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Technological Evolution and its Effects on Graphic Design and Textbook Design

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TECHNOLOGICAL EVOLUTION AND ITS EFFECTS ON
GRAPHIC DESIGN AND TEXTBOOK DESIGN

by

Danielle Renae Allen

Thesis submitted in partial fulfillment
of the requirements for the degree

of

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in

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Abstract

Technological Evolution and its Effects on Graphic Design and Textbook Design

Although fundamental principles of art and design have been around for thousands of years, the development of new technology has greatly altered how designers must use these foundations. This paper investigates how this complex history has changed graphic design practices and specifically the design of textbooks. It also discusses technology’s huge role in changing the way design fundamentals are taught and practiced and how this affects where the profession is headed. Through researching the history of graphic design and then examining three editions of the textbook, Design Basics by David Lauer that span a period of about 32 years, it is easy to see how society’s changing needs, as well as dramatically changing technology, have affected textbook design. This series of textbooks has evolved through multiple editions to appeal to a much broader group of people, especially students, and to include new technologies. These adaptations can easily be seen through evaluating what changes and additions have been made to these books. Technology has become the driving force behind design and specifically textbook design. This paper argues that technology will constantly be changing and evolving and that graphic design will continue to evolve at a similar rate to reflect these changes.
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Introduction

The building blocks of graphic design have been around for generations, with foundations dating back as far as the Stone Age. Although it has such a rich and diverse background, graphic design is constantly changing and evolving. So how does this complex history affect and change graphic design and the design of textbooks? How must designers adapt and change to meet the needs of an ever-changing society and an ever-changing field? Where is this profession heading and what is its future?

In order to explore and answer these questions, I researched the history of graphic design and how it has changed over time, as well as where it is today. I then used that knowledge to analyze three editions of a textbook, each from various years, in order to see how they have changed and adapted to the changes in graphic design and technology that have taken place over the years. I concluded by researching and discussing where graphic design and textbook design will be headed in the future.

I argue that advances in technology are the driving force behind the changes that have taken place in the world of graphic design. As technology continues to advance, graphic design will continue to evolve as well, to meet the needs of an ever-changing society. The design of textbooks is but one small way to measure the affect that technology has had on the world of design.
Literature Review

In her book, *Graphic! Design History*, Drucker (2009) argues that the origins of graphic design have been around since the Stone Age and that this is where many of the basic concepts of design originated. Conversely in *American Graphic Design Expression: The Evolution of American Typography*, McCoy (2001) argues that the phenomenon of graphic design has come about only in the last hundred years and that it came about in response to the communication needs of the industrial revolution. I would argue that it is a combination of the two of these. Some of the foundations and principles of art and design have been around for generations, but what we would consider today to be graphic design is a pretty modern concept. It has evolved and come about because of the need to communicate to mass amounts of people.

In *Graphic Design: A Concise History*, Hollis (2001) argues that the invention of the personal computer and its appearance in the home, the classroom, and the office has brought the handling of text and image into everyone’s reach. The advance of technology has brought the capability to design to everyone who is financially able and lives in a location where these sources are available. I also agree with another statement made in his book, which basically states that, anyone who doesn’t love putting ideas down on paper that could change the world shouldn’t be in the business. Heller (2000) also discusses typefaces in his book and the way that they have changed through the evolution of technology. He discusses how new technology has allowed the design of type to be executed by novices. He talks about how this has brought about the creation of many new typefaces that convey ideas and themes. They do more than just serve the demands of type.

In their respective research on e-readers, Özdemir (2012) and Butler (2012) discuss the fact that the e-reader is emerging and technology is advancing so that they will soon be
even more of a mainstream item. They discuss the implications of this and what it will do to textbooks and the textbook industry. I agree with the arguments that they make and I believe that e-readers, and other technologies like them, are where our society is heading. More and more people are buying these technologies and that will begin to change the role of graphic designers and what their jobs will entail.

It will also change the face and uses of textbooks. With all of these new capabilities, the printed textbook may very likely become a thing of the past. Most textbooks now include computer-based components and some are transferring to an electronic-only platform. This will lead to a lot more interactive learning and could even lead to a better form of learning. Looking toward this future is imperative for graphic designers and for the authors and publishers of textbooks. Graphic designers will have to find new ways to organize information in order to incorporate the new capabilities of technology.

