
academia’s failure in understanding what graphic narratives really are. Like film, graphic narratives are a format, a medium of artistic expression—not a genre. While one might expect this type of error from a layperson, Professor Tabachnick is the Chair of the English Department at the University of Memphis. This misconception speaks to the problems surrounding our ability to classify this medium. Even if knowledgeable professors who are editing books on the use of graphic narratives in the classroom do not understand this medium, how is it possible to convince undergraduate professors that it is a viable teaching tool? How is it possible to justify their place in college and university classrooms as a textbook when so many academicians do not know what they are?

Fortunately, writer, illustrator, and teacher Professor Jay Hosler of the Department of Biology, Juniata College, and Assistant Professor of Mathematics K. B. Boomer from Bucknell University understand the academic stigma associated with graphic narratives, and they have the quantitative data to support their claims on the advantages of using graphic textbooks for teaching undergraduates. Unlike traditional textbooks, the situated narrative of graphic textbooks provides an additional visual-learning context for the reader. Graphic textbooks are “a pedagogical tool that engages students, motivates them to read, helps them remember content, and makes the whole process fun” (Hosler & Boomer, 2011, p. 310).

In the study, Hostler used his graphic textbook Optical Allusions (2008) to quantify student learning. In three of four classes, Hostler used his graphic textbook as part of the curriculum, while in a fourth class (the control group) the same material was taught traditionally. The findings showed that among non-science majors who used the graphic textbook there was a significant improvement in both their content knowledge,
and their attitudes towards the subject matter (Hosler & Boomer, 2011, pp. 313-314). These results suggest that a graphic textbook approach to learning not only offers students a deeper appreciation of the subject, but also alters their perception of that subject in a positive way. The ability to decipher imagery in order to derive meaning is a higher-level problem-solving skill that helps cultivate interpretive thinking, and opens students’ perceptions to different, pluralistic perspectives. Hosler and Boomer conclude that “When text and images are combined, reading performance and retention improves compared with nonillustrated text (Sones, 1944; Gambrell and Jawitz, 1993; Carney and Levin, 2002)” (Hosler & Boomer, 2011, p. 315). While further research is necessary, this is a very positive beginning in quantifying the benefits of using graphic textbooks for teaching undergraduate students.

According to Bruner, the human brain is hardwired to tell stories, so we have a ‘‘predisposition’’ for narrative (Bruner, 2002, p. 33). Narratives are how we as social animals communicate; it is embedded in every human culture, and has been part of our communal experience for millennia. We use narratives to not only convey knowledge, but to explain to others what our priorities are, and what are beliefs or values are (Gudmundsdottir, 1995, p. 29). Graphic narratives, and, specifically, graphic textbooks evolved out of the same storytelling tradition. They convey meaning through an interplay of content knowledge (a thorough knowledge of the subject matter), substantive knowledge (theoretical frameworks used to derive meaning from knowledge), and syntactic knowledge (awareness of the structures that guide inquiry) (Schwab, 1978, p. 246). With graphic textbooks, simply having knowledge of the content is not enough. The author not only has to know the information, but has to be able to synthesize it, organize
it, place it in context, and then determine the best way to visually represent that knowledge in the space allotted while at the same time make it interesting and legible. It is not an easy task, but, as Hosler and Boomer observed, “By scaffolding educational material with stories, [graphic textbooks] can make use of situational narratives to provide context for material and thus a mechanism for improving student learning (Dillon, 1981; Caine & Caine, 1991; Wirth & Gamon, 1999) (Hosler & Boomer, 2011, p. 315).

Structured Interviews

The 16 individuals who were interviewed for this dissertation include educational graphic novel/graphic textbook writers, artists, editors, and publishers as well as professors, historians, researchers, curators, and librarians. As the researcher I conducted all the interviews, and all interviewees were/are working professionals. A comprehensive list of the interviewees and their credentials can be found on the Acknowledgments Page at the beginning of this dissertation. For a list of IRB–approved questions used during the interviewing process see Appendix A: Structured Interview Script.

Unstructured Interviews

Unstructured interviews included follow-up conversations or emails with interviewees, as well as, conversations with comic book/graphic novel industry professionals, educators, peers, etc. who were not part of the formal interview process. Follow-up conversations with interviewees were conducted in order to clarify indecipherable comments made on the audio recording. Additional questions were also
developed during the information-gathering phase that were not considered or envisioned prior to the initial interviews. See also the *Graphic Textbook Dissertation Blog* section.

**Pre Factum Data**

*Pre Factum* data, or data that existed “before the fact” through no instigation or intervention on my part, were collected during the information gathering phase. These Internet sources included: posts regarding graphic novels used to teach undergraduate students; professional reviews posted on comics, library, and educational websites or blogs; graphic narrative product descriptions; non-professional reviews posted on sites such as Amazon; journals; and subject related blogs. While professional sources were informative, non-professional sources were significant in determining how particular graphic narratives were received/perceived/accepted/rejected by the public. Rather than seek a potentially biased or skewed local test group, the Internet supplied me with opinions outside of my influence, since it preexisted my inquiry.

Here is an example of pre factum commentary gathered for study:

Since I posted my piece on iPads and Autism a couple of weeks back, I’ve had many emails from parents and professionals telling me about the different tech and non-tech therapies they have used to support the learning and development of their children. It is great to see the critical thinking approach so many of us are applying to our world to determine what works best and will be most suited to our children or ourselves. […]

Interestingly, I have had a lot of feedback from parents of children with autism sharing about just how valuable they have found comic books for their children. And, simultaneously Bill Zimmerman of makebeliefscomix.com made contact to say that he has had many parents sharing with him the value they find in his site. He was able to share some of these from parents who eloquently explain the value of comics in supporting children with autism who learn visually, to build an
understanding of emotions and to develop social stories which help children learn and prepare for activities and engagement (Donahoo, 2011).

The preceding quote from the Geekdad blog is significant to my research regarding the potential of educational graphic narratives as part of the curriculum because it reinforces the idea that sequentially illustrated stories, such as the ones found in comic books and graphic narratives, positively impacts the reader’s ability to make meaning out of abstract concepts. In the case of people with autism, Carol Gray believes that the visual component of the medium helps to “illustrate social skills which are abstract and difficult for students with autism to understand” (Gray, 1994). This speaks to the universality of the iconographic nature of graphic narratives to convey meaning that goes beyond just words on a page.

I also believe that commentaries such as this one speak to a graphic narrative’s unique ability to place the reader *in locum tenens* with the main character, or, in the case of an autobiography/memoir, the author. The degree to which this *transpositionality* occurs opens the reader to the more subtle aspects of a graphic narrative’s connotative messages. This “transpositionality of normative relations between binary opposites” within the graphic narrative format creates a “sustained and self-conscious interrogation of the boundaries between life and art” (Salmon, 2000, p. 278). With increased empathy for another character, be that individual cartoon, caricature, representational, or anthropomorphic, comes an increased willingness on the part of the reader for understanding. The reader becomes invested in the character because they *become* the character. This form of transpositionality is the same process in which readers of all ages, genders, races, and social classes have used to identify with superhero characters since
that first appearance of Superman. It is a process that was recognized by an “elderly teacher” and Milton Schwebel nearly seventy-five years ago (See Prologue, pp. xx-xxi).

The Internet is a wealth of underutilized qualitative pre factum public commentaries regarding graphic narratives, which proved to be an invaluable source of raw, unrestricted, and unedited data.

Graphic Textbook Dissertation Blog

http://graphictextbooks.blogspot.com/

The 12-part *Graphic Textbook Dissertation Blog* was an open forum where anyone could comment. The purpose of the Graphic Textbook Dissertation Blog was to involve as many people as possible in order to point out potential problems with my theories regarding graphic textbooks. This approach was intended to replicate a similar blog strategy by Richard A. DeMillo, former dean of computing, Georgia Tech, and current director for the Center for 21st Century Universities in Atlanta.

Last year about this time some industrial scientist claimed that he had solved one of the outstanding problems in this area. In the normal course of events, the scientist would have written up the paper, would have sent it to a conference. It would have been refereed. Nine months later the paper would have been presented at the conference. People would have talked about it. It would have been written up to submit to a journal. Refereeing would have taken a couple of years for that. Well, the paper got submitted to Lipton’s blog. It just caused a flurry of activity. So thousands and thousands of scientists flocked to this paper, and essentially speeded up the refereeing of the paper, shortening the time from five years to a couple of weeks. It turns out that people came to believe that the claim was not valid, and the paper was incorrect. But what an education for future research students. You get to see the process of scientific discovery in action. (Parry, 2012)

Because not all of the information I needed for my dissertation was pre factum, I
created a 12-part journal/open forum in the form of a Graphic Textbook Dissertation Blog where I posted my theories on developing educational graphic narratives and graphic textbooks for undergraduate study. For the sake of transparency, a Mission Statement at the beginning of the blog informed the public as to the exact purpose of the blog, and the intended use of all posted comments. Every Tuesday and Thursday morning for six weeks I posted a new topic. At the end of each post I included questions and invited readers to post their opinions and commentaries. The only two forms of promoting the Graphic Textbook Dissertation Blog were in the form of emails to personal friends in the comic book and illustration communities, and postings on my personal Facebook page. The goal of the Graphic Textbook Dissertation Blog was twofold. First, by posting my scholarship in a public forum it allowed perspective interviewees to read my theories. After I posted each new blog entry I either sent my perspective interviewees an email, or “tagged” them in a posting on Facebook; both fairly non-threatening forms of communication. For these professionals the blog gave me credibility, which in turn gave me access. Second, though critiques and insights by readers posting on the blog I hoped to discover the weaknesses in my own theories.

The Graphic Textbook Blog entries were as follows:

Blog 1: Developing Graphic Textbooks for Undergraduate Study

Blog 2: Graphic Novels Are Not Literature

Blog 3: Educational Graphic Novels and the Beginnings of Graphic Textbooks

Blog 4: Graphic eTextbooks and the “Infinite Canvas”

Blog 5: Immersive Graphic eTextbooks as the Ultimate Scaffolding Tool
Blog 6: Reading Sequential Art as a Higher-Order Problem Solving Skill, Part 1: Content

Blog 7: Reading Sequential Art as a Higher-Order Problem Solving Skill, Part 2: Context

Blog 8: Designing Graphic eTextbooks, Part 1: Developing the Narratives

Blog 9: Designing Graphic eTextbooks, Part 2: Developing the Visuals

Blog 10: The Origins of Prejudice Towards Illustration, Debunking Fredric Wertham, and Will Eisner’s Artistic DNA Revealed

Blog 11: Manga as Textbooks, and How Japanese Manga began in a French prison in 1832


For the 16 prospective interviewees the Graphic Textbook Dissertation Blog achieved its goal of establishing my credibility, and I had no problem gaining access to all of the individuals I wished to interview based on my research.

Quantitative Survey

The quantitative study consisted of a short survey emailed to 40 professors from the Department of Evolution Ecology and Organismal Biology (EEOB), and the Department of Economics (DOE) at The Ohio State University (See Appendix D: Online Survey, and Appendix E: Sample Graphic Textbook Chapter for the Online Survey). The purpose of the survey was to determine: 1) whether or not these professors knew that educational graphic textbooks are available for teaching undergraduate introductory courses, and 2) assess the participant’s apprehensions towards using educational graphic textbooks to teach undergraduate introductory courses.
Methods of Analysis

Graphic narrative analysis, discourse analysis and document analysis were the primary methods of analysis that were utilized throughout this dissertation.

Document Analysis

Document analysis was applied to books, articles, journals, and blogs written about educational graphic novels, as well as structured interviews, unstructured interviews, pre factum data, and dissertation blog posts acquired during the data collection portion of this dissertation in order to gain understanding of, and develop empirical knowledge about this medium (Corbin & Strauss, 2007, p. 16). Educational graphic novels underwent document analysis to determine how they were being utilized as a multi-modal learning tool. The two major points of interest were: 1) what are the strengths of graphic narratives for education, and 2) what are the weaknesses of graphic narratives for education?

Graphic Narrative Analysis

Graphic narrative analysis was used as a means of studying how the combination of images and text conveyed meaning through the interaction of: content knowledge, which was demonstrated by a thorough knowledge of the subject matter; substantive knowledge and the theoretical frameworks used to derive meaning; and syntactic knowledge, or the awareness of the structures that guided the inquiry (Schwab, 1978). With graphic narratives simply having knowledge of the content is not enough. The author not only has to know the information, but has to be able to synthesize it, organize
it, place it in context, and then determine the best way to visually represent that knowledge in the space allotted while at the same time make it interesting and legible.

