Internet-Based Student Research

Creating to Learn with
a Step-by-Step Approach,
Grades 5–12

By Jacqueline P. Keane

Edited by Carmen M. Walsh

Linworth Publishing, Inc.

Table of Contents

Student Handouts

Preface

Internet-Based Student Research: Creating to Learn with a Step-by-Step Approach is an outgrowth of the last seven years of my life as an educator. Some of those years were spent teaching in my own classroom, and some were spent working as a consultant, assisting teachers of all grade levels. This book addresses needs that my students and I identified, as well as other topics I've discussed with teachers, consultants, and administrators.

I wrote this book to inspire teachers to examine their present teaching methodologies and to challenge them to seek better ways of infusing instructional technology into their classrooms. It offers a new approach to teaching and learning that intertwines effective established teaching practices with the instructional technology that is already available in most schools.

The time has come for a teaching methodology that requires students to become innovative, self-reliant, creative, and productive. *Internet-Based Student Research: Creating to Learn with a Step-by-Step Approach* offers teachers and administrators a new and structured approach to project-based learning that covers required content standards, infuses instructional technology, and prepares students for state testing and for "real-world" activities while advancing their own individuality, creativity, and uniqueness.

Students thrive in the active learning environment that is created when the theories and philosophies presented in this book are implemented. Class time is focused on presenting students with intellectually stimulating questions and on encouraging them to construct their own answers to these questions. Students are then challenged to develop and create unique demonstrations of their understandings and opinions. The methodology in this book not only places students at the center of the learning environment, but also focuses on exploring their understanding of the subject matter while at the same time probing, defining, developing, and actualizing their individuality.

Internet-Based Student Research: Creating to Learn with a Step-by-Step Approach helps teachers explain to students in grades 5–12 how to use an active learning model when working on their projects. It demonstrates best practices for using instructional technology, providing clear step-by-step directions, to enrich students' projects—and learning—with the technology available to most educators today.

— Jacqueline Keane

About the Author

A classroom teacher, instructional technology facilitator, researcher, and writer, Jacqueline P. Keane has won respect and awards for her excellence and innovation. As a valued member of Ramapo Central School District's instructional technology team, she has been active in visiting and studying the instructional technology integration models of some of the most acclaimed districts in New York and throughout the country. She has also visited Georgia, Texas, California, and Louisiana to examine the instructional technology models being implemented in their schools.

Jackie started her career in education as a social studies/language arts teacher at Wareham Middle School in Massachusetts. Building on her experience as a classroom teacher, she then became an instructional technology facilitator for the Ramapo Central School District. In that position, she has had the opportunity to consult and collaborate with teachers across all disciplines and grade levels to design technology-rich curriculum units within her Creating to Learn framework (www.KeaneIdeasInc.com). These units employ instructional technology in an approach that advances students' information literacy, visual literacy, and technical literacy skills. Jackie has analyzed and collected quantitative data from students and staff regarding the strengths and weaknesses of her approach to these skills. Based on this data and extensive fieldwork, she has improved her processes and has had the opportunity to share her final work with building and district administrators as well as outside educational consultants.

After graduating from Sayville High School in Long Island, New York, Jackie pursued her studies at Providence College, where she majored in history and secondary education. She completed her Master of Education at Framingham State College with a concentration in curriculum development and instructional technology. Jackie recently finished a Certificate of Advanced Graduate Study at SUNY New Paltz with a concentration in educational leadership and administration.

About the Editor

Carmen M. Walsh is a writer, editor, and publication designer with intensive experience in education and health care. She brings to her projects a clear, audience-friendly writing style—effective whether the audience is a pharmaceutical company's executive management or a classroom of teenage students.

Through her business, Walsh Writing (www.walshwriting.com), Carmen works with a variety of clients, including pharmaceutical manufacturers, marketing research organizations, educational companies, and literary publishers. She helps her clients create and improve their written materials, including books, reports, newsletters, brochures, profiles, Web content, and PowerPoint presentations.

Carmen graduated summa cum laude from Towson University with a master's degree in professional writing. She has also served as an adjunct writing instructor at the university.

Acknowledgments

As you read through *Internet-Based Student Research: Creating to Learn with a Step-by-Step Approach*, you can see many of the exchanges that have influenced my writing and my creation of new ideas. I am grateful for all the efforts of students, teachers, administrators, and education professionals who assisted and challenged me.