Technology has shaped the face of graphic design and what it is capable of. It is through these advances that textbooks have also begun to change. They have started to embrace the move toward technology and authors and publishers have adjusted accordingly. Textbooks are beginning to include more and more technological features and they will continue to explore these options as more advanced e-readers and technologies emerge. The exact future is, of course, unknown, but graphic designers must continue to utilize technology and keep textbooks and all other aspects of design as up-to-date and advanced as possible. The future holds countless opportunities for the growth and progress of this profession.
History

From the very beginning, graphic design has been a part of the human experience. Many may feel that claiming this may be a huge stretch at the least, but Stone Age artists were the ones that established some of the basic conventions of graphic design as many as 35,000 years ago. Many prehistoric artists don’t get recognized for these achievements because they have become so common and people take them for granted. Prehistoric art can be seen as the origin of graphic design because it shows evidence that there were conscious decisions about form. These artists organized surfaces to support figure ground distinctions, which established the basis on which images and signs could be produced and read. They also prepared specialized materials for artworks, which shows it was a deliberate process, not simply one of impulse.¹

The modern form of graphic design, or what we know and think of today, has become a phenomenon in only the last hundred years, however. This phenomenon was a spontaneous response to the communication needs of the industrial revolution. It was invented in the late nineteenth and early twentieth centuries to sell the fruits of mass production to the growing consumer societies in North America as well as Europe.² Between the prehistoric age and the sudden beginning of modern graphic design around the time of the industrial revolution, many events and ideas changed and shaped how graphic design would be utilized.

During the European Middle Ages, there was an emergence of basic letterforms and styles, many of which are still in use today.³ Then, during the Renaissance the invention of the

printing press and movable type drastically impacted the culture of graphic design. This brought about more standardized letterforms, new writing styles and page designs, as well as a broad distribution of reproduced texts.⁴ These were crucial steps and technologies needed in order to start the design and distribution of textbooks.

The New England Primer was the first reading primer designed for the American Colonies. It was the first of its kind and it became the most successful educational textbook that was published in American in the 18th century. It became the foundation of most schooling before the 1790’s. The Bible influenced a good portion of what was contained in this early textbook. Some of the contents varied over time, but all included sections to help teach the alphabet, vowels, consonants, and double letters. The New England Primer was the first textbook to help teach the children in America, and helped to influence the textbooks of today.⁵

The appearance of personal computers in the home, the classroom, and the office has brought the handling of text and image into everyone’s reach. Readers have become users, some even designing their own websites. At this time, although the ability to design was within everyone’s reach, designers believed it was a professional heresy to consider a designer as simply a stylist or image-maker. A traditional idea was that “any designer who doesn’t love putting ideas down that might change the world, and who doesn’t’ have the talent to do it, shouldn’t be in the business.”⁶

Then, the Mac’s emergence had a huge influence on the style of the 1990’s. The power and convenience of the desktop and laptop allowed designers to experiment much more freely.

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than ever before. Designers could change designs and colors with the simple click of a mouse. They could also carry their work with them and work from wherever they were.7

The invention and distribution of the Mac also changed the way that designers could design. The remarkable capabilities of the Mac encouraged designers and artists to play with and try the numerous defaults and challenge its limitations. Unlike before designers could employ the use of negative leading, overlapping, layering, and even backwards text settings and columns of text that could bleed off the page. Designers also pushed and tested the extent to which typefaces could be changed. Mac’s desktop and laptop power and convenience enabled designers to experiment more directly and freely than at any other time throughout graphic design history.8 New technologies are continuously being employed by graphic designers to help them engage their audience, to better communicate an idea or context, or to make an experience more immersive or accessible.9

In order to do a little bit of reflecting, and to find out how all of these changes and evolutions in technology have affected graphic design, I studied a book with multiple editions, which editions span about 32 years. I have taken the first edition (1979), the fourth edition (1995) and the eighth edition (2011) in order to focus my research and make it more manageable, while still keeping an inclusive history of the years that these books cover. I have looked at them to see how technology and time have caused them to adapt and evolve to societies changing needs.