“By scaffolding educational material with stories, [graphic textbooks] can make use of situational narratives to provide context for material and thus a mechanism for improving student learning” (Hosler & Boomer, 2011, 315).

Discourse Analysis

Because pre factum data, dissertation blog posts, and graphic narratives are passive access cognitive interfaces, I adopted James Paul Gee’s discourse analysis approach in order to understand the writings surrounding graphic narratives. Gee’s seven building tasks of discourse analysis are: 1) significance, 2) practices, 3) identities, 4) relationships, 5) politics, 6) connections, 7) sign systems and knowledge (Gee, 2011, pp. 121-122). In terms of Foucauldian discourse analysis the graphic novel was viewed as a visual communication construct whose purpose is to convey information, ideologies, attitude, etc. (Schwandt, 2007, p. 73). Through Foucauldian discourse analysis, the function of a character(s) that purposefully addresses the reader within some educational graphic novels (similar to the Chorus in Shakespeare, or Greek dramas) was studied for how it/they impartially and/or persuasively convey information.

In Summation

One of the problems in developing this dissertation was that much of what I was researching is so new that for many of the theories I am proposing there are only a handful of people with whom I can converse with for guidance, and most of those
consider their ideas intellectual property, so they would not discuss their ideas with me.

Additionally, only the second quantitative study for the use of graphic narratives for teaching undergraduate students is still awaiting print (See The Short, Randolph-Seng, McKenny Study below), so measurable data is at a minimum. The more I work with graphic narratives the more I believe that graphic eTextbooks will have a dominant place in the future of all areas of education.
As recently as March 12, 2013, reporter Aimee Blanchette posted a column in the Minneapolis Star Tribune titled, “Comic books have become legitimate teaching tools” (Blanchette). In the article Blanchette quotes Wayzata High School’s new literature class teacher, Meaghan Decker stating, “I’m telling them not to read ahead. They’re having the hardest time with it because they love these books so much” (Blanchette, 2013). Another teacher at Wayzata, Mark Ferry refers to graphic novels as “the great equalizer,” and believes they “require more complex thinking skills than traditional literature” (Blanchette, 2013). Blanchette mentions the recently implemented Minnesota Academic Standards call for the use of new forms of media as the reason behind Wayzata High School’s use of graphic novels. In the final draft of the English Language Arts standards proposed by the Minnesota Standards Review Committee for English Language Arts K-12 (Minnesota Department of Education, September 27, 2010) under the Stories category for Standard 10: Range, Quality, and Complexity of Student Reading 6–12 is the following statement of inclusion (italics mine):
Includes the subgenres of adventure stories, historical fiction, mysteries, myths, science fiction, realistic fiction, allegories, parodies, satire, and graphic novels.

The sheer volume of qualitative accounts of the advantages of implementing comics in the classroom such as the one in the *Star Tribune* is daunting and ongoing, and growing exponentially. In the *Prologue* to this dissertation I mention that the phrase “comics in the classroom as an introduction to narrative structure” revealed over 21 million hits on Google, which is up from 20.4 million hits when I checked it only two weeks ago; illustrating this increased interest. Also in my *Prologue* was Professor Milton Schwebel’s reminiscence of his use of comics in the classroom dating back to the late 1930s, and in Chapter 1, I wrote about my own positionality with this art form and what it means to me. The Blanchette article, the Google search, Schwebel’s story, and my own personal reflections are all qualitative accounts, and they are a viable cross-section of the preponderance of evidence for the use of graphic narratives in education.

Quantitative Data

**Behind the Curve: European Comics in the Classroom**

The use of comics in the classroom in the United States is behind the curve when compared to what is being initiated in Europe. *EduComics* refers to Web Comics as a *plurimedia* medium because they not only combine text with imagery, but also include hypermedia and streaming elements as well. The following is from the EduComics website, which began in 2008.
EduComics is a European Union Comenius education project under the Life Long Learning Programme (ref num 142424-2008-GR-COMENIUS-CMP). It will show educators how online comics can be used in the classroom to enhance learning, engage and motivate students, and use technology in a practical and effective way. The project will create training material for teachers and organize [sic] seminars for teachers in Greece, Cyprus, UK, Italy and Spain. These attending teachers will be able to apply strategies and lesson plans in their schools.

The potential for Web comics to be used in education offers educators a means of using multimedia (text, images, audio and video) with their students in most curricular areas. For example, within science, a student can navigate through a web comic book that shows different characters/actors arguing about a science topic. In languages, characters could be placed in a restaurant where they have to order a meal. A web comic can also allow audio in the languages (EduComics, 2008).

In a 2008-2009 case study at the Varvakeio Experimental High School in Athens, Greece, students ages 12-13 performed collaborative learning tasks around Web comics on the topic of “diet and nutrition habits” utilizing the Modern Greek Language (Vassilikopoulou, Retalis, Nezi, & Boloudakis, 2011, p. 119). In the study, the students developed their own web-based graphic narratives (comics) to teach their peers Modern Greek. The study focused on the following specific learning objectives, which are replicated here as they appeared in Educational Media International, Vol. 48, No. 2, June 2011, pp. 115–126:

- production of multimodal texts (digital stories) in the form of Web comics meaningful for students (situated learning), while contributing to the resolution of a real problem (problem-based learning) corresponding to their cultural experiences;
- development of skills for comic book plot design using Freytag’s specific narrative structure: exposition (setting, characters), conflict, rising action, and climax/turning point, followed by a falling action and resolution/denouement;
• familiarization with other modes of semiotic systems other than simple text;

• development of narrative skills, using various semiotic codes and learning resources;

• understanding of linguistic structural elements, such as types of clauses, forms of noun phrases, points of punctuation, and application of them in the practice of communication via Web comics;

• use of lexical cohesion and lexical affinity in the text of the Web comic and its plot;

• use of vocabulary, grammar and syntax, and paralinguistic elements of oral and written language in the specific case of communication via Web comics.

Also, the teacher tried via this case study to promote the acquisition of skills, such as:

(1) intellectual: critical thinking, creative imagination, analysis, composition, organization, etc.;

(2) communicative-social: collaboration, interaction, responsibility;

(3) metacognitive: self-reflection, evaluation.

The study showed that 23 out of 24 students (95.83%) preferred using digital comics in their courses, and 91.67% of them felt that including digital comics made the course “more pleasant.” “The overwhelming majority (92%) confirmed that the creation of digital comics helped them to better comprehend the way in which the narration of a story is organized,” and 96% of them thought that “the scenario enriched their knowledge of punctuation, types of clauses, and operation of noun phrases in the practice of communication” (Vassilikopoulou, Retalis, Nezi, & Boloudakis, 2011, p. 119-122).
While the researchers concluded that this form of investigation was in its early stages, and that no firm conclusions could be drawn from a single study, the process did, however, help the students in this study acquire linguistic skills, and use their cultural experiences and imaginations to create multimodal texts (Vassilikopoulou, Retalis, Nezi, & Boloudakis, 2011, p. 126).

Because “English as a second language and world language students can more readily comprehend new words when they see an image of the word as they hear it spoken” (Enright, 2012) it makes sense that the development of graphic eTextbooks that can place these lessons in a broader, more robust context would be the next logical step. By utilizing temporal phenomena such as embedded videos, hyperlinks, sound, animatronics, as well as schematics such as concept maps, topographical maps, flow charts, pie charts, bar graphs, Venn diagrams, etc. graphic eTextbooks can evolve into the ultimate scaffolding tool because the learning is not only entertaining, but the pace in which the lessons are taught are student-driven. Aside from one-on-one tutoring, graphic eTextbooks are the closest scaffolding tool we have in our toolbox to individualized learning.

The Short, Randolph-Seng, McKenny Study

In addition to the 2011, study by Hosler and Boomer mentioned earlier, there is only one other quantitative research analysis performed to gauge the effectiveness of graphic narratives for teaching undergraduate students. That dual-study, Graphic Presentation: An Empirical Examination of the Graphic Novel Approach to Communicate Business Concepts, was conducted by Jeremy C. Short, Brandon
Randolph-Seng, and Aaron F. McKenny in 2012, at the University of Oklahoma, and is currently awaiting publication in an upcoming (2013) issue of Business Communication Quarterly. Fortunately, Professor Short was gracious enough to send me a copy of the article. Study 1 consisted of undergraduate business seniors, and explored “the potential of graphic novels to affect learning outcomes and finds that the graphic novel was related to high levels of learning experiences,” (Short, Randolph-Seng, & McKenny, 2013) while Study 2 consisted of undergraduate business students enrolled in a strategic management course and compared “the impact of graphic novels with that of traditional textbooks and finds that verbatim recognition was superior with graphic novel texts.” The study found that through the use of a graphic narrative textbook students “performed better on verbatim recognition of passages than those using a traditional textbook.” The study also determined that “[based] on student feedback, the graphic novel approach seems to relate to high student motivation through perceptions of positive learning outcomes from both the experience- and explanation-based approaches while maintaining high student interest. The graphic novel approach may have encouraged students to integrate and apply the course material in an effective way” (Short, Randolph-Seng, & McKenny, 2013). The study further attempts to break down the rational for this motivation.

Although the current descriptive analysis did not examine the reasons why the graphic novel approach was related to high student motivation and interest, some preliminary reasons can be offered. First, the storytelling structure likely encourages the reader to become invested in learning. Second, as students follow the plot, they have an opportunity to examine characters’ choices and make recommendations for how a character should proceed. Third, the story unfolds in a true-to-life context based on a realistic scenario. This encourages students to integrate and apply management theories. Fourth, the narrative structure unfolds over the course of multiple chapters, giving students the opportunity to see the
results and consequences of characters’ earlier decisions. Facilitating the development of complex mental models to enable sense making of even more complex business situations is an important pedagogical task in management education (Nadkarni, 2003). The sequential nature of the graphic novel format encourages students to reevaluate characters’ decisions as new information is presented and to update their assessment of the situation and adapt their mental models to the incremental complexities of the situation (Short, Randolph-Seng, & McKenny, 2013).

What is suggested in both this and the 2011, Hossle and Boomer study is that while graphic narratives are powerful pedagogical tools they are underutilized, and that more research needs to be conducted in order to illustrate just how effective they are.

Graphic Textbook Dissertation Blog

Admittedly, my initial reaction to the response to the dissertation blog was one of disappointment. As mentioned earlier, through the use of Blogspot’s online statistical tools I knew that 73% of people viewing my blog originated from the United States. Of the 61 other countries world-wide that comprise the other 27% of the page views, Germany and Russia have the largest viewership (See Appendix B: Dissertation Blog Page Views by Country). With all the interest in the blog I was surprised that no one was posting comments. For the first six months it was online there were only six (6) postings. That was frustrating for me considering I wanted to engage in an online dialogue with other students, educators, historians, and graphic narrative creators. Fortunately, that changed for me six months after my initial posting. It was fortunate because how I intended the blog to interact with people finally started happening. As of February 28, 2013, there were 2,100 page views. As of March 17, 2013, there were 2,485 page views, which was a 84.5% increase in viewership in only 17 days.
Because of the blog I received the following email on March 13, 2013, from one of my dissertation interviewees, Josh Elder who reviewed my work. Mr. Elder is the Founder and President of Reading With Pictures, Chicago, IL, an educational non-profit dedicated to facilitating the use of comics in the classroom in order to promote literacy and the visual arts, and improve educational outcomes for all students.

From: Josh Elder <elder1938@gmail.com>
To: Brian Kane <bmkane1@aol.com>
Sent: Wed, Mar 13, 2013 1:39 am
Subject: Re: Time for interview.

Brian,

Just wanted to ping you about our new website at Reading With Pictures that will be built around wiki-style databases for research papers, lesson plans, etc. relating to comics in the classroom. We'd LOVE to host some of your materials and then link to your site in order to increase your reach and personal discoverability while also providing some fascinating and very helpful material to our community.

Let me know if you're interested, and I'll put you in touch with our database team!

Hope all is well,

Josh

In addition to this incredible opportunity I also received the following email next day on March 14, 2013.

From: Jaleen Grove [jaleen@gmail.com]
Sent: Thursday, March 14, 2013 1:54 AM
To: kane.112@osu.edu
Subject: Illustration History
Dear Brian Kane,

I've been trying a few ways to reach you; hopefully this message will go through!

Walter King mentioned to me that you would be a good person to make contact with, and looking over your writing and research, I have to agree.