In particular, I would like to thank my editor, Carmen Walsh, who worked long, hard hours to help me craft my manuscript into a smooth and attractive book design. Over the last two years, Carmen has lent her talent and editorial expertise to the project, and I am proud to say she has also become a friend, always offering words of encouragement and support.

I am extremely grateful to Ricky Swain, who at the last minute provided us with illustrations for the book. His artistic creativity was a perfect match for the theme and design of this book.

I am also grateful to my husband, Dave, who spent hours working with me on the manuscript. His ideas, questions, and insights helped me to further clarify my own thoughts on the subject material.

Special thanks also to Jamie McKenzie, who has been an invaluable mentor; his encouragement and enthusiasm have been a valued source of motivation. I would also like to thank my colleagues, including Patricia Carney, Eleanor Cerny, Jenn Chiaravalle, Angelique Edwards, Melani Hampel, and Kathy Higgins for such stimulating collegial conversations about instructional technology. Furthermore, I would like to thank John Collins for working with me and being my first guinea pig in field-testing the CIDE process.

I give special thanks to Marlene Woo-Lun and my friends at Linworth who eagerly embraced and got behind my ideas for this book.

Finally, I would like to thank my family: my brother and his wife, Dr. & Mrs. Michael P. Nett for their photography contributions; my parents, Dr. & Mrs. Patrick A. Nett, for encouraging me to "get up and dance"; and my youngest brother, Joseph A. Nett, for providing me the inspiration to keep on writing, when I saw him working on his own writing. I would also like to thank my grandmother, Huguette A. Nett, for inspiring me to be a strong, resilient woman.

The CIDE Process

Concept

Concept: A basic idea that, when developed, guides you to a deeper understanding of the topic.

Design: Choosing appropriate media to represent ideas about the concept.

Investigation

Design

Investigation: Researching, organizing, and analyzing facts to better understand the concept.

Execution

Execution: Carrying out the planned design, to communicate ideas about the concept to others.

Keane, *Internet-Based Student Research: Creating to Learn with a Step-by-Step Approach* © 2005.

i-1 Introduction to the CIDE Process

The Creating to Learn process will help you develop your research, organizational, visual, and technical skills, which in turn will help you not only with your projects, but also with all of your other studies.

The **CIDE** process breaks down projects into the following four phases:

Concept
Investigation
Design
Execution
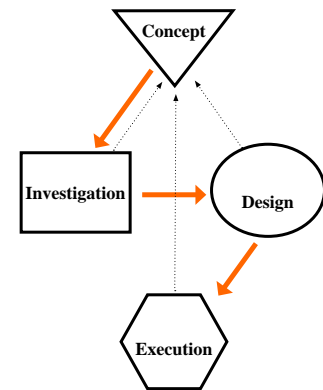
You will notice that in the diagram the phases are connected to each other, with both solid and dotted lines. The thick solid-line arrows show you the order you should follow when putting together your project. (You always start with the Concept and then move to Investigation, Design, and finally Execution.) The thinner dotted-line arrows connect all the phases back to the Concept, reminding you that every step of the project is built around exploring that idea. As you work on your project, you must constantly remind yourself of the question you are answering.

Concept
This is the question that your teacher asked you to think about. Your project should answer this question. This is one of the most important parts of the CIDE process. It is the question you start with, and you keep revisiting that question throughout the CIDE process.

Investigation
This part of the process requires you to do research, to find out information that will help you answer the question your teacher and the library media specialist assigned. As you progress through your research, you should collect, classify, and sort your data using the tools provided to you with Microsoft Office. This can be a tricky part of the CIDE process. You must spend a lot of time on this phase to make sure you research your topic completely and correctly, and ensure that all of the information you are finding is accurate, by double-checking your sources. You should work closely with the library media specialist during this part of the project. He or she will be able to guide you and help you locate scholarly information.

Design
This part of the process asks you to plan how your project will be built, by creating a rough draft or scrap copy. You will decide what type of project to build and what design elements can be effective in various types of projects. You are creating a blueprint for your final project.