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8 Heller, Steven. Graphic Style: From Victorian to Digital, 235.
Textbook Analysis

The first edition of the Design Basics series by David A. Lauer was published in 1979. It was written to be an introductory text for studio classes in two-dimensional design. Its purpose was to present the most basic and fundamental elements and principles of design and how they relate to drawing and painting, as well as the graphic arts. The author intended this book to be an overall reference guide in which the chapters could be studied in any order. It was to provide a framework to learn from and be guided by.

The editions that followed were also meant to fulfill the same purposes while adapting to the evolving requirements of a much larger audience interested in visual language. As the years progressed between the releases the new editions, technology became more and more available to the masses; therefore, the ability to design was available to them as well. Because of this, the author had to adapt the text to be able to appeal to a much larger and more diverse audience.

It had to be able to communicate to those that had never picked up a design book before, as well as to those that had much more experience with the subject matter. It also had to be able to relate to different cultures and to people from different backgrounds. Each new edition had to take into consideration ever-expanding and available technology and make the books communicate to the increasing audience it was acquiring. In order to understand all of the changes that were made to reach such a wide audience, I did an in-depth study of the books and looked at things such as the structure and set up of the books, the changes and additions that were made to the books, and at how some of the specific ideas and content developed and changed. I also looked at and evaluated the new online portion that came with the latest edition of the book.
Overall Structure

Much of the overall structure of each of the new editions has remained relatively the same, but some key changes have been made to make these books much more accessible and easy to use. The first edition of the book is very simplistic and minimal in its layout and structure. The table of contents (figure 1) only gives the chapter number and the title of each chapter. There are no subdivisions or explanations included, simply the title of each chapter.

![Figure 1: Table of Content from 1979 edition of Design Basics (Holt 1979)](image1)

![Figure 2: Layout from 1979 edition of Design Basics (Holt 1979)](image2)

Then, before each chapter there is a page that simply indicates which chapter the reader is on and what the title of it is. There is no breakdown of the subdivisions that are in each chapter or where the various information within each chapter may be located. Throughout each of the chapters there is a heading on every spread that indicates the name of the chapter as well as what section of information is on those particular pages (see figure 2). There are also sometimes subheadings on the pages to indicate various sections within the bigger sections. The setup is pretty straightforward, but it is difficult to navigate through the chapters and find specific
information if you are looking for it. Also, on some pages there are so many titles and subtitles that it is confusing to know exactly what is you are looking at and where these sections start and end. The next edition of the book that I looked at solved some of these problems and made navigations a little bit easier and more user friendly.

In the main table of contents area (figure 3) of the fourth edition, the name and number of the chapter is given, as well as a breakdown of the various sections within each chapter. This makes it a lot easier to jump around and find what you are looking for if you are trying to discover specific information. The beginning of each chapter has a title page to indicate which chapter you are on and what the title of it is, but there is no other navigation or indication of what is found in the chapter. Included on each spread is again, the title of the section as well as headings and subheadings to help one know what they are reading (figure 4).

![Figure 3: Table of Contents from 1995 Design Basics (Harcourt 1995)](image1)

![Figure 4: Layout from 1995 edition of Design Basics (Harcourt 1995)](image2)

The organization of this edition is more user-friendly and it is easier to go from the table of contents to a specific section in the book without flipping through a lot of pages, but there are still some things missing. The organization and hierarchy of the chapters makes a lot more sense
and is a lot easier to follow, but there is still a little bit of uncertainty, as there is no indication on the spreads as to what chapter you are in. Almost all of these small problems and organizational issues are addressed in the latest edition of this book.

In the eighth edition the table of contents (figure 5) is laid out in a very clear way. Color and font choice, which were not included in the previous editions discussed, helps give much more hierarchy and order to the contents pages. Included on these pages are the chapter numbers, as well as the title of each chapter. There are also sections listed, as well as subsections within each of these sections. This makes navigation of this book and its contents so much easier, especially if one is looking for specific information. It even hints at the idea that this could more easily be changed into an online text because it would even make jumping around online so much easier and simpler.

This edition is broken up into two parts, design principles and design elements, so at the beginning of both of these parts there is a page that includes the chapter number and titles of the
chapters that are included in these parts and what pages they start on. Then, before the start of each chapter there is another page that gives the specific sections and subsections that are found within each chapter and what page they can be found on. The ease with which the reader can navigate through this book is amazing when comparing it with the first edition.