I have been active in putting together a consortium of illustration historians and educators, and we are collectively working on producing a textbook of the history of illustration. I'd like to invite you to the group; we communicate mainly by email list, and we will have a meeting at the Rockwell Museum on April 26th. Participants so far include museum curators, PhDs, practitioners who teach or publish on history, collectors and dealers from the US, Canada, and UK. The ones who have been most active are educators who teach History of Illustration at art schools; Susan Doyle of RISD is the person taking the lead, as the sole person willing to devote the most time to do it. Several others have volunteered as authors, researchers, editors, reviewers. There is much discussion about a digital component. We have only been operational since January and have just begun talks with publishers. I really hope we can get your input.

Secondly, I am an Assistant Editor of the forthcoming Journal of Illustration. We would like to include you as a potential peer reviewer on a list requested by our publisher, Intellect. Whether you actually choose to review anything is of course up to you - but we would like to supply your name and full contact info, to show the publisher the range of our contacts is sufficient that we can do the journal properly.

I hope to hear from you soon.

Best,

Jaleen Grove

This incredible invitation happened because the people connected with The History of Illustration Project were actively reading my blog. I am certain that neither the Reading With Pictures nor The History of Illustration Project opportunities would have materialized if the dissertation blog was not in place. Unfortunately, in terms of this dissertation, reaction to the blog is occurring much later than anticipated, so evaluation and commentary is limited to this very short window of information gathering. However,
I will admit that I am no longer disappointed in my blog’s ability to connect me to other people.

Quantitative Survey

As part of the concurrent triangulation design a quantitative survey was initiated to determine if the graphic textbooks currently in print could be used as supplemental material for undergraduate students (See Appendix E: Sample Economics Graphic Textbook Chapter for the Online Survey for a sample chapter). As stated in Chapter 3, sample chapters were selected from the following graphic textbooks based on interviewee comments:

*The Cartoon Introduction to Economics, Volume One: Microeconomics* (2010) by Yoram Bauman, Ph.D. (Author), and Grady Klein (Illustrator).


Each of the sample chapters was then sent out to ten (10) educators in the department associated with the information presented in the graphic textbook (Economics, Computer Science, Molecular Biology, and Physics). All that was asked of each participant was a brief statement regarding the content of the material, and if they felt the graphic textbook could be used as an introductory supplemental text for their class (See Appendix D: Online Survey). Unfortunately, the response rate for the survey was less than 20%, and heavily weighted to one specific graphic textbook. The study was
therefore rendered invalid because the data were so skewed and not a valid cross-section of all four samples. Perhaps a future study can be conducted focusing on a greater population of teachers across multiple colleges and universities.

Interviews

Fourteen interviews with 16 participants were conducted during January of 2013. The interviewees consisted of professional graphic narrative writers, artists, publishers, historians, and scholars, as well as a librarian, and the curator of Billy Ireland Cartoon Library & Museum at The Ohio State University. A full list of the participants and their credentials can be found in the Acknowledgments section of this dissertation. All but one of the participants agreed to have their names made public, and while that individual’s identity has been purged, non-descriptive information resulting from that interview was retained for this dissertation as per their consent. As all the participants were professionals who consented to being interviewed The Office of Responsible Research Practices at The Ohio State University issued an IRB exemption (See Appendix F: IRB Protocol: Form of Exemption).

While there were multiple issues discussed in the interviews (See Appendix A: Structured Interview Script) I was specifically looking for answers to five key issues: the strengths of the graphic narrative art form for education; the weaknesses of the graphic narrative art form for education; the adaptability of the graphic narrative art form to all disciplines; recommendations to academics interested in starting their own graphic narrative textbook; and the thoughts these professionals had about academics co-authoring future graphic narrative textbooks.
Strengths of the Graphic Narrative Art Form

The two greatest strengths of the graphic narrative/sequential art medium for education lie in their unique ability to convey large quantities of information visually, and their ability to keep readers interested in the material.

Josh Elder, Jared Gardner, and Tom Brevoort all believe that the combination of the visual/verbal medium of sequential art “engages multiple parts of our brain” (J. Gardner, personal communication, February 10, 2013) in a very unique way. “Visuals allow you to convey a certain type of information, and a lot of that information, in a very short amount of time and space in a far more effective manner than it would be to describe such things using only words” (T. Brevoort, personal communication, January 25, 2013). Elder refers to this form of compact relaying of information as the medium’s “efficiency,” and further acknowledges that the medium’s “efficacy” as he labels it is “based on current neurological studies in whole-brain learning, and multiple learning styles. The idea of dual cognition such that when you have the same information, you have one piece of data represented in multiple ways at the same time you’re more likely to remember that data because it’s linked in your brain in a number of different ways, therefore, not only increasing comprehension, but also long term retention (J. Elder, personal communication, February 2, 2013).

“When you show people pictures it’s sort of crack for the brain,” remarked Jay Hosler, “it gets in right away. With comics you have images, which become indelible, you remember them, and you combine that with textual explanation, so now you’re combining perception with received information. Then, when you knit that all together with a story that has a beginning, middle, and end you have created a scaffolding tool for
all this information, and in the end that is a very powerful way to learn” (J. Hosler, personal communication, February 18, 2013). To illustrate this point Hosler recounted:

There is also a study with doctors performing wound care. One group was given written instructions, and another was given the same instructions along with images for the three major types of wounds. It’s startling because those who were asked four questions about wound care later 60% of the doctors who were provided pictures got all four questions right compared to something like 7% if they didn’t have the pictures. The bottom line is if you put pictures with words people are more likely to read the instructions, understand them, and follow through with the instructions at significant levels (J. Hosler, personal communication, February 18, 2013)

Sequential art provides “visual mnemonics” (Z. Cannon, personal communication, March 11, 2013) that provide a “framework” for understanding subjects and concepts (K. Cannon, personal communication, March 11, 2013). The “visual component is able to communicate so much raw information that is presented to the reader in a direct form—a relatively unfiltered form” (S. Bissette, personal communication, February 9, 2013). For example, embedding scientific topics that require a lot of illustrations in the context of a graphic dialogue, as opposed to just a linear presentation, can be a more helpful way of representing the material “as opposed to just a one-direction presentation” (D. Johnston, personal communication, March 17, 2013).

“The notion that you are tapping into both the concrete and abstract information processing centers of the brain simultaneously via images and words is appealing” for education (J. Ottaviani, personal communication, February 11, 2013).

The second strength of the graphic narrative/sequential art medium is its ability to involve readers. Mark Schultz believes that part of the reason for this engagement is because graphic narratives evoke an emotional response from the readers (M. Schultz,
personal communication, February 5, 2013). Graphic narratives are an “extremely accessible medium,” which “gets people interested in reading” (C. McGurk, personal communication, February 19, 2013) because “[the] content is always inherently more engaging due to its graphic nature” (J. Elder, personal communication, February 2, 2013). People want to read graphic novels because they like them (T. Brevoort, personal communication, January 25, 2013). Graphic narratives have the “advantage of being dynamic in a way that can attract the attention of an audience who might otherwise be less interested in the material it conveys” (S. Saffel, personal communication, March 9, 2013).

Finally, legendary narrative creator, Jim Steranko also believes that “[the] primary aspect is that pictures often say what words cannot, and they can often do it quicker than words can.” However his insights to the mindset of Generation Y learners. Steranko believes that “[there] is a growing attitude amongst young people—and perhaps it goes beyond that—that devalues and deemphasizes the importance of text and underscores images. A balance between the two would be the ideal. I think that if we can teach our children and adults with more speed, less effort, and more clarity, it would be a good thing” March.

Weaknesses of the Graphic Narrative Art Form

The key weaknesses of the graphic narrative/sequential art medium deal with their physical limitations and public perceptions.

Everyone agrees that graphic textbooks cannot convey as much pure text in the same amount of space as a traditional textbook. Jared Gardner refers to this as the
inefficiency of the form” because “comics as a form are all about concentration, condensation, selection” (J. Gardner, personal communication, February 10, 2013). In academia where “content is king” graphic textbooks cannot compete, and even the move to a digital platform is not the answer, although that will add to their strength. What graphic textbooks can do well, especially for introductory-level classes is that they “hit on key points that will resonate with the reader, and be retained more completely” (M. Schultz, personal communication, February 5, 2013). Additionally, graphic narratives are hugely labor-intensive and take a long time to make. “Textbooks have a long lead-time anyway, but if you want to get all the facts that a typical textbook might need to get in and do it all in comics form, that’s going to take a tremendous effort on the part of the artist because it’s hard work to draw page after page of comics” (J. Ottaviani, personal communication, February 11, 2013). Finally, one last problem with their physicality is that, since they are illustrated, new advances in understanding which require updating the books becomes problematic if the art has to be redrawn.

Zander Cannon believes that there is a perception that academic authority is lost when cartoon characters are used in graphic textbooks (Z. Cannon, personal communication, March 11, 2013). Part of that perception is not unearned as the stories in some of the Manga Guide textbooks were viewed as being “contrived, and not entertaining or interesting” (W. Johnston, personal communication, March 17, 2013). There is, however, a bias, a prejudice towards the medium that endures regardless of the qualitative and quantitative studies describing their worth as a pedagogical tool. “Comics as a teaching tool, comics just as a medium are still largely looked upon as a bastard step-child. In the worst cases the stereotype of the funny book for the backwards, illiterate kid
persists as opposed to the medium being considered a legitimate way of expressing ideas, stories, information, and content” (T. Brevoort, personal communication, January 25, 2013). At his own institution, Juniata College, Jay Hosler was approached by their marketing department to produce a comic strip designed as an ad for inclusion in high school newspapers. The end result was that a focus group reviewing the ad determined that “there was [a] perception that this format indicated a lack of intellectual rigor on the part of the institution” (J. Hosler, personal communication, February 18, 2013). Though we may solve many of the physical problems associated with graphic textbooks after they move to a digital platform it seems that solving problems with perception may still be a generation or two away.

Adaptability of the Graphic Narrative Art Form

All of the interviewees felt that it is possible to adapt the graphic narrative/sequential art medium for most if not all disciplines. What we have witnessed so far is that most of the graphic textbooks that have been produced are in the areas of business, the sciences, and math. Although it seems strange that the more analytical subjects have the greater amount of graphic textbooks associated with them it should be pointed out that science textbooks have always been heavily illustrated, so the “jump” from a heavily-illustrated textbook to a graphic textbook is really no more than a “shuffle.” As for everything else outside of the sciences and math, “[almost] everything has some visual component to it, and whether it’s simple graphics of graphs, and charts, or whether it’s a dramatization of what is being talked about, whatever the case may be, […] virtually any subject can be made more inviting, and more engaging, and easier to
digest in a pictorial form then in simply in a prose form” (T. Brevoort, personal communication, January 25, 2013).

Some of the suggested areas of study for which the interviewees felt had the greatest potential were history (W. Johnston, personal communication, March 17, 2013), film theory (J. Gardner, personal communication, February 10, 2013), popular culture studies (J. Gardner, personal communication, February 10, 2013), literature (Hosler), and biographies. “I think the only way graphic novels will make inroads into other disciplines is when faculty can find ones that are useful for their classes. That sounds highly utilitarian, but I think that’s the key. [...] At some level the onus is on the creators to find places where their interests align with needs in teaching” (J. Hosler, personal communication, February 18, 2013).

Recommendations to Academicians

Educators who want to create their own graphic narratives need to become deeply familiar with how the medium works. To begin with, would-be graphic narrative authors should obtain and read Will Eisner’s *Comics and Sequential Art* (1985), and Scott McCloud’s two books, *Understanding Comics: The Invisible Art* (1993), and *Making Comics: Storytelling Secrets of Comics, Manga and Graphic Novels* (2006). The best way for me to illustrate the vast amount of concerns facing educators who wish to embark on a graphic narrative textbook project is to share the advice I received from several industry professionals verbatim.
“Don’t approach the sequential art medium lightly. It’s a medium with unique, specific methods and techniques that need to be understood to convey information successfully” (M. Schultz, personal communication, February 5, 2013).

“[Graphic narratives are a] slow, grinding form to produce, and so these [artists] think about it deeply as they make it. […] You need somebody who is versed in what comics can do that no other form of communication can do, and that means working with, ideally, a very experienced cartoonist, which is not always easy to find” (J. Gardner, personal communication, February 10, 2013).

“Work with a cartoonist who shares an interest in their subject matter. I think that would be enormously helpful” (C. McGurk, personal communication, February 19, 2013).