Execution
This last phase of the process is when you actually get to build your project. By following the blueprint you created in the Design phase, you express your answer to the teacher's question in a unique and creative way. The Execution phase is the creation phase: It is the realization of your own knowledge entity that answers the question posed in the Concept.

Planning Your Project

On the opposite page is a table with a suggested time line for the completion of a knowledge entity. But for each teacher, teaching style, and learning style, the project will unfold uniquely. Don't worry if you can't follow the time allotted in the table. You should probably develop your own timetable for your project, depending on the complexity of your concept and topic. The table is here as a guide only.

For instance, if the concept is the cornerstone of your curriculum and is essential to understanding the rest of the curriculum, you may want to spend some substantial time developing your knowledge entities. You need to ask yourself before beginning the project, "How important is this concept to the heart of the subject matter?" If the concept is truly the cornerstone in the curriculum, you may want to dedicate the entire year to exploring it. That doesn't mean that you work on it every day, but that it would be an ongoing project.

You might want to review this timetable with your library media specialists as well. Invite the library media specialists into your classroom to help you with the Investigation phase. Ask them how many days they would need to work with you and your students.

This table outlines the stages that you go through with your students when creating a knowledge entity and also estimates the amount of time that could be spent at each stage. Again, the table is a guide and may change according to your teaching style and your students' learning needs.

Time-Saving Tips

1. **Use software your students already know.** If your students are used to using Inspiration® instead of CmapTools™, use Inspiration. They are both great mind-mapping tools.

2. **Use outside class time.** Older students can complete a lot of their research at home after learning a few key tips about searching the Internet.

3. **Create deadlines and milestones**. I can't stress how important it is to spot-check your students' progress throughout the project. You also may want to give your students separate deadlines to complete the Investigation and Design phases. This will save you time in the end.

4. **Make sure your students know how to save their work correctly!** Many students don't have any practice in file management. They need to create a folder for the knowledge entity on their computer and save all their work for the project there. You don't want students saving their work all over the school's network; they may never be able to locate it again.
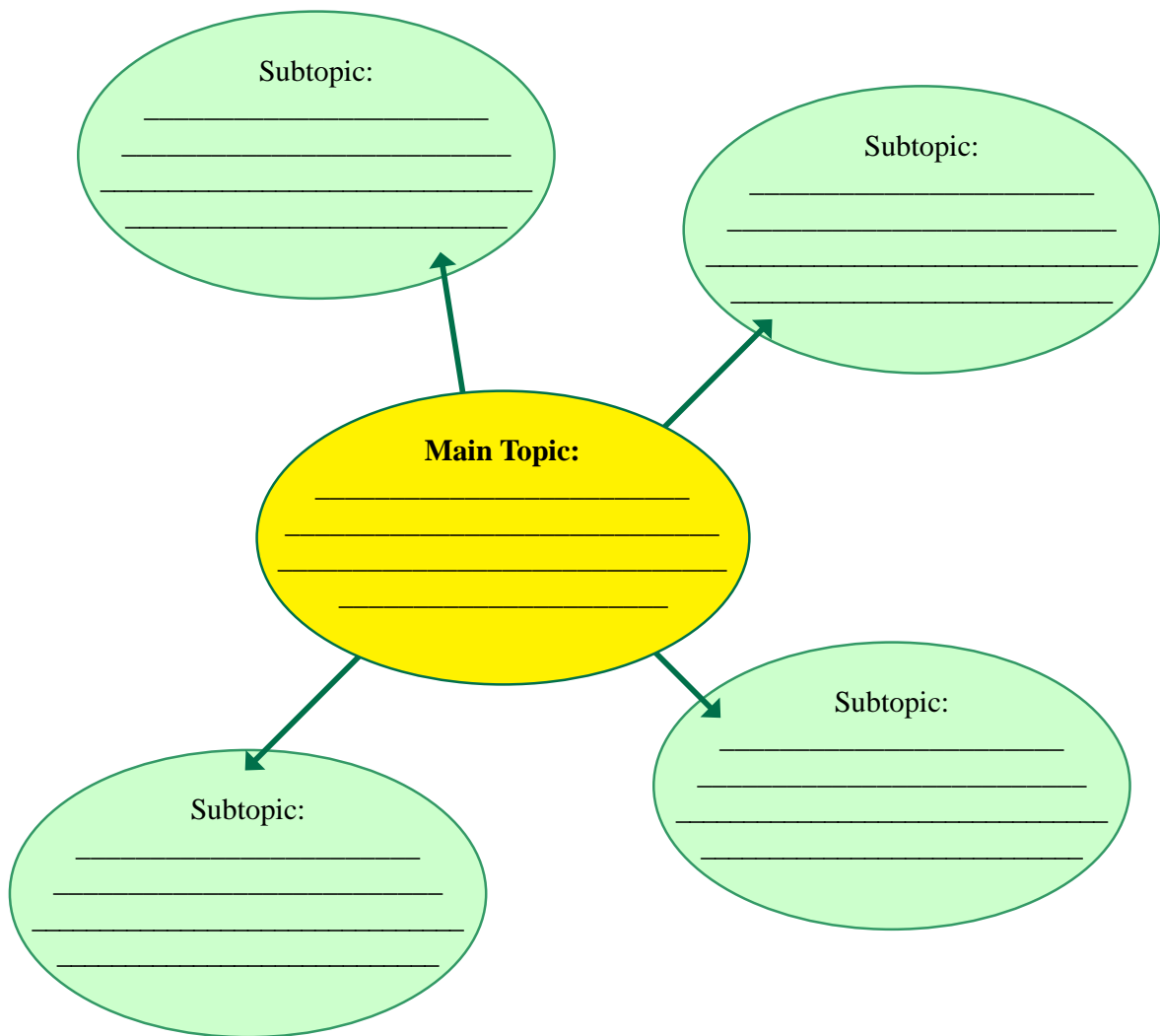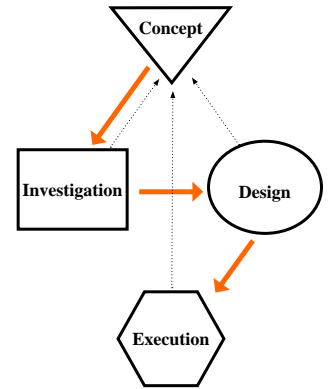
Suggested Time Line for Completing a Knowledge Entity