This ease of navigation continues when looking at the titles and headers on each of the individual spreads within the chapters (figure 6). At the top of each left page it indicates which section the reader is in, while on the right, it indicates the title and number of the chapter that the reader is in. Then, each heading is in all caps to separate it from the subheadings, which are bigger than the text, but not bold like the headings. The organization and way finding in this edition is much easier and makes a lot of sense.

Because of the advances in technology and the increased availability of design to the masses, this textbook had to adapt. Not only did more and more people have access to laptops and computers and the ability to design, but also more people from various backgrounds and cultures had access to this textbook. As seen when looking just at the navigation of the book, some dramatic changes were made in order to make it much easier for the reader to navigate and find what they are looking for. Much of this is to cater to the various experiences of the people reading this book. Some people may have much more experience, so they may simply want to look up a simple concept to remind themselves of something, while another person may have no experience, so they want to read much more of the book and learn all of the concepts and things taught in these books. The new editions have done a great job in adapting to the changes that have taken place and have been made much more accessible and friendly to the readers.
Addition of Glossary and Bolds

Overall, the actual text of the different editions has much of the same feel and look, but with a few improvements and modernizations. The first editions’ text is very plain and simple without a lot of extra design elements. Some of the words are italicized to add emphasis, but that is about the only stray from the ordinary text (figure 7). Everything else is pretty standard, and you can read along without getting interrupted by words with emphasis. The only bold elements in this edition are the letters that indicate there is an image to go along with the concept being explained.

Similarly to the lack of adornment, there is no glossary in the back. There is no way to quickly look up a concept and see what it means. If one wants to look up what a specific concept means, they would have to turn to the chapter and skim the whole thing in order to find the word
they are looking for. This would be pretty difficult since the main concepts and words aren’t in bold. Some of them are in italics, but they don’t stand out nearly as much. In other words, it would be very hard to quickly look up a concept if one simply wants a quick refresher.

The fourth edition of this book solves these problems with a few easy solutions. First, many of the main concepts and words are bolded to add that little bit of extra emphasis (figure 8). This makes it easier to find them, as well as to see what some of the main ideas and concepts of the chapter are. The references to the pictures talking about the concepts also have remained bold, so it is easy to see when there is a specific example illustrating the concept being discussed. These simple features really help get the main points and ideas across. Also, in this newer edition, a glossary has been added to the back of the book. This makes referring to what concepts mean so much easier and faster.

Since many of the problems with the emphasizing of the main points were addressed in the fourth edition, not much changed in that regard when the eighth edition came about. The main words and concepts are still bolded (figure 9), as well as the letters that indicate there is an image to go along with the concept. There is also still a glossary in the back that highlights all of these main concepts and ideas. There have been words and concepts added, but for the most part, this edition hasn’t changed much in the glossary and bolding of important concepts.

The addition of these changes continues to prove that the advance in technology that has created greater availability to people, has forced design in textbooks to change. Greater measures are taken to make sure that even an ordinary person who knows nothing about design can easily see what the key concepts are and what they mean. It is also easier for people to look up concepts and ideas in the back of the book. This make the information much more accessible
and easier for the reader to find. The editions of the books just keep adapting to make sure that everybody can easily understand and find what they are looking for.

**Changes and Additions of Images and Color**

Perhaps one of the easiest changes to spot in the newest edition of the book is the addition of color. The first and fourth edition of *Design Basics* only contains some colored images in the color chapter of the book, while most are black and white (figure 10). The image on the opening spread of the color chapter in the first edition isn’t even in color; it is printed black and white. The eighth edition of the book, however, has colored photos and text in every chapter of the textbook (figure 11).

![Figure 10: Layout from 1995 edition of *Design Basics* (Harcourt 1995)](image1)

![Figure 11: Layout from 2011 edition of *Design Basics* (Wadsworth 2011)](image2)

I would suggest that the addition of color in the eighth edition makes it much more engaging and interesting to look at. I believe people relate more to color images because of the time in which we live. We live in a world of color and black and white photos often make
people think of the past and older ways. The color photos make the book seem much newer and up-to-date. Since the books are trying to appeal to wider audiences I think it was a good idea for the colored photos to be added. It makes the book seem much more current and I feel as though a much more diverse group of people can relate to the images.