“Doing graphic narratives is a hell of a lot of work, so you have to be pretty serious about it” (K. Thompson, personal communication, February 4, 2013).

“First of all, find a good editor or project director for creating that material […] someone who can edit the writing so it is clear because the writing has to be very concise and very specific. It takes a skilled writer as much as it’s going to take a skilled artist” (S. Saffel, personal communication, March 9, 2013).

“As an educator, first and foremost, I believe the material has to be fact based. If it’s science there can’t be any wiggle-room on the science that’s presented. More importantly, from a format perspective, the story has to be compelling and interesting. It has to be something that you would read outside of your class and think, ‘Oh, this is a really exciting story, and I want to read it’” (W. Johnston, personal communication, March 17, 2013).

“I think they have to leverage what comics does well, and think about how to get your ideas across in ways that are not done well in just prose. So they need to think about the visualization of a metaphor, or the visualization of an idea. They also have to figure out how to take information and distill it down to a visual, or a graphic, or a timeline, or something like that” (W. Johnston, personal communication, March 9, 2013).

“Artists are not ‘pairs of hands.’ Artists are not empty vessels waiting to be filled. I think the biggest hurdle for academic professionals wanting to enter the graphic novel field is, unless they are a Jay Hosler who can write and draw his own work, they have to wrestle through all the professional, ethical, aesthetic, and mercantile issues that are related to having to collaborate with another creator on a given work” (S. Bissette, personal communication, February 9, 2013).
Producing graphic narratives is a collaborative process, and many of these professionals pointed out several of the major problems associated in creating them. Graphic narratives are a specialized, unique medium, and just as one would not assume they can make a great documentary from watching several documentaries by Ken Burns, the same logic applies for graphic narratives; graphic narratives take years to produce, and require a lot of commitment on the part of creators; and graphic narratives are a visual-first medium, which means the text, while fact-based, needs to be succinct and let the illustrations carry much of the information.

In terms of the collaborative process, Stephen Bissette’s concerns for artists, which are based on his thirty years of working in the industry, are important for educators to understand.

“It is hard to keep food on the table and a roof over your head for 5-10 years while you complete a graphic novel. And who’s going to own it? Who’s the primary author? Unless you’re ready to enter a creative relationship with an artist where it’s a 50/50 split and it’s co-owned, and all the business and ethical decisions follow from that, then you are putting that artist in the position of being your employee, and if that person is your employee then you pay a living wage. What kind of contract are you going to put into place? What’s the long-term nature of the relationship if the work stays in print? […]

“I don’t think there are any aesthetic hurdles in terms of academics doing graphic novels. I think that is something that can only be addressed: project-by-project, creator-by-creator, partnership-by-partnership. I think the much bigger hurdle is academics coming in with no grasp what-so-ever of what’s truly involved with doing one of these, and what’s truly involved with the working relationships and the finances associated with these. Adding to that since most people in the academic profession publish or perish they don’t own their work. Most academic publishers are work-for-hire where you do the work and you don’t own it. It is owned by the academic press” (S. Bissette, personal communication, February 9, 2013).
Graphic narrative textbooks are not a fad. Producing graphic narrative textbooks is not as easy as writing a prose textbook, and only those who are willing to dedicate several years of their lives should embark on creating one.

The Co-Authorship Model

It is vitally important to guarantee the academic validity of the content in graphic narrative textbooks if they are to become credible sources of information for teaching. To that end it is necessary for academicians to be responsible for the academic rigor of their work prior to artists becoming involved with the content. However, writing graphic narratives is a skill set many academicians do not have the time, luxury, or ability to master. Since traditional graphic narrative writer and artists do not have the academic knowledge necessary to produce graphic narrative textbooks I proposed the following solutions. 1) Either the academician can work with a graphic narrative writer who will adapt the text into a script for the artist(s); or 2) The academician can work with a seasoned professional graphic narrative artist who can adapt the script for print. All of the interviewees felt that these were the best solutions for developing credible graphic narrative textbooks for use in colleges and universities.

“I think the academic needs to realize that whatever they produce in terms of what they think this textbook needs is going to require a level of distillation that will seem at first impossible, but that’s the magic of the form, and those who are adept in the form know it has the ability to convey remarkable amounts of information, and spark a remarkable amount of cognitive work on the part of the reader with very few elements” (J. Gardner, personal communication, February 10, 2013)

“I would encourage it because I think that those who teach for a living have a specialized viewpoint, a very idiosyncratic one that puts them in a special place. They understand more, we hope, how information is perceived and analyzed, and using that special knowledge gives them a special edge to do work that is much
more easily assimilated than people who are not in that profession. I think that
that insight might be more important than just knowing the material” (J. Steranko,
personal communication, February 4, 2013).

“I think for an academic working with a professional there first has to be a good
working relationship; and understanding of the feedback loop, so, in other words,
it can’t work that the academic writes the book and expects it to be illustrated
because that’s not going to be a good graphic novel. There has to be feedback
synergy between the writer and the artists. […] The feedback loop between the
writer and artist is critical, and you have to listen to the artist, listen to the visual
storyteller when they tell you things don’t work, and that’s an important thing to
be ready for” (J. Hosler, personal communication, February 18, 2013)

“The art of comic book writing is certainly a craft and quite likely not something
that academicians are going to go to naturally. I suspect that in many cases they
will have to go to some type of collaboration. The fact is, even outside of the
question of academics, when you talk to cartoonists they are going to tell you
they’ll be collaborating with a writer who has no experience in comics per se, a
prose writer, and inevitably there are problems because the writer doesn’t
understand the mechanics of it. The simplest and most obvious case being
instances were writers will write and say: “In this panel this happens, and this
happens, and this happens, and this happens,” not realizing that in a graphic
narrative you have to break it down; you can’t have four things happening at
once. That is a trap that I think academics would fall into” (K. Thompson,
personal communication, February 4, 2013).

“That would be absolutely necessary because you would have to assure the
science, the academic content. So you would have to have an academician in the
field as a co-author, or a major consultant. I don’t know that people who are not
trained in genetics could produce a graphic textbook with the correct explanations
or concepts” (W. Johnston, personal communication, March 17, 2013).

All of the interviewees felt that a co-authorship model that pairs academicians
with graphic narrative creators is the best possible solution for developing educational
graphic novels and graphic textbooks.
The Potential for Graphic Narratives in Education

There are two aspects of educational graphic narratives that showcase their strengths as a pedagogical tool. The first is that they are an excellent scaffolding tool, and the second is that they are perfectly suited for Problem Based Learning. Furthermore, and because textbooks are quickly moving to digital platforms, it is necessary to understand how these graphic eTextbooks can educate students via a digital delivery system, and the potential problems therein.

Graphic Narratives as a Scaffolding Tool

In addition to entertainment comic stories, Will Eisner also wrote and illustrated both technical instruction comics and attitudinal instruction comics. Essentially, these are straightforward illustrated instruction manuals, and sequential art dramatizations of events. Perhaps Eisner’s greatest contribution to attitudinal instruction comics is The Department of the Army’s P*S, The Preventive Maintenance Monthly magazine. I do not make that claim casually, and I do not dismiss the educational impact of Comics and Sequential Art, but how many injuries were prevented, or lives saved, through the efforts of the creators who contributed to P*S magazine? We will never know, yet that lack of evidence is an incredible validation of the power of the sequential art medium. In the case of P*S magazine, “Preventative” had a double meaning.

Scaffolding is a means by which a teacher (physical or illustrated) provides a student with all the information and support they need to learn a lesson, or perform a task. By that definition all graphic textbooks are Scaffolding Tools. Instructional Scaffolding is a strategy-based concept originally proposed by developmental psychologist, Lev Semyonovich Vygotsky (1896–1934). Vygotsky’s theory was based on what he referred
to as the *Zone of Proximal Development* (ZPD). This Zone is the difference between what students can do unaided, and what they can accomplish with the aid of an instructor (Berk & Winsler, 1995, pp. 27-28). As tasks are accomplished knowledge is assimilated and then applied to newer, more complex tasks. The ultimate goal is to help students develop problem-solving strategies, so they can apply what they have learned in order to become independent critical thinkers. Unfortunately, our society is not designed for individualized tutoring, but teachers still find ways of integrating scaffolding strategies into their lesson plans. However, the “Chorus” in graphic textbooks takes the place of the teacher/tutor, and guides the student’s education by doing what all graphic narratives do best—by allowing knowledge to unfold and reveal itself at the reader’s pace.

Attitudinal instruction comics are all about “slaying dragons.” The hero (reader) is faced with a challenge (problem), and embarks on a quest to find the solution (answer). Along the way the hero is joined by a mentor and maybe a few friends (Chorus) who help the hero with quest. Attitudinal instructional comics are what Joseph Campbell (1904–1987) refers to as *monomyths*, or, *the hero’s journey*. Sometimes the reader is given a doppelgänger; someone to relate to in the story. In theater this is referred to as *transpositionality* (Chew & Stead, 1999, p. 108). The doppelgänger is created in order to evoke a sympathetic bond with the reader. When all we had was oral tradition, or radio dramas like *The Shadow*, the relationship between the hero and the listener was entirely in the listener’s imagination. With comics; however, the physicality of the hero is concretized to whatever degree of abstraction the illustrator(s) decides is best in order to tell the story. The less detailed a doppelgänger is; the more iconic it is; the more universally relatable it is. The concept is referred to as *Amplification Through*
Simplification, and it was explained in great detail by Scott McCloud in his seminal work, *Understanding Comics: The Invisible Art* (McCloud, 1993, p. 30). This concept is best exemplified by the accessibility of the characters in the comic strip *Peanuts* by Charles M. Schulz.

**Problem Based Learning**

Problem Based Learning (PBL) was developed by Howard S. Barrows (1928–2011) in the late 1960s. PBL is “an instructional (and curricular) learner-centered approach that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem” (Savery, 2006, p. 12). Simply put, PBL is a form of scaffolding tool in which the teacher (called a tutor in PBL) facilitates/guides the students through a series of complex problem-solving tasks and self-reflection. PBL is a powerful instructional approach, and has become the model for education at several institutions such as the University of Delaware (http://www.udel.edu/inst/). Queen Mary University in London uses PBL in their School of Engineering and Materials Science (http://www.sems.qmul.ac.uk/pbl/), and employs *planned problem scenarios* in their curriculum. Although they are acted out, planned problem scenarios, if they were illustrated, would be graphic narratives. How PBL varies from graphic textbooks is that PBL is, primarily, group-based learning. While the Chorus can substitute for that to a degree, when utilized as part of a classroom setting where a real teacher/tutor is present, graphic textbooks become an even more powerful educational tool.
Incorporating problem-solving strategies into graphic textbooks all depends on the skill of the creators. Though there is no one-size-fits-all answer to that question, here are some problem-solving strategies to consider when developing graphic textbooks. Remember, with graphic textbooks, and especially graphic eTextbooks, the students can go outside of the narrative (suspend the narrative) to find the answers they are seeking in either the real or digital world. The following list is by no means exhaustive, and is simply meant to help educators form ideas about the kinds of strategies that can be woven into a graphic textbook narrative. A more comprehensive list can be found at Over Fifty Problem Solving Strategies Explained by John Malouff, Ph.D., J.D., found on the University on New England’s website (http://www.une.edu.au/bcss/psychology/john-malouff/problem-solving.php).

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<tr>
<th>Abstraction</th>
<th>Analogy</th>
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<td>Divide and conquer</td>
<td>Draw a picture or graph</td>
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<td>Hypothesis testing</td>
<td>Lateral thinking</td>
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<tr>
<td>Look for patterns</td>
<td>Proof</td>
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<td>Reduction</td>
<td>Root cause analysis</td>
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Developing Digital Educational Graphic Narratives

Aspect Ratios

Currently, converting comic books to a digital platform has meant simply slapping the pages on the screen in situ even though the viewing space is smaller than the print version. The aspect ratio (the ratio of width-to-height) of print comic books directly
impacts how they are viewed digitally. Modern comic books measure 6.625" x 10.25", which means they have an aspect ratio of 1:55. Kindle Fire HD 8.9, Samsung Galaxy Tab 7.7, and Google Nexus 7 all have an aspect ratio of 1:6, which is very close to that of comic books. Even though the iPad 3 has better resolution, its aspect ratio is 1:33, which means comic books viewed on the iPad screen have extra dead space on the sides. Aesthetically, the iPad loses out on single pages, but it makes up for it on double-page spreads where the aspect ratio is 1:29 (albeit the pages are even smaller). Designing artwork for digital viewing becomes even more “interesting” when publishers, such as DC Comics, make exclusive contracts for certain books with specific tablet manufacturers (Marvel Comics’ exclusive is with one distributor, but across multiple platforms). What is important to understand about aspect ratios is not only how they affect the art, but that you need to ask the publisher what devices the eTextbook will be read on, so you can design pages that take full advantage of the view screen.