Stage	Est. Time	Recommended Handouts
Before the project starts: • Introduction to the unit and to the personal journal • Introduction to the CIDE process and the concept	2–3 days	i-1 Introduction to the CIDE Process
Prewriting, brainstorming, and concept mapping	2 days (1 to learn the software and 1 to prewrite)	Handouts on CmapTools™ software. I-1 Your Research Process Diagram
Investigation • Introduction to library media specialist • Explanation of online databases and print resources • Introduction to online databases • Explanation of targeted searching • Introduction to the visible and invisible Web • Authentication • Organization	6–7 days	Popular Online Directories Table I-2 Online Directories I-3 Reflect on Online Browsing I-4 Boolean Operators I-5 Reflect on Search Engines I-6 Reflect on Metasearch Engines I-7 Reflect on the Invisible Web I-8 The Top 10 Online Searching Strategies I-9 Reflect on the Investigation Section Research Checklist Savvy Investigation Checklist
Design: Explanation of project choices	1 day	Project Choices Checklist
Global design principles	3–4 days	D-1 Choosing the Right Medium D-2 Introduction to Design D-3 Location, Location, Location! D-4 Redirecting a Reader's Attention D-5 Types of Visual Expression D-6 Choosing Font Types and Attributes Global Design Principles Checklist
Blueprints: Creating thumbnail sketches, storyboards, and albums	3–5 days	D-7 Outlines: Organizing Your Presentation D-8 Dissecting a Newsletter D-9 Creating a Magazine Cover Page D-10 Learning to Become a Photographer D-11 A Photographer's Journal Sample storyboards
Spot-checks of outlines, sketches, and storyboards/albums	1 day	Project Blueprint Checklist
Execution: Putting together the final project, assessment and testing	5 days	E-1 Delivering Your Presentation E-2 Tips for Better Digital Photography Any other instructions to help your students complete their knowledge entities.
Concluding activities	1–3 days	
Total class time	**24–31 days**	

I-1 Your Research Process Diagram

Directions: Use the diagram below to begin prewriting.

Write your research topic in the center bubble. Then fill in each connected bubble with a related subtopic, question, or phrase. (It's okay if you have more than four subtopics. Just draw more bubbles.)