There is something to be said about how black and white images can help you focus more on the line and shape of the image, while color can distract from the overall structure of the piece. I think, however that due to the need to appeal to the larger audience that now has design at their fingertips, it was a wise idea to go with color in order to draw in more people. Overall I would say that people would be more engaged with and would rather look at color images, so I think the author and designers were wise to include colored images. They were also wise in the fact that they did include some black and white images. They put in black and white photos in some of the chapters to help people focus on principles such as line and value. Due to this fact, they were able to account for the fact that some principles are related well in black and white. They were very conscious and aware of what will relay the intended messages best, as well as what will appeal to a large audience of designers and non-designers alike.

Another addition that can be seen in the later versions of text is the addition of a Design Process chapter, as well as a chapter on value. The first edition of this book doesn’t contain these chapters, but the fourth and eight both do. The addition of the Design Process is very interesting. To me it proves the fact that, with each new addition, these books are trying to appeal to more and more people. People with little background in design, but who now have the capability to do so because of technology, can be helped by this chapter and see what they can and should do to get started.
This chapter in the fourth edition contains sections that include: procedures, thinking, looking, and doing. The section also starts off with a brief introduction as to what design actually is, and suggests that the common theme between all of the definitions of design is the idea of planning and organizing. It also goes on to discuss that the arts are called creative fields because there are no predetermined right answers to the problems that are faced. It is all up for individual interpretation. The author then states that although much is up to the individual, there are still certain guidelines that can help someone to be more successful in their visual communication. He also states that three steps that help in the creative process are thinking, looking, and doing. He then goes on to briefly describe each of these steps.

I would suggest that the addition of this section in the book supports the idea that more and more people, because of technology, have the capability to design and the author is addressing that point. He states that problems are up to the individual to solve, and they can solve them however they would like to, but that there are certain guidelines that it would be wise to follow. To me this illustrates that more and more people are venturing into this field that have never done so before and author is trying to give them some reference points, but still keep it simple to appeal to the diverse group of people who may be reading this book. For some, who are teachers, this book may simply be a good reminder, but for the vast majority who are just getting into design, this chapter gives a good starting point and reference to jump into the ever-expanding world of design.

The eighth edition of the book carries on the idea that more and more people are jumping into design and includes even more in this section to help out the readers. They include more subsections within each of the sections such as form and function within the thinking section, along with sources from nature, artifacts, history and culture in the looking section, and doing
and redoing in the doing section. They also include a section at the end about critique and constructive criticism. I would suggest that all of these additions continue to prove that the author realizes design is being opened up to more and more people and is trying to address this fact in the content that he adds to each new edition of his book.

The other chapter that was added to the later version of the text was that of value. The author added sections in this chapter such as: an introduction to value, value pattern, value as emphasis, value and space, and techniques for value. I think the author is again trying to appeal to the broader audience and give them another tool that if understood will help them to be more successful. The value chapters in both the fourth and eighth editions are relatively close to the same and can help the reader more fully understand value and what it can add to their pieces and their design. It is another great addition to remind those who have been designing for a long time, as well as a great way for beginners to learn the basics of design.

Another change that has been made between the editions is the content of the chapter on color. In the first edition the chapter on color briefly discusses ideas such as: properties of color, color and space, color harmonies, emotional qualities of color, and color symbolism. This edition does a pretty good job of overviewing the basic properties and ideas of color. In the fourth and eighth editions, however, there are many more sections added and some more details added to the other sections that were still included.

In the fourth edition for example, sections such as: color as emphasis, color and balance, cool/warm colors, and visual color mixing are added. The eight edition has all of these same sections added, as well as one on palettes and the mixing of light as well as the mixing of pigments. Again, I believe that this points to the authors trying to accommodate a larger audience, as well as, including techniques and ideas that have developed because of advancing
technology. This can easily be seen when examining some of the images that are found in the eight edition of the book. In the previous editions that I examined, there were only examples of color included from paintings, photographs and the like. In the eighth edition, however, there is an image taken from a play on stage as well as an image taken from Photoshop (figure 12) to illustrate a point in the color chapter. This easily illustrates the fact that technology is greatly influencing design.