Page Design

Sequential artists should realize that there is a tremendous amount of flexibility available to them when designing textbooks exclusively for digital platforms. The first question artists need to ask the writing team (the subject author, and the graphic narrative writer) is, “Do you want this designed in a portrait or landscape format?” Flipping the orientation of a tablet is easy, but it becomes annoying very quickly, and for educational texts it would certainly be a distraction. I will not say that it should never be done, but selecting one primary orientation from the start would be best. Most of the eTextbooks I have seen are landscape designed, but that is probably because they were initially created
with desktop or laptop monitors in mind (and for 2-page spread print versions too). The creative team needs to determine from the beginning what the key visuals are, and what is the best way to incorporate them into the story.

As I mentioned previously, I believe the medium will need to focus less on traditional page design and more on screen/panel design. Before the mid-1960s, original comic book art pages measured 14” x 21.” In an effort to save money on paper, the page size for original art was reduced to 11” x 16” (or 11” x 17”). An interesting consequence of reducing the paper size meant that now the entire page fit comfortably within the artist’s peripheral vision. Though long-established, dynamic artists like Jack Kirby had a harder time adapting their style to the smaller (constrained) size other artists, such as Neal Adams and Jim Steranko, began experimenting with innovative page layouts. However, smaller and smaller screen sizes have a direct impact on visual storytelling, and the way sequential artists have designed pages since the 1960s has to change. Certainly, tablets are better vehicles for storytelling than their smaller counterparts. While I would never recommend designing graphic eTextbooks for phones, I would like to see them used in conjunction with tablets for storing and sharing digital notepads. That way if you are on a bus or walking to class you can simply study the notes for your test on your phone. The most important aspect of all graphic eTextbooks that artists need to realize is that above all else the storytelling must be clear, so there is no question about the information being taught.
Native vs. Non-Native Sequential Art Readers

Native and non-native readers are my terms for people who have grown up reading comic books, and those that have not. I have been “reading” comic books since I was five years old, so, initially, I had a hard time understanding why readers new to the medium had trouble following the panel-to-panel continuity. Even reading the more elaborately designed pages was, for me, intuitive. Understanding sequential art is similar to understanding a new language—it is a learned skill (McCloud, 2009). The problem; however, was how do we get older readers to “read” graphic narratives, and enjoy the experience.

Apps, such as the one provided by Comixology, include a Guided View option that navigates the reader through the eComic panel-by-panel. I have heard Native readers express that they have a problem with this for aesthetic reasons. The argument is that creators design a page to be experienced as a single visual, so chopping it up into digestible bits has the same appeal as watching a film adapted to a full screen television via pan-and-scan editing. How much of this resistance is aesthetic, and how much is due to the tech I do not know, but for these people I will simply suggest that they only view the eComic page-by-page. Guided View, in my opinion, is a great boon to non-native readers because it is a shortcut to learning the language of sequential art. Eventually, non-native readers will become “fluent” in reading sequential art, so anything that helps in making the transition effortless and more enjoyable is a plus.
The Need for Coloring Graphic eTextbooks

Since the cost of printing is no longer a problem graphic eTextbooks need to be colored in order to take full advantage of the medium. I will agree that some projects require the aesthetic values that only black & white illustrations provide, and I see no problem with that; however, especially when dealing with the scientific exploration of the physical world, the educational advantage for depicting a colorful Monarch butterfly, for example, vastly outweighs any depictions of its colorless counterpart. Yes, there is an initial up front cost for coloring, but 1) they will be more appealing, and 2) publishers will be competing against other, well-designed, colorful traditional eTextbooks.

A Word About Digital Art

One downside to Digital Art for artists is that, once completed, there is no physical copy to sell. Unless artists begin with a physical piece of art, scan it, and finish it digitally, or begin digitally, print it, and then finish it they have nothing physical to show for their efforts. This adds a new wrinkle to the legacy of “starving artists.” Another downside is that editors, art directors, and designers love digital art because they can manipulate it effortlessly. They can recolor it, warp it, wrap it, and/or crop it any way they want in order for it to meet the needs of the commodity it is selling. And while this is essentially the way commercial art has always been handled, prior to the digital age art changes had almost always been handled by the artist. At the very least they were consulted. The digital age has brought with it a new level of disrespect towards commercial artists. Many fail to realize that it is the creative genius of the artist that is being exploited, and not just a piece of art. All Art, after all, is an intellectual property.
The Dark Side of Digital

In 2007 alone, 1,288 x 1018 bits, or 161 billion gigabytes of digital content were created, stored, and replicated around the world. In lay terms, that’s 3 million times the amount of information in all the books ever written, or twelve stacks of books reaching from the Earth to the Sun, or six tons of books for every living person. It would require 2 billion of the highest-capacity iPods to store all of that information.

—John Palfrey and Urs Gasser, *Born Digital*, 185

That is a lot of data. The idea that we are saving every *Twitter* tweet seems narcissistic. According to Frida Ghitis (2012), Google has kept every email its users have ever sent or received, along with every chat using Google Talk, and every conversation using Google Voice. From your calendar to your contact list, Google saves it all, and “can even track searches on your computer when you're not logged in for up to six months” (Ghitis, 2012). That is a scary thought. Unfortunately, they are not the only ones and the whole idea of your entire cyber life being available to “who knows who” has such an air of “Big Brotherliness” to it. With all that data waiting to be accessed there is a lot of potential for bad things to happen, which is odd for a company such as Google whose motto is “do no evil.” In the digital landscape there is neither a past nor a future, since all information is accessed simultaneously. That means the sins of the past not only never go away—they are always in the present. So, other than going completely offline, what is the answer?

The Right to Be Forgotten

In January 2013, the European Commission for Justice, Fundamental Rights, and Citizenship proposed a privacy reform called, “The Right to Be Forgotten” [le droit à
l’oubli—or the “right of oblivion”] (Rosen, 2012). It is the digital equivalent to, “What happens in Vegas, stays in Vegas.” It is based on the belief that once a criminal has served their time, and has been rehabilitated; the slate is wiped clean, which is a basic tenet of most world religions. There are certain free speech issues associated with this law, which go beyond the scope of this dissertation, but I agree with the idea that if I delete personal data from the digital landscape it should be gone forever, and not saved forever. So, how does this figure into the topic of graphic eTextbooks? Quite simply, it has to do with the “cloud” and who has access to information.

The Cloud

“Cloud computing” is simply where multiple devices simultaneously share the same application platform over a network (like the Internet). Back when I was a computer programmer everything was written, stored, and run on a mainframe, and all of the information was entered through a “dumb” terminal, which was nothing more than a monitor and keyboard. While I was creating my dissertation blog I could see that most of the people were using Foxfire (35%), Explorer (25%), or Safari (21%) for their web browser, while 63% were using Windows PC compared to 28% on a Mac. Most viewers were from the United States, followed by Germany, Russia, and other Western European countries; however, there had been visits from Brazil, Australia, Canada, India, Vietnam, and South Africa. How did I know all this? I knew it because Google owns Blogspot, and collects all the data for me.

The point is, as with my blog, digital textbooks are on a cloud somewhere, and students need to access them. Granted, they may have a pdf of a book or two saved on
some device, but there are copyright problems associated with that. One of the downsides to digital publishing that still persists is that piracy is too easy. You only have to look at the music industry and Napster to see the legal war that transpired from illegal sharing of music protected by international copyright laws. There is a fine line between free access to all information, and the creators of graphic eTextbooks getting paid their fair share. After all, whether it is physical or digital, the contents of a book are still the intellectual property of its creator(s). [Note: As of October 5, 2012, Google settled a seven-year legal battle with McGraw-Hill, Pearson Education, Penguin, John Wiley & Sons, and Simon & Schuster over illegally digitizing their books (Webb, 2012)]. If creators do not get paid for their efforts then there is no incentive to create more books. Digital Restriction Management codes (which restrict digital textbooks to only one device) are too restrictive. One solution that I prefer is for colleges and universities to purchase site-licenses, thus making eTextbooks accessible to students through their libraries.

While students would not own eTextbooks the eNotes that they take should be theirs indefinitely. Peter Meyers suggested all tablets come with styluses, the ability to take notes, or highlight passages, and the ability to provide a “passage-quoting bulletin board” (Meyers, 2011). To this list Alexandra Samuel adds collaborative annotating, persona management (privacy settings), social note sharing (access to social media from within the eBook), and the ability to add visuals to the notes (Samuel, 2011). The Kno tablet is already doing most of this. In fact, Kno tablets also allow social sharing of notes, so if you miss a class your friend’s notes will immediately show up in your eTextbook (http://www.kno.com/features). This “tablet” is actually a full-bore computer, so reading, note-taking, surfing the web, social networking—namely, multi-tasking—is all available
to the user in one device. Presently, prices are steep ($900 for the double-screen version, & $600 for the single), and the duel-screen model weighs 5.6 pounds, but those should both come down if they want to stay competitive. However, I fully expect all of Kno’s “bells & whistles” to be in the next iPad rollout.

“Dark Editing”

Another problem with digital content is reliability. What no one ever suspected was that I have made changes to every dissertation blog entry I posted. Most changes were minor ones such as adding links, and adding highlights, but I have also added and deleted text. On one occasion I changed the name I had originally referenced to “Charles Schulz” because it was a better choice for illustrating my point. I doubt if anyone knows what the original name was, and since the change was made within an hour of the original posting, it is highly unlikely there is a backup of it anywhere. I refer to this as “Dark Editing.” How do we validate the material in a digital landscape where there is only the present? Without a hard copy as proof of the past, how do we know the digital information we are quoting as a source will be the same tomorrow as it is today? To further illustrate the point, a friend of mine noticed that in a digital edition of *Moby Dick* several chapters were missing, and nowhere in the indicia, or on the title page, or on the website did it say it was an edited or abridged edition. “Truth” has always been subjective, but in the digital age it is also *ephemeral*. After all, what is a cloud anyway, but an amorphous, ever-changing wisp that eventually disappears completely?
Digital Natives and the Gatekeepers

For *Digital Natives*, those born in 1980 and afterwards, the digital landscape is an integral part of their lives. For the rest of us, the *Digital Immigrants*, we can remember a time when phones had cords, and computer screens were black & white. While preparing on of my blog entries I watched the first two episodes of the television show, *Revolution*, which takes place fifteen years after all the power goes out globally. One Internet entrepreneur laments his loss of wealth, and a mother still carries around her cell phone because locked inside are pictures of her long-gone children. At no time did anyone mention the loss of all that knowledge, but for some reason they want you to believe that without electricity we would be knocked back to living in Colonial times. One of the staples of spy shows of the past several decades has been the electromagnetic bomb. Explode one within a major capital city, and that nation’s infrastructure and economy collapses. It is entertainment, so it is meant to be dramatic; however, the real threat to Digital Natives and Digital Immigrants is access, and the real power lies in the hands of the *Gatekeepers*.

We know that it is possible for countries to block the Internet, or portions of it. The euphemism is called “filtering,” and it is the same principle as software controls parents put on their children’s computers, but on a larger scale. The greater concern is that, under the guise of “protecting its citizens” any country can frame the narrative for its people, especially those who never travel abroad. Not only that, but the Gatekeepers can designate specifically what knowledge a person may have access to and for how long. Without physical books it is therefore easier to create a caste society where some people have access to knowledge while others are left ignorant.
Upon Reflection

Theorizing about philosophical, psychological, and neuroscientific applications in developing graphic textbooks is all well-and-good, but what is the best way to develop them? I will not begin to tell people how to write, and there are too many great books about creative writing out there for me to have anything different to add (Story by Robert McKee is one of the best). What I want to address, however, is how to develop them for the market, and for the solution to be effective it cannot be complicated.

Past is Prologue: Learning From Graphic Novels

Some people question whether or not a serialized comic that is later collected into one volume should be considered a graphic novel. Serialization is not an uncommon practice in publishing and has provided creators a means of supporting themselves while producing larger works for centuries. For example, Charles Dicken’s first novel, The Pickwick Papers (1836), was originally serialized in Bentley’s Miscellany; Tom Wolfe’s Bonfire of the Vanities (1987) first appeared in Rolling Stone magazine in 1984, and ran for twenty-four installments; while Stephen King’s The Green Mile (1996) was published as a six-part serial novel before it was collected into one volume. It can be argued that what has been acceptable in literature should also apply to graphic novels. Yes, I know I wrote that graphic novels are not literature, but it does not mean that we cannot appropriate certain elements, and apply them to this literate art form.