Concept

Investigation → Design

Execution

Subtopic:
_____
_____
_____
_____

Subtopic:
_____
_____
_____
_____

Main Topic:
_____
_____
_____
_____

Subtopic:
_____
_____
_____
_____

Subtopic:
_____
_____
_____
_____

Tracking Ideas Visually

Help from CmapTools™

CmapTools™ is a great tool to introduce to your students. With this freeware, they can construct graphic organizers on their personal computers. According to its Web site (http://cmap.ihmc.us), the CmapTools program "empowers users to construct, navigate, share, and criticize knowledge models represented as Concept Maps." As students become more proficient in its use, they can share their graphic organizers on the CmapTools servers, link their maps to other Cmaps on the servers, automatically create Web pages of their concept maps, and even edit their maps at the same time with other users on the Internet! It is a cool tool that will help your students create and share their own graphic organizers, as well as view other graphic organizers that have been created about their topics.

Play around with the program to familiarize yourself with its features and capabilities. Here are some basic instructions to get you and your students started:

1. Type "http://cmap.ihmc.us" in the Internet Explorer address bar to access the CmapTools Web site.
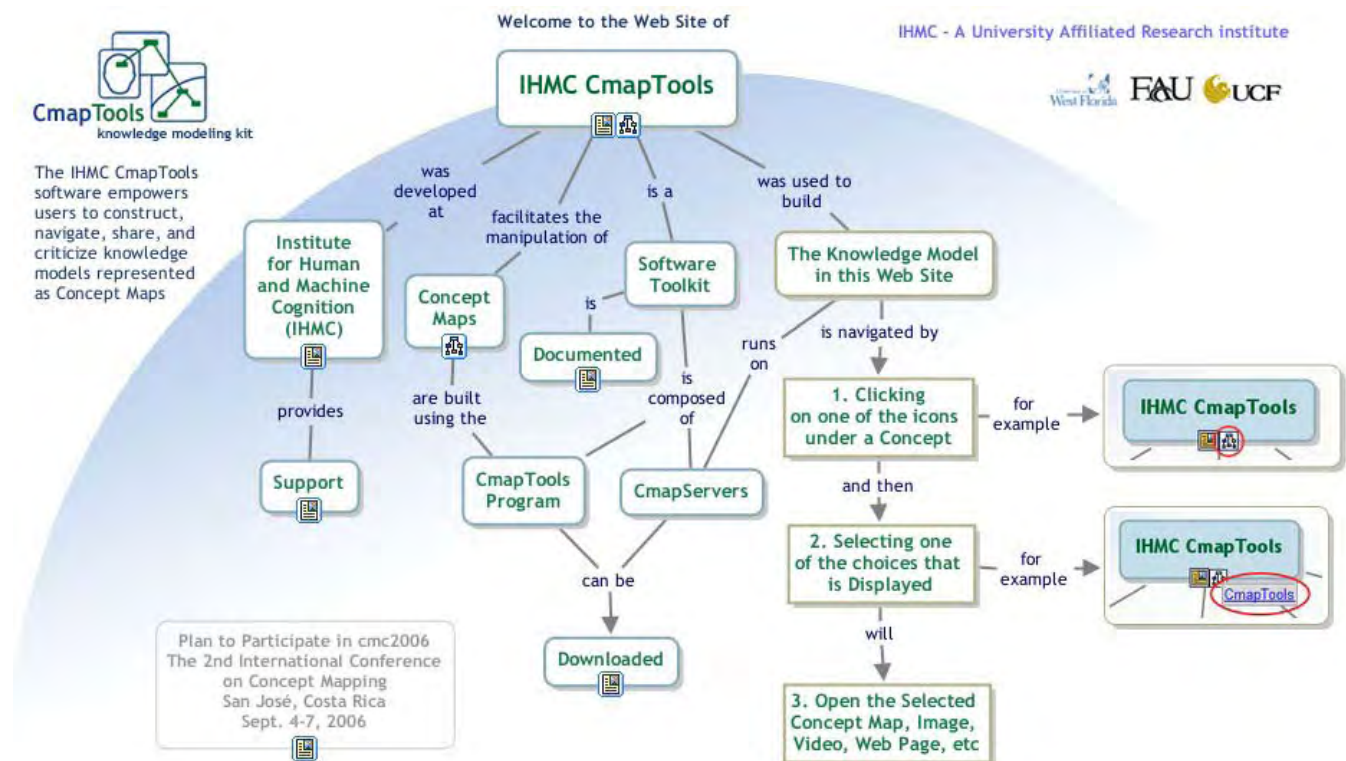
D-4 Redirecting a Reader's Attention