In the eighth edition there are also many more examples of actual graphic design and posters in the text instead of just fine art. There are also many more diverse examples of images included such as sports arenas, models, and web pages (figure 13). This increase in the diversity of the images only continues to prove that the books are adapting to include the many things that have come about because of technology that have greatly influenced and are a part of design. The mere fact that Photoshop as well as a webpage are included in the imagery proves that technology is moving forward and that it is becoming much more commonplace and accessible to people. If it weren’t so, I don’t believe the images would have been included in the book because not enough people would know what they were or how they related.
In the preface of the eighth edition of the book the author discusses the changes and refinements that have taken place in this edition and that have characterized the text over the previous editions. He says that it is right for one to ask, “What changes have occurred that would change the elements and principles of design?” He goes on to answer that nothing really has changed in that regard, but that “the forms and media in which we discover them have certainly evolved at a rapid rate.” The author himself states that the way we are discovering the principles has evolved at a very rapid rate and he has to adjust to keep up. I would argue that elements such as Photoshop images and web pages are included in order to stay up with these rapid changes. The author understands that because of technologies such as these, more and more people are able to access design and are more easily able to design. Adding these images and technologies into the text help the current generations and rising designers better understand what they are getting into and how better to use these technologies. I believe the authors and
designers do a wonderful job of understanding the changes that are taking place in society and adjusting their text accordingly.

**Online Portion**

Perhaps one of the biggest and easiest ways to see how technology and an expanding audience have affected textbook design is in the added element of and online portion of the textbook. The eighth edition of *Design Basics* includes an online access code that logs the user into CourseMate on cengage.com (figure 14). Once you have logged in there are dozens of resources that support the actual text. There is even an option that you can sign in with instructor information if you are enrolled in a class that uses this book. With this, a teacher would be able to give assignments and quizzes, all through using this website.

![Figure 14: Online portion for 2011 edition of Design Basics (Wadsworth 2011)](image)

There are so many additions and supports to the book that can be found in this online resource. In about 1968 Alan Kay, who developed the concept for the Dynabook, stated, “Just as the book was an extension of the oral medium, so is the computer an extension of the print medium. There are many things that books can do, but computers have an extra dimension.”\(^\text{10}\)

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One of the resources that come with this online source is access to an eBook. It contains all of the same information and text as the actual book, but includes some helpful features. There is a place where you can take notes on the text, an option to bookmark a page, and an option to highlight text. All of these options can easily be pulled up and easily accessed on a simple pullover menu that will sort them by the date they were added. Also, when you click on the information that has been added to these pullover menus, it will take you straight to the page that contains that specific information.

This is an easy and effective way to keep your notes and thoughts organized as you read through the book. There is also the option of entering a specific word into a search bar and it will bring up each instance of that word being used in the text. These could all be a very helpful way to study and to recall specific information if one was being tested on the contents of this book. The online text is just another added resource to help students learn. What the online resource offers isn’t new or groundbreaking, but it adds addition helps for students and it is accessible from anywhere that has the Internet.

In each chapter of the eBook there is also a link to a media library. When this library is accessed it brings up a “Foundations” option. This option brings up supplemental text about specific areas of the chapter and involves answering questions to make sure these concepts are understood. In the first chapter there is also an “In the Studio” option that brings up videos from teachers and students that discuss various ideas and techniques for sketching and drawing. This is a great way to immerse students in learning and help them learn concepts from different people as well as different points of view.
There are many other additional resources found in the eBook such as: learning objectives, projects, quizzes, and flashcards. The learning objectives section is simply a numbered list of what ideas and concepts are meant to be discussed and learned in each of the individual chapters. The projects section describes different art projects that the reader can try in order to better understand and practice the principles and concepts of design that are being taught within each chapter.

The quiz section of the eBook contains two parts. There is a sample quiz option as well as a tutorial quiz option. In the sample quiz, a simple five-question quiz is given to give the user an idea of what kinds of questions will be on the quiz. In the tutorial quiz section, more questions are answered. At the end of both quizzes a score is given so the user can see which questions they answered correctly. On this score page there is a link after every question that links to where the answer can be found in the text, so that if the user gets the answer wrong they can go back and read what the answer should have been. This is a great way for students to practice out concepts that they have been learning and see if they truly understand the material. Many of these resources are very helpful and could really help students learn more effectively, but in order for this to happen, students must take advantage of these resources and utilize them, but a good percentage don’t.