Many of these questions regarding format for graphic narratives fall into gray areas. If “a picture is worth a thousand words,” then how do we calculate the “word”
count in a graphic novel? When is a graphic novel truly of novel length? Since there is no mutually agreed upon way around this particular enigma, the appropriation of literary vernacular, such as short story, novelette, novella, and novel, needs to be addressed and adapted—with provisions. Science Fiction & Fantasy Writers of America, the professional organization that administrates the Nebula Awards, defines these literary terms on their website as follows (http://www.sfwa.org/nebula-awards/rules/):

- Short Story: less than 7,500 words;
- Novelette: at least 7,500 words but less than 17,500 words;
- Novella: at least 17,500 words but less than 40,000 words
- Novel: 40,000 words or more.

In terms of storytelling there is no agreement on a balance between words and pictures for graphic narratives, and there should never be, because revealing the story drives both. Certainly, some creators can do more with less pages than others, and a few silent panels (a wordless sequence) can be filled with emotional and/or connotative meanings that would take pages in a text-only story, so no matter where we draw the line it will be an arbitrary one. Legendary comic book creator and graphic novelist, Jim Steranko believes that a “true” graphic novel needs to be at least 100 pages (J. Steranko, personal communication, July 7, 2010). While 100 pages is an easy number to remember, it is also very calculated.

Comic books have traditionally been printed in 16-page sections called signatures. The standard comic book pamphlet is 32 pages, or two signatures. This is followed by books with pages counts of 48, 64, and 96—just four pages short of
Steranko’s magic number. According to Steranko, a graphic short story would range from 1–49 pages, a graphic novella would be between 50–99 pages, and a graphic novel would be 100 pages or more. Though some consider Gil Kane and Archie Goodwin’s 1968 black-and-white comic magazine *His Name is...Savage* a graphic novel, at only forty pages it is, at best, a graphic short story.

There will always be illustrated books that blur the line, that make us reassess just what is possible with this art form. How do we re/classify books such as James Gurney’s (1958–) *Dinotopia* (1992), Jim Steranko’s *Chandler: Red Tide* (1976), David Michael Wieger and Terryl Whitlatch’s (1961–) *The Katurran Odyssey* (2004), Kyle Baker’s (1965–) *Nat Turner* (2008), Brian Selznick’s (1966–) *The Invention of Hugo Caret* (2007), or David Wiesner’s (1956–) *Sector 7* (1999) and *Flotsam* (2006)? Whether you call them illustrated stories, visual novels, picture books, graphic novels, or long-format comic books, they all attempt to tell stories using pictures.

Creating Graphic eTextbooks

It took Jay Hosler four years to write and illustrate *Optical Allusions* (2008). Hosler’s biggest concern is that “the process [for creating graphic textbooks] is labor intensive and very messy/ugly.” (Hosler, 2012) For Mark Schultz, who is not a geneticist, writing *The Stuff of Life: A Graphic Guide to Genetics and DNA* (2009) took “forever” to research, and, if asked, would never attempt another project like it again (M. Schultz, personal communication, February 5, 2013). Graphic textbooks are time-consuming to create, and aside from Hosler and Larry Gonick, who has an MA in mathematics from Harvard, there are very few scholars who can both write and illustrate them. So, what is
the best way for going about writing graphic eTextbooks for undergraduate students, and getting them published faster? Here again, understanding that since all undergraduate textbooks will be digital within five years, I am only concerned with graphic eTextbooks.

One solution to the time-crunch problem Hosler took with *Evolution: The Story of Life on Earth* (2011). In that book, Hosler paired with the art team of Kevin Cannon, and Zander Cannon. The writing for *Evolution* took Hosler a year; however, the artwork was begun in parallel; while he was still writing it. The total amount of time it took for *Evolution* to go from inception to publication was approximately two years. This method shortened the production time tremendously, but there are not that many scholars who understand the sequential art medium to the extent that they can write a lucid, readable, and, yes, entertaining graphic eTextbook. So, what is another solution to this problem?

What About the Alphabet Soup?

In my opinion, *Stuff of Life* was a misappropriation of Schultz’s time and talent. Whatever monetary compensation Schultz received from that book probably did not make up for what he could have earned doing other projects. There are better ways to utilize the talents of graphic narrative writers in order to create well-researched graphic eTextbooks that can be used in introductory college classes. The best way, I believe, is to pair a graphic narrative writer with an expert on the subject. Note that I said “expert,” and not “professor.” Sometimes the alphabet soup after a person’s name does not matter when it comes to knowledge of a subject, and lived experience. For example, there is a dynamic local high school history teacher who has been teaching for thirty-six years. For creating graphic eTextbooks, ones that are intended to mimic the classroom experience, I would
much rather ask a learned expert in the field to help write and design the book rather than someone with a newly-printed Ph.D. Pairing an expert (who can do the initial research and writing) with a graphic narrative writer or seasoned artist (who can adapt the text for the artist/s) utilizes the time and talents of the creators more efficiently. Essentially, for the graphic narrative writer/artist, this is no different from adapting a classic novel.

In terms of academic rigor, all graphic eTextbooks that are intended for undergraduate students must be peer reviewed by at least two reviewers selected by the editor. The identity of the peer reviewers must not be revealed to the expert (subject author), and all notes/corrections must be sent through the editor. The review and correction process must be completed prior to the graphic narrative writer, or seasoned artist ever receiving the manuscript. There is a prejudice towards the graphic narrative art form that, unfortunately, persists. Because of this, the credibility of the text must never be an issue. Granted, errors may occur, especially when new research and information comes to light, but the wonderful thing about digital textbooks is that they can be easily updated. Only by insuring academic credibility can graphic eTextbooks be accepted for undergraduate study.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FUTURE RESEARCH

Sequential art is a “show-don’t-tell” medium. Since I am championing this medium as a teaching tool it seemed appropriate to use sequential art in order to summarize the key elements of my dissertation in the form of a graphic narrative textbook chapter. Basically, it was time for me to “put up, or shut up.” The art for each page was developed to fit an iPad screen, and since I am trying to mimic that visual experience for this dissertation I created this iPad in Photoshop, based on, but not copied from, a real iPad. With few exceptions (the book covers, and article pages on page #2) many of the visuals were created by me. For example: while the page from the book *Feynman* is an actual page my manipulation of it on pages #4 and #5 is my own design; the SmartBoard (pages #5 and #6) was created in Photoshop but based on an actual SmartBoard; I applied multiple travel stickers to the steamer trunk on page #8 (and distressed them); the computer (page #8) was built by combining photos of an old typewriter and an old television; the drive-in theater (page #12) is a photo montage; and even the “Smiley Faces” were created directly in Photoshop. This is a very arts-based presentation showcasing my skills as a graphic narrative writer, visual artist, graphic designer, and digital photo manipulator all in service of teaching higher-level concepts through the use of a visual art medium.
As with all graphic narratives the key is to know when to let the images speak for themselves and carry the story. On page #1, for example, I introduce a version of my Purpose Statement, and present it with the use of a modified title and dialogue (word) balloon. However, the visuals on the page tell a parallel story. The visuals, once decoded, are a visual biography of myself. This is where I work at home, and while it is a lot less cluttered in the illustration all the essentials are here. Some of the elements are obvious. I am drinking from a Pittsburgh Steelers mug, which is an indication of where I am from. The books I have written are sitting on top of my printer, and the IPPY Award I received is behind the router. Some elements are a bit more subtle. My clothing is casual because I want the reader to be relaxed, and rather than fill the area with a flat color I chose to scan my own shirt and jeans, which makes the art all the more personal. The Graphic Narrative Model on my monitor foreshadows its discussion on page #3. Some elements are decipherable only if you know me very well. My illustration of my boys is on the card on top of the computer. I was a comic book inker, and one of my tryout pages for a story is on the iPad. The first character I ever drew was Snoopy. While these elements are not part of the main storyline, they are, as stated previously, in parallel to the main story since they are part of my résumé. They act in the same fashion as an author’s bio at the end of an article, and if this were an actual iPad, all the reader would have to do is tap on any of these elements and a text box or hyperlink would lead them to a more detailed explanation.

The graphic narrative portion of Chapter 5, follows a fairly straight-forward summary of the dissertation: Purpose Statement (page #1); background to the study (pages #2-3); how graphic narratives relay information and related theories associated
with cognitive and visual learning skills (pages #3-6); conclusions and recommendations (page #7); applying learned information and proposing how graphic narratives can be used as teaching tools (pages #7-12); and closing statement (page #12).

It should be noted that the graphic narrative portion of Chapter 5 was developed exclusively for digital media and not for print beyond inclusion in this dissertation. Due to the nature of digital media being presented as a RGB “back lit” image, and not a CMYK opaque image, the colors on these printed pages appear darker. Also, since some colors viewed on a screen do not have a direct 1-to-1 print equivalent there was a color shift that was unavoidable. After this dissertation is approved, a pdf of the graphic narrative portion of Chapter 5 will be available to all readers as a free downloadable from the Graphic Textbooks blog.
There are qualitative reports and testimonials regarding the use of comics in the classroom going back over seventy-five years, and if you google: comics in the classroom as an introduction to narrative structure

You will have over 30 million hits to choose from.

For those of you who prefer a more quantitative approach, there are two recent studies conducted in college classrooms by Nigro and Brunelle (2012) and Smith, Randolph-Seng, and Allenby (2003).

Both studies showed that students not only developed a more positive attitude towards learning the material, but that the visuals in the graphic textbooks allowed students to integrate and apply the material more effectively.

These studies concluded that, while further research is needed, graphic narratives are an underutilized pedagogical tool.

Curiously, most of the graphic textbooks that can be used for undergraduate students are in math, business, and the sciences. So why do the more quantitative fields have the most graphic narratives? Perhaps it is because textbooks in these fields have traditionally been heavily illustrated—meaning for them the “jump” from an illustrated textbook to a graphic textbook is no more than a “shuffle.”

There is one very important difference between graphic novels and graphic textbooks that we must always remember: while the purpose of a graphic novel is to tell a good story, the purpose of a graphic textbook is to teach.

The strengths for using graphic textbooks for teaching are that they offer different ways of learning information, which is what makes them excellent multi-modal tools. They also provide a framework (chunking) for learning that allows students to become independent, critical thinkers.

**So what would an educational graphic novel or graphic textbook look like?**

**Well, like this:**

**Equal parts writer (script), artist (illustrations), and art form (history) interlock with the art of storytelling (narratology) to create a graphic narrative.** And for educational graphic narratives, it all fits in a bubble of teaching (pedagogy).

**Possibly the most impressive aspect of graphic textbooks is how they engage students.**

**Students feel that they are part of the narrative because the characters in the stories are either relatable or they act like a private tutor...**

**...and when graphic textbooks eventually migrate to digital media, they will be able to mimic the classroom environment as well.**
While Scott McCloud opposes the use of embedded videos, pop-ups, sound, and animations in digital graphic novels because they interrupt traditional narratives, “A classroom narrative is not the same as a story narrative: A classroom narrative is dynamic and constantly evolving—I refer to this as ‘expanded continuity.’”

For graphic textbooks, this is what Scott McCloud might consider a “dysfunctional nutriment.”

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**WHAT IS IT ABOUT GRAPHIC NARRATIVES THAT MAKE THEM SUCH A POWERFUL EDUCATIONAL TOOLS?**

YES, THEY'RE ENGROSSING.

YES, THEY'RE IMAGINATIV.

YES, THEY'RE ENTERTAINING.

BUT, YOU MIGHT ASK, "ISN'T THAT ALL JUST "SHOW AND TELL"?"

NO, NO, IT ISN'T. YOU SEE, WE DON'T JUST "SEE" GRAPHIC NARRATIVES.

---

PAGES ARE MADE UP OF SEVERAL PANELS, EACH PROGRESSING THE STORY. PANELS ARE THE PRIMARY BUILDING BLOCKS OF SEQUENTIAL ART, AND WHILE WE "SEE" WHOLE PAGES, WE CAN ONLY "READ" THEM ONE PANEL AT A TIME.

---

WHEN WE "READ" SEQUENTIAL ART, THE BRAIN DEIFERS INDIVIDUAL PANELS TO ATTAIN MEANING—

ESSENTIALLY, IT IS TRANSLATING A COMPLEX KINOGORAM LIKE LANGUAGE PHRASE-PHASE-PHASE.