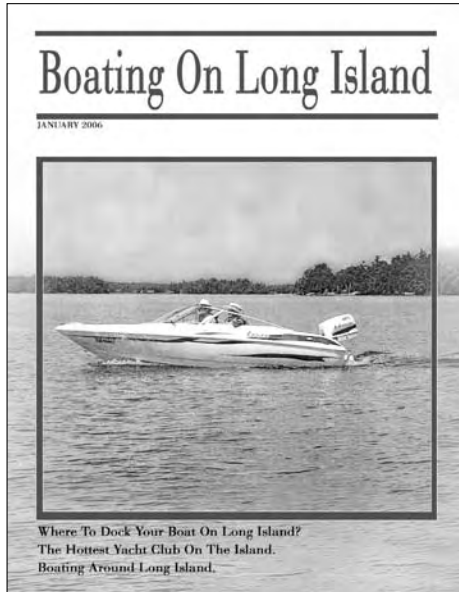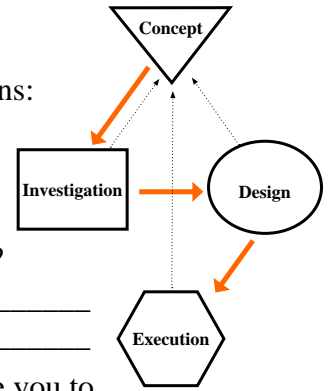**Directions:** Look at the following magazine covers and answer the questions:

Figure A

1. In **Figure A**, which direction does the action photograph lead your eye?

_____

_____

• Does this altered scan pattern cause you to miss any key information on the page? If so, what?_____

_____

2. Why do you want to scan **Figure B** more than once? _____

_____

_____

• How does the publisher redirect your attention to the Visual Center? _____

_____

_____
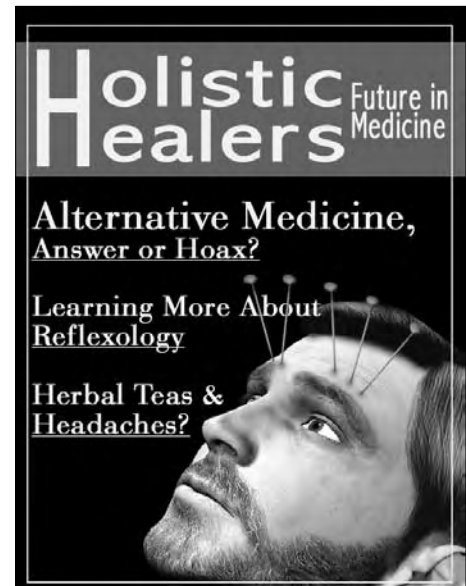

Figure B

• How does the publisher organize the page so the images and text work together to emphasize the feature article? _____

_____

_____

_____

_____

See how powerful lines, images, and graphics can force your eye to abandon its natural scanning pattern?

Notice how the *Holistic Healers* publisher strategically placed the man looking up at the key feature of this issue's publication, "Alternative Medicine, Answer or Hoax?"

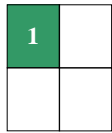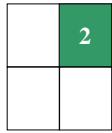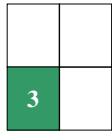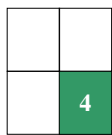*Remember the *Surfing on Fire Island* cover on Handout D-2?

Now can you explain why the boy is holding the surfboard at an angle rather than vertically?

_____

_____

Keane, *Internet-Based Student Research: Creating to Learn with a Step-by-Step Approach* © 2005.

The "Hot Areas" of a Page

Using the visual center, you can divide a page into four quadrants. Each quadrant of a cover page serves a different purpose, depending on the amount of time the reader's eye spends there and its order in the eye's natural scanning pattern. In his book *Designing for Communication: The Key to Successful Desktop Publishing*, McCain defines the "hot areas" of the page where the eye lingers (1992).