One of the final sections in the eBook resources is that of flashcards. There are two types found on the website. There are image flashcards as well as interactive flash cards. The image flashcards contain a big example of the image along with the information for the title, artist, year, medium, dimensions, and description of the piece on the side. All of the information may be hidden or shown to help with studying. The interactive cards are a way to study the meaning of the key words in the chapters. They appear as regular lined flash cards and have the word on one
side with the definition on the other. There is the option of showing the word or the definition first, of shuffling the deck, of removing cards, or of showing all of the cards.

The resources found in the online version of this textbook are nothing new or groundbreaking, but add additional ways for people to learn. There are so many helps and tools to use in order to understand and remember the material better. Since such a wide variety of people are using this textbook, this adds more, diverse ways for people to learn. The role of technology in the classroom is now concerned with the access and interaction of information. Students have an improved ability to share ideas, collaborate with other students and faculty, and access supplementary resources. There are countless ways to study the information as well as apply it to real life. It is easy to see the way that technology has begun to dramatically change the world of the textbook and the design of it. Not only have more technologically advanced programs and ideas been included in the actual text, but also a whole online portion has been added to this textbook.

This shows that our society has been greatly influenced by the advances in technology and that a wider audience is now wanting to and is able to learn about the basic principles of design. The authors and designers have done a fantastic job of updating and changing their textbook to keep up with the changing demands and requirements of a technology based society. There is an ever-increasing movement that believes that ‘universal knowledge is within our grasp’. This would involve digitizing all books, music, movies, software, etc. and making them

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available and accessible, for free, via the Internet. The progression of textbooks to online realms is but one fulfillment of this movement. As time progresses and technology continues to improve, this movements’ fulfillment will be seen even more.

Through the addition of an easier system of navigation throughout the book, to the addition of a glossary and bold words, this textbook has adapted to make the use of this book easier for its growing audience. Also, with the addition of more chapters, more diverse and new images, and the addition of the online portion of the text, this textbook has embraced the rapid growth of technology. I believe the authors and designers have done a truly amazing job of changing the necessary parts of their book to incorporate the larger, more diverse audience, and growing element of technology, without changing the basic principles and foundations of design that are found in the book. I also fully believe that as long as new editions of this book continue to come out, that the authors and designers will continue to stay up on and include the latest technologies as well as making their textbook appeal to and understandable to its ever growing audience.

**Technology and the Future**

As time goes on, some questions will continue to be crucial to graphic designers and their profession as a whole. They must ask themselves whose interests are served by any and every instance of graphic work. They must also ask themselves how design is involved with agendas of compulsion or education, as well as what effects are produced by the way information is profiled and accessed, stored and used. One thing that will dramatically affect the world of the

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graphic designer is the upcoming popularity of technology as a means to communicate materials that were once printed. Electronic versions of text and published materials are becoming more and more popular. This can easily be seen with the online portion that has been added to *Design Basics*.

Pilot programs are even beginning that test electronic versions of textbooks on e-readers and on students’ own laptops. Publishers have made more and more titles available online and many universities around the world have begun to play with the idea of e-textbooks. These e-books are not yet mainstream, but they are thought to be right on the edge of breaking into the mainstream (Butler 568). Proponents of tablet technology say that a broader use of tablets in the classroom is only a matter of time. The evolution of the e-textbook is greatly being enhanced by the evolution of technology. The displays produced by these e-readers are becoming more and more advanced so that the brightness and clarity of the text and image are beginning to rival that of ink on paper. This makes reading large amounts of text considerably more comfortable than reading the same text on the liquid crystal displays of laptops and desktop computers.