---


UNDERSTANDING THAT THE BRAIN IS NOT INDIVIDUALLY, BUT HIGHLY COMPLEX AND INTERCONNECTED (LANGUAGE IS IN MULTIPLE AREAS FOR EXAMPLE), HERE IS A SIMPLIFIED VISUAL TO HELP DESCRIBE WHAT IS HAPPENING IN OUR HEAD:

I CALL IT [VISUAL.mapping]

BODY LANGUAGE, FACIAL EXPRESSION, SOCIAL RECOGNITION, PERSPECTIVE, DESIGN, LANGUAGE, SYMBOLIZATION, COLOR THEORY, AND EVEN WORD BALLOONS (WHICH ARE ALSO PART OF VISUAL LEARNING):

ARE ALL TAKEN APART AND DECODED?

THE BRAIN ANALYZES THE PANEL FOR CONTENT, REMEMBERS IT, PLACES IT BACK IN CONTEXT WITH ALL THE OTHER PANELS THAT HAVE COME BEFORE IT, DRAWS LOGICAL CONCLUSIONS AS TO ITS PLACE IN THE ONGOING NARRATIVE...

...AND THEN MOVES ON TO THE NEXT PANEL, WHERE THE PROCESS STARTS ALL OVER AGAIN...

AND IT ALL HAPPENS IN A MATTER OF SECONDS.

HERE'S A HINT: SEQUENTIAL ART ENGAGEMENT IS NOT SIMPLISTIC LEARNING.

DOES THIS SOUNb FAMILIAR TO YOU? IF YOU ARE AN EDUCATOR, IT SHOULD.

TAKE A LOOK AT THE BOARD, AND GUESS WHERE I'M GOING UNTIL THEN.

NOT IT??

Understanding and implementation of unique communication skills in an interactive way.

- Acquiring knowledge of facts, terms, and basic concepts within the story and involving form (parents)
- Acquiring knowledge of terminology, classification, categories, criteria, conventions, trends, and sequences
- Acquiring knowledge of both theoretical and structural, and universal and understandings as they apply to the story.
- Acquiring knowledge by organizing, comparing, translating, interpreting, explaining, giving descriptions, and expressing the main ideas
- Acquiring required knowledge, facts, techniques, and rules in a different way
- Analysis of relationships and organizational principles
- Making judgments regarding internal evidence and/or external criteria

IF YOU GUESSED "BRAIN'S THINKING!" YOU ARE CORRECT. \[ \begin{align*} \text{TEACHING SEQUENTIAL ART} \text{ REQUIRES HOTS - OR} \text{ HIGHER ORDER THINKING SKILLS} \end{align*} \]

EVALUATION
SYNTHESIS
ANALYSIS
APPLICATION
COMPREHENSION
KNOWLEDGE

- De Boor, B. B. (2005), "Teaching Sequential Art: A Form of "Creative Learning,"" which engages the critical, thinking, and problem-solving areas of the brain. This means decoding, sequential art requires much more cognitive processing than traditional texts.

- Especially for the 50% of us who are visual learners! Graphical narratives engage our brains like no other medium. They increase our involvement, stimulate creativity and imagination...

- \[ \text{AND, BECAUSE THEY ARE NON-THREATENING AND FUN, ENGAGING US TO ASK "WHY?"} \]

© Brian M. Kane 2013
There are two ways to do this, and both involve credentialed contributors—people whose academic integrity is on the line:

1) The Academic writes and illustrates their own textbook, or
2) The Academic works directly with a graphic narrative writer, or skilled sequential artist:

creating graphic narratives requires a very specific skill set. Most people cannot draw, and since they take a long time to illustrate, option #1 is not a practical alternative, but it can be very fulfilling.

Academics are versed in working with graphic narrative professionals who understand when to let the art carry the message, but a field writer usually does not mean simplifying the content; it means working with the precision of a surgeon in order to reveal the content.

It is vital that the content is peer reviewed by at least two independent credentialed academics;

Non-credentialed experts in the field can be primary writers, but the same peer review process must apply.

Translated text for foreign publications needs to be peer reviewed by an academician prior to publication. Most translators are not subject experts, and subtleties in word choice could change the meaning of a statement.

For graphic textbooks, credibility is key, and these are the best options I have found to ensure the academic rigor of their content.
Zee is a popular, in-demand economic expert—just of the ilk of Joseph Campbell, or John Goddard, or Carl Sagan, or Zee's old professor at an exclusive university.

So Zee creates a website containing a library of free downloadable materials, a store where people can purchase Zee's books, videos, and audio lectures, and a private-access blog.

Zee also designs an exclusive, graduate-level, online research course, and pays a sequential artist to illustrate a graphic "textbook" that becomes the lynchpin for that course.

What a graphic textikon because Zee knows iconic language is more universally understood and conveys information unambiguously.
The course is called “Global Economic Domination.” Think of it as the game of “Risk,” but where billionaires, corporations, and countries are competing against one another. After the students select what role they want to play in this scenario, Zee sends them Chapter One.

These students do not know one another. Language is a barrier, and while some who open their graphic textbook are greeted with:

**Welcome!**

...everyone else is greeted in their own language:
Here's a graphic resource filled in all the text balloons and captions with the student's primary language based on an online dossier they completed when registering.

This dossier is a mix of fact and fiction: combining who they really are with the "role" they play in the game.

Each student has full access to everyone else's blogs and discussion, but grants read privileges to their own classified information as they see fit.

Each chapter poses new problems to be solved, and no one can move on to the next chapter until all the challenges have been met by all the students.

Through the use of social media, emails, phone, video conferencing, etc., these ten students have to find ways they can communicate and work until one another.

This teaching strategy called problem-based learning (PBL) was developed by Howard S. Barrows in the late 1960s.

PBL is a form of scaffolding in which the teacher (called a "tutor in PBL") facilitates or guides the students through a series of complex problem-solving tasks and self-reflection.

Throughout the semester alliances are made and broken; corporations merge, or assimilate other entities. Each new game takes on its own personality, which is a reflection of its participants.

Some outcomes result in one overlord controlling everything, some extol the virtues of pooling resources for the common good, but the majority will conclude somewhere between the two.

This is advanced game theory played in an international forum.
IT IS A CLASSROOM OF THE MIND
WHERE WE ONLY TWO THINK.
THE STUDENTS SHARE IN COMMON ARE
PROFESSOR Z. AND
THE GRAPHIC TEXTBOOK.

AND WE CAN DO THIS TODAY?

EDUCATIONAL GRAPHIC NOVELS
AND GRAPHIC TEXTBOOKS
ARE ONLY LIMITED BY THE
IMAGINATION AND ABILITIES
OF THEIR CREATORS.

THE SEQUENTIAL ART MEDIUM HAS NEVER BEEN SIMPLISTIC.
IT HAS, UNFORTUNATELY, BEEN LONG MISUNDERSTOOD
BY THOSE WHO DO NOT HAVE THE VISION
TO SEE ITS POWER AND ITS PROMISE.

GRAPHIC NARRATIVES ARE
ENGAGING, ENTERTAINING,
MULTIMODAL EDUCATIONAL TOOLS,
AND WE HAVE ONLY BEGIN TO
TAP INTO THEIR POWER.

"Intectual snobs will no doubt be shocked,
Those with widespread, happy tastes will
accept, as I accept, this new form."

—Ray Bradbury,
The Autumn People (1961)
Chapter 1

5. Retrieved on December 1, 2011 from http://live.psu.edu/album/856

Chapter 2

2. Some of the contents for these volumes are listed as follows (other volumes were not available at this time).


*Christopher Lee’s Treasury of Terror: Great Picture Stories of Supernatural Horror* (1966). New York: Pyramid Books. Cover by Mort Drucker (1929–). Interior art by Johnny Craig, Russ Jones, Alden “Al” McWilliams, and Frank Bolle (1924–2010). Stories as selected by actor Christopher Lee. (1) The Mark of the Beast by Rudyard Kipling; Story adapted by: Craig Tennis (nom de plume for Johnny Craig, 1926–2001); Comics art by: Johnny Craig; (2) Wentworth's Day by H.P. Lovecraft & August Derleth; Story adapted by: Russ Jones; Comics art by: Russ Jones; (3) The Past Master by Robert Bloch; Story adapted by: Craig Tennis; Comics art by: Alden McWilliams; (4) The Death of Halpin Frayser by Ambrose Bierce; Story adapted by: Craig Tennis; Comics art by: Frank Bolle; (5) Dracula's Guest by Bram Stoker; Story adapted by: E. Nelson Bridwell; Comics art by: Frank Bolle.

3 Book Abstract, EconLit Database Retrieved on March 4, 2012 from http://web.ebscohost.com.proxy.lib.ohio-state.edu/ehost/detail?hid=110&sid=9321eda2-6b2a-4a81-af67-b073f0ba9910%40sessionmgr110&vid=1&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=ecn&AN=0043786


8 The liberal press law lifting censorship restrictions went into effect on 29 July 1881. Wirgman’s cartoons were printed using woodcuts and not wood engravings. Initial print runs per issue numbered about 200 copies.


11 The death of Arthur V. Johns was written in the 11 April 1857 issue of *The Illustrated London News* along with his final illustrations. While this was after Wirgman left for China it must be remembered that notification of John’s death
would have been fairly quick but several weeks would have passed before the paper
received his drawings. Afterwards it would have taken at least a week or two to
create the engravings.

While living in Paris it is extremely likely that Wirgman saw the cartoons of
Rodolphe Töpffer (1799–1846) who worked for *L’Illustration*. Wirgman’s link to
Töpffer, whether through personal exposure or through the stylistic influence of the
cartoonists mentioned above (who were all inspired by Töpffer) is prodigious when
it comes to establishing an artistic pedigree for Japanese Manga, since Töpffer was
the creator of the graphic novel. Even though Wirgman never personally drew
panel-to-panel sequentially contiguous narratives, the aesthetic ancestry he
embodies for today’s Manga artists is far-reaching and should be acknowledged.
Wirgman was not just one of the forefathers of cartooning in Japan; he was also the
pedagogical intermediary linking contemporary Japanese Manga to the progenitor
of the modern graphic novel format.

Price found at www.abebooks.com Retrieved on February 26, 2013 from
http://www.abebooks.com/servlet/BookDetailsPL?bi=3740522032&searchurl=kn%
3DStothard%2B1820%2B%2522Robinson%2BCrusoe%2522%26sortby%3D1%26
x%3D48%26y%3D16

Chapter 3

*Metaphysica*, 1045a8–10. See Aristotle’s *Metaphysics*, Unity Reconsidered on
the Stanford Encyclopedia of Philosophy website.

metaphysics/
REFERENCES

This bibliography is subdivided by subject.

A: Graphic Narrative Historiography


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B: How to Write and Illustrate Graphic Narratives


155


C: Graphic Narratives and Illustrated Books Selected for Analysis


D: Philosophy, Methodology, Historiography, and Pedagogy


http://www.startribune.com/lifestyle/197512181.html?page=1&c=y&refer=y


Appendix A: Structured Interview Script

Subject rights: Today, I am going to ask you a few questions regarding graphic novels and graphic textbooks. I would like you acknowledge that you are participating voluntarily, and that you may withdraw from this interview at any time.

Do you wish to continue?

Purpose of the study: The purpose of this study is to help create standards and procedures for developing graphic textbooks for introductory-level undergraduate courses. You are being asked to participate in this research study because of your expertise in this field.

Do you wish to continue?

Study tasks or procedures: For purposes of record-keeping, I will be taping this interview. Is that alright with you?
Duration of subject’s participation: The total time for this interview should take no
more than thirty (30) minutes, depending on the length of your answers.

Confidentiality: I eventually plan on publishing this material, and I will probably use quotes from your interview. I selected you for this interview because you are a professional who is working in the industry. You have several choices to pick from:

1) Your name is kept completely confidential, and I will not use any direct quotes from you (i.e., maintained in a way that prevents inadvertent or inappropriate disclosure of participants’ identifiable information). All recordings will be kept by me, and I will be the only person to have access to them.

2) Your name will be listed as “Anonymous” by any quotes (i.e., identifiers were permanently removed).

3) Your name will be listed with any quotes, and I will only publish the quote after you have had a
chance to edit the quote so it meets with your approval.

Which of these three options would you prefer.

Do you wish to continue?

Contacts and Questions:
My name is Brian M. Kane. I am a student at The Ohio State University in the Department of Arts Administration, Education, and Policy.