The advancement of technology will not only open up a new world for graphic designers, but it will also hopefully help in the process of learning. It has been reported that learning from books that include text and illustrations, as well as from computer-based environments that include on-screen text, illustrations, animations, and narrations result in a much better

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performance than from simply reading a text-only book. In 1988 Brian Cambourne came up with eight conditions of learning, which principles are embraced by education specialists, in all fields, as essential to factors of meaningful learning. These eight principles are: Immersion, Demonstration, Engagement, Expectations, Responsibility, Employment, Approximation, and Response. Each one of these eight principles is covered and addressed by at least few of e-textbooks design features. These eight principles greatly support and justify the design and development of a dynamic, interactive e-textbook.

One concern is what e-readers will do to facilities, such as libraries. Some public libraries, however are embracing the idea. They have started programs that allow individuals to utilize e-book checkout through downloads that are available at the libraries. Many people also wonder if e-readers will completely destroy the book and textbook printing industry, but many express the opinion that e-readers aren’t an either/or option. They are simply an additional way to access and read materials.

Two of the world’s largest educational publishers, McGraw-Hill and Pearson, are both in advanced contract discussions with Inkling, which is a San Francisco company that was founded by a former Apple manager. Inkling was founded to build interactive textbooks for the iPad. The vice president of McGraw-Hill’s higher education division, Vineet Madan, said this move is

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only a first phase in its plan to create more engaging learning experiences.\textsuperscript{21} The e-textbook market is ever growing. In 2011, MBS Service Co.’s said that, “Next year, e-textbook sales are expected to more than double to $308 million from about $138 million this year.”\textsuperscript{22} They also predict that by 2014, the United States digital textbook market will surpass 18 percent of new textbook sales in the higher education and career education markets combined.\textsuperscript{23}

One area that is really opening up some amazing opportunities for graphic designers is the development of magazines for the iPad. Many designers work in the area of layout and print design and this development could take them to the next level. No matter how complex and advanced technology becomes, there will always continue to be the basic elements of design that must be understood and utilized. The added development of interactivity also hold much potential. It will help with learning as well as education and designers can help those possibilities be utilized to their fullest potential. Although magazines and books may become electronic and interactive, someone must be behind the scenes solving problems of how to organize and convey the information, and that is where graphic designers come into play.

Many people may think that the evolution of technology is destroying many aspects of graphic design and making the designer less of a necessity. I think, however, that it is opening up amazing opportunities for designers. Designers can do so many things that were previously unheard of, if they use technology as a tool to help with their creativity. Graphic designers are able to solve complex problems by organizing content in a meaningful and effective way. I think


\textsuperscript{23} Novellino, T.
as technology increases and more and more things move to the digital world, that graphic
designers will be needed more and more to help all of this information be organized and stored.

Conclusion

As has been shown, the advancement of technology has brought the ability to design into
the hands of many more people, and designers are forced to adapt. This adaptation can be seen
in the changes that were made to Design Basics to make it more understandable and accessible to
the general audience as well as its inclusion of new technologies and its online portion.
Although this is just one textbook, I would argue that it is very representational of what all
textbooks should be going through. This study was very limited in its scope and simply focused
on some editions of one textbook, but I believe most of the same ideas of change would be found
if any other long-lasting series of textbook was studied.

Technology will continue to develop and evolve as the years go on and changes in design
will continue to be made to adapt to these developments. Graphic design has its foundations as
far back as the Stone Age, but it has never stayed in the past. I submit that design will continue
to evolve and change just as rapidly as technology does. Likewise textbooks, if designed well,
will continue to evolve to meet the rapid changes and growth of technology, as well as to meet
the needs of an ever-growing population of designers. Advances in technology are and will ever
be the driving force behind the changes that have taken place in the world of graphic design and
textbook design.


http://www.jstor.org/pss/40294448

http://online.wsj.com/article/SB10001424052748703905404576164702261714850.html


Author’s Biography

Danielle Renae Allen was born and raised in Twin Falls, Idaho. She attended Twin Falls High School until she graduated in May of 2008. While in high school she took many advanced placement classes and was a member of her schools’ National Honors Society. After graduating from high school, Danielle moved to Logan, Utah to attend school at Utah State University.

Danielle is majoring in art with an emphasis in graphic design. She completed this degree with honors. She will be graduating from Utah State with Honors in May of 2012 after attending Utah State for four consecutive years.

After graduation she plans on pursuing a job in the graphic design field. She plans on staying in the Logan, or general Salt Lake area. She hopes to be able to continue designing and solving design problems as long as she is able.