My Advisor, and Principal Investigator is Dr. Candace Stout. Her phone number is 614-292-0253 should you have any need to contact her.

ORRP contact information: For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Incentives: N/A (There are no incentives.)

Sponsor: N/A

May we begin?

The following are sample interview questions. Not all of these questions will be asked of each participant, since I will be interviewing writers, artists, editors, and librarians.
1) What made you decide to present this material as a graphic narrative?

2) Were you approached by a publisher/editor, or did someone approach you?

3) What were the problems you faced in the production of this graphic narrative?

4) What was it like working with a/n writer/illustrator/editor?

5) How was the information in the graphic narrative peer reviewed?

6) How has it been received by students?

7) How has it been received by other professors?

8) How has it been received by the public?

9) What are the strengths of the graphic narrative format for education?

10) What are the weaknesses of the graphic narrative format for education?

11) Do you think the graphic narrative format can be successfully adapted by academicians in other departments?

12) What would you recommend to academicians intending on creating their own educational graphic narratives?

13) What do you think about the possibility of having academicians co-author an educational graphic narrative with a comic book/graphic narrative industry professional?

14) Would you make another educational graphic narrative?
Appendix B: Consent Forms

Developing the Graphic Narrative Format for Undergraduate Level Textbooks

I, ______________, am participating in an interview conducted by Brian M. Kane answering questions regarding my thoughts on graphic textbooks, and how to develop them for undergraduate students. I understand that the interview will last approximately one-half hour.

_____ I give my consent to have this interview audio taped.

_____ I do not give my consent to have this interview recorded in any way.

_____ I wish to have my name kept confidential.

_____ I wish my quotes to appear as “Anonymous.”

_____ I give permission for my name to be published with my quotes only after I have had a chance to edit them.

Questions or concerns regarding this research may be addressed to dissertation advisor, Dr. Candace Stout at 614-292-0253, or Brian Kane at 614-891-2578.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.
I understand that there is no remuneration for this interview.

_____________________________  ____________________________
Signature                      Date

__________________________________  ____________________________
Brian M. Kane                    Date
Appendix C: Dissertation Blog Page Views by Country

Since it first appeared on September 4, 2012, the Graphic Textbooks blog has been viewed 3,046 times (As of April 22, 2013). While 67.4% of these page views originated from the United States, Germany and Russia comprised the largest foreign viewership. The following is a list of all 61 foreign countries that have viewed the blog.

- Algeria
- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Bulgaria
- Canada
- Chile
- China
- Colombia
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- Estonia
- Finland
- France
- Georgia
- Germany
- Greece
- Hong Kong
- Hungary
- India
- Indonesia
- Ireland
- Israel
- Italy
- Japan
- Kuwait
- Lebanon
- Lithuania
- Malaysia
- Mexico
- Morocco
- Netherlands
- New Zealand
- Norway
- Pakistan
- Peru
- Philippines
- Poland
- Portugal
- Puerto Rico
- Romania
- Russia
- Serbia
- Singapore
- Slovakia
- South Africa
- South Korea
- Spain
- Sweden
- Taiwan
- Thailand
- Turkey
- Ukraine
- United Arab Emirates
- United Kingdom
- Venezuela
- Vietnam
Dear Prof. __________:

We are currently evaluating a series of optional/supplemental textbooks as learning aids for introductory-level classes.

The Virginia Department of Education's Training and Technical Assistance Center (T/TAC) at Virginia Commonwealth University recommends several of these graphic textbooks for its students.

Unfortunately, I do not have the expertise in your area of study. I am hoping you could look at the sample pages attached, and comment on the quality of its content. This is not an endorsement by you for the book. I am simply trying to determine the validity of the content. Your comments will be held in strict confidence.

This survey is for research, specific information on how responses will be used, that participation is voluntary. The estimated time required should take no more than 15 minutes, and a brief reply back to this email is sufficient.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Your assistance is appreciated in helping us better serve our students!

Thank you for your time,

Brian M. Kane

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1st Floor Stadium
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Appendix E: Sample Economics Graphic Textbook Chapter
CHAPTER 6
CAKE CUTTING

WE'RE NOT FIGHTING, MOM...

...WE'RE LEARNING ABOUT GAME THEORY!
GAME THEORY GOT ITS NAME BECAUSE SOME OF ITS EARLIEST TOPICS WERE GAMES LIKE POKER...

WE'RE EXPERTS AT THIS!

SO HOW COME YOU CAN'T MANAGE TO WIN A HAND?

...BUT TO ECONOMISTS, A GAME IS ANY SITUATION WITH INTERDEPENDENCE BETWEEN MULTIPLE PLAYERS.

INTERDEPENDENCE MEANS THAT WHAT HAPPENS TO ONE PLAYER DEPENDS ON WHAT THE OTHER PLAYERS DO.

OKAY, MOG, HERE'S HOW ROCK PAPER SCISSORS WORKS:

IF I PLAY PAPER, YOU WANT TO PLAY SCISSORS...

...AND IF I PLAY SCISSORS, YOU WANT TO PLAY ROCK...

...AND IF...
Each player in a game has to think about what all the other players are thinking.

That's what distinguishes the individual optimization we studied in part one...

...from game theory.

Should I make a fire or look for food?

If I make a fire, is she going to help me or steal my food?

I hope he makes a fire so I can steal his food!

When economists study games, they analyze all the strategies of all the players.

Your strategy is a complete description of your actions in a game.

If she moves her pawn, what are you going to do?

And if she moves her bishop, what are you going to do?

And if she moves...

Shut up, I'm trying to think!

John Nash shared the Nobel Prize in 1994 for his analysis of game theory strategies.

I've figured out the optimal strategy for rock paper scissors.

Congratulations, you win the Nobel Prize!
OF COURSE, GAME THEORY IS NOT JUST ABOUT ROCK PAPER SCISSORS. IT ALSO COVERS DEADLY SERIOUS TOPICS...

LIKE WARFARE...

LOOKS LIKE THERE'S A FIRST-MOVER ADVANTAGE IN THIS GAME!

AND BUSINESS...

THIS BEACH IS ENTIRELY COVERED WITH PEOPLE...

...WHY DID YOU PUT YOUR HOT DOG CART RIGHT METER TO MY HOT DOG CART?

BECAUSE WE'RE BOTH TRYING TO CAPTURE THE MIDDLE GROUND...

...IT'S CALLED HOTELLING'S LAW!

AND BIOLOGY...

WHY ARE THERE ROUGHLY EQUAL NUMBERS OF BOY BABIES AND GIRL BABIES?

IT'S EVOLUTIONARY GAME THEORY!
AND AUCTIONS...

HOW SHOULD THE GOVERNMENT SELL BILLIONS OF DOLLARS WORTH OF WIRELESS SPECTRUM?

THEY SHOULD TRY EBAY...

...IT WORKED WHEN MY SISTER SOLD HER BARBIE DOLL COLLECTION!

AND DIVIDING CAKE BETWEEN SIBLINGS.

THIS IS THE MOST DEADLY SERIOUS EXAMPLE YET!

CAKE CUTTING MAY SOUND SILLY, BUT IT APPLIES ANY TIME YOU NEED TO DIVIDE THINGS FAIRLY!

I DEMAND A FAIR PORTION!

So do I!

WE CALL THIS A FAIR DIVISION PROBLEM.
FAIR DIVISION PROBLEMS APPEAR ALL OVER THE PLACE:

IN DIVORCE SETTLEMENTS...

MRS. SMITH, I'VE DECIDED TO SPLIT EVERYTHING SO THAT YOUR EX-HUSBAND GETS TEN TIMES MORE THAN YOU.

IN THAT CASE, I'D LIKE TO HAVE A MILD HEART ATTACK!

...AND CORPORATE PROFIT-SHARING...

AARGH, HOW DO WE DIVVY UP THE LOOT?

...AND GOVERNMENT POLICY...

OKAY, SO WE'RE GOING TO LIMIT OVERFISHING BY USING A SYSTEM OF TRADEABLE FISHING PERMITS.

HOW DO WE ALLOCATE THE PERMITS?

...AND POLITICAL NEGOTIATIONS,

I HAVE A GOOD IDEA, LET'S PRETEND THE ENTIRE MIDDLE EAST IS LIKE A BIRTHDAY CAKE!

THAT'S WHY THERE ARE SO MANY BOOKS ABOUT THE CAKE-CUTTING PROBLEM!

WHO KNEW ECONOMISTS HAD SUCH GOOD PARENTING ADVICE?
In addition to modern solutions like the moving knife procedure...

Don't worry, I read about this in an economics book!

...there's an ancient solution to the cake-cutting problem:

*I cut, you choose!*

Okay... That sounds fair.

This leads us to our first interesting game theory question:

Is it better to be the cutter or the chooser?

Think about it before you turn the page!
Actually, the answer is in your head... and in the other player's head!

It depends on what you know about the other person... and what they know about you... and what you know they know about you!

If you know a lot about the other person, you should try to be the cutter.

I know that Jimmy loves race cars... so if I carve off a tiny portion with that race car on it, he'll choose it and leave the rest to me!
BUT IF YOU DON'T KNOW MUCH ABOUT THE OTHER PERSON, YOU'RE PROBABLY BETTER OFF BEING THE CHOOSER, ESPECIALLY IF THEY DON'T KNOW MUCH ABOUT YOU!

I CAN'T REMEMBER: DOES SALLY LIKE CHOCOLATE OR FLOWERS BETTER?

I'D BETTER LET HER CUT, BECAUSE THEN I CAN CHOOSE BASED ON MY PREFERENCES!

THAT WILL WORK GREAT... AS LONG AS SHE DOESN'T REMEMBER HOW MUCH I LOVE RACE CARS!

THE BOTTOM LINE—AND THIS IS TRUE EVERYWHERE IN GAME THEORY—IS:

INFORMATION MATTERS!
Economists who study games focus on two questions. The first game theory question is:

**Can we predict the outcome of a game?**

This is what we call a positive question, because it deals with what's actually going to happen in a game.

If you go there, he's going to take your queen and checkmate you! Ha! We'll see about that.

Checkmate!

I told you so!
Once we figure out how to predict the outcome of a game, we can move to the second game theory question:

**IS THE PREDICTED OUTCOME GOOD?**

This is what we call a normative question, because it deals with what should happen.

This question is central to all fair division problems:

You should give me a bigger piece of cake because I'm bigger!

But she didn't do all her chores!

We need to divvy up the loot!

Time to use AARRRithmetic!

I should get more land because my people have lived here for millennia!

Unfortunately, it's not always clear what makes an outcome fair, and that brings us back to the big question...
UNDER WHAT CIRCUMSTANCES DOES INDIVIDUAL OPTIMIZATION LEAD TO OUTCOMES THAT ARE GOOD FOR THE GROUP AS A WHOLE?

UM, WHAT EXACTLY DOES "GOOD" MEAN, ANYWAY?
Appendix F: IRB Protocol: Form of Exemption

Office of Research
Office of Responsible Research Practices

Protocol Title: DEVELOPING GRAPHIC TEXTBOOKS FOR UNDERGRADUATE STUDY
Protocol Number: 2012E0578
Principal Investigator: Candace Stout
Date of Determination: 12/11/2012
Qualifying Category: 02
Attachments: None

Dear Investigators,
The Office of Responsible Research Practices has determined the above referenced project exempt from IRB review. Please note the following:

- Retain a copy of this correspondence for your records.
- Only the OSU staff and students named on the application are approved as OSU investigators and/or key personnel for this study.
- No changes may be made to exempt research (e.g., personnel, recruitment procedures, advertisements, instruments, etc.). If changes are needed, a new application for exemption must be submitted for review and approval prior to implementing the changes.
- Per university requirements, all research-related records (e.g., application materials, letters of support, signed consent forms, etc.) must be retained and available for audit for a period of at least three years after the research has ended.
- It is the responsibility of the investigators to promptly report events that may represent unanticipated problems involving risks to subjects or others.

This determination is issued under The Ohio State University’s OHRP Federally-Required Assurance #00006578. All forms and procedures can be found on the ORRP website: www.orrp.osu.edu. Please feel free to contact the Office of Responsible Research Practices with any questions or concerns.

Thanks,
Cheri

Cheri Pettke
Quality Improvement Specialist | Regulatory & Exempt Determinations
Office of Responsible Research Practices | The Ohio State University
T: 614.688.0389 F: 614.688.0386 E: pettey.6@osu.edu W: www.orrp.osu.edu

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