The table below is based on many of the principles Ted McCain discusses in his book. It helps students identify the quadrants and provides tips on how to best use each quadrant in the layout of a cover page.

The Four Quadrants

Quadrant (Approximate location)	Time spent	How to best utilize the quadrant in a cover page
1	35 %	Key components of the layout, like the main idea. Headlines or captivating photographs are usually placed here.
2	25%	Support the main idea. Introduce secondary themes.
3	25%	Support the main idea. Introduce secondary themes.
4	15%	Although it receives the least amount of time, it deserves attention. It leaves a lasting impression with the reader. Use this space to keep the reader's focus on the page or redirect it back to the visual center.

Appropriate Visual Expression

Another fundamental principle of design is the use of visual expressions—to communicate the theme of the written words and to leave the reader with a lasting visual memory.

Photographs, color schemes, charts, illustrative diagrams, lines, and graphic artwork can dramatically enhance and complement written text when used correctly. But if used haphazardly, these visual expressions can distract the reader from the text's main idea. When visual expressions don't work, it is often because they are inconsistent with the tone of the rest of the publication.

Remember, visual expression is most effective when it is consistent with the tone and meaning of the text it accompanies—and when it is used in moderation. Make sure your students don't get carried away. But there is a lot of room for artistic freedom when using visual expression. In fact, many consider this aspect of the publisher's role the most creative. So you and your students should have some fun with it! Distribute Handout D-5 and talk about each of the elements that make up visual expression.

In PowerPoint, you have the option to use one of its prepared color schemes. On the Formatting palette under the slides, you will see a drop-down menu for "Color Scheme." Before selecting your color scheme from these choices, make sure you understand how they work:

Prepared color schemes

- The first color is the background color for the slide.
- The second color is the primary text and line color.
- The third color is the shadows scheme color.
- The sixth color is the hyperlink color.
- The other colors in the color scheme palette are seldom used.

Your students can also create a custom color scheme to demonstrate their creativity. You may want to insist on this as part of your students' assignment. (The custom option is at the bottom of the scheme list.)
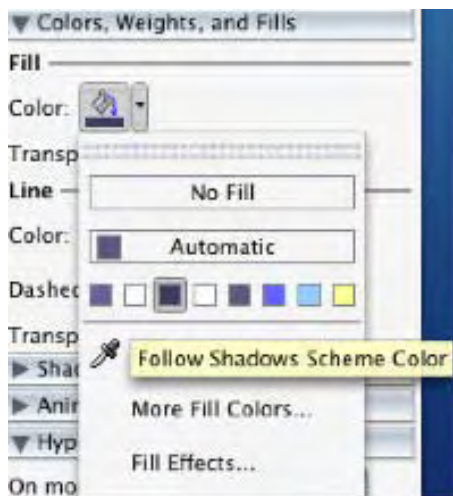
Adding Color to a Text Frame

1. Select the text frame by clicking on it. Be sure the selection handles are displayed.
2. Use the Formatting palette and select "Colors," "Weights," and "Fills."
3. Select the paint brush icon; a drop-down menu of colors will appear.
4. Select the color you want for the background of the text box.

Instead of using the Formatting palette to add color to a text box, you can right-click on the text box.

Working with Pictures

Creating Picture Frames

To add a picture to a presentation, you need to create a picture frame. Once a picture frame is created, you can edit its size, position, and coloring.

1. Begin by clicking on the appropriate icon located on the Drawing toolbar. If you wish to insert a photograph or image from your own files click on the icon; if you wish to insert clip art, click on the icon. The cursor now appears as a +, rather than the standard arrow.

2. To add the picture frame, click on the page and drag the cursor down until the box is about the shape and size you wish. When you release the cursor, the picture frame is ready and you can begin adding pictures by double-clicking on the picture frame. If you selected the Clip Art Gallery tool, the menu will prompt you to select the appropriate clip art.

Notice you now have the Picture toolbar available to you for editing the appearance of the image.

A word about clip art: It is imperative that students are not allowed to turn in clip art as part of their "original" work. It "deprives them of the synergistic access to both sides of their brain (drawing images from the right side of the brain, drawing words from the left.) Meltzer provides a helpful comparison in the table below" (Burmark, 2002, p. 13).

Use of Original Artwork	Use of Clip Art
Ownership of work	No ownership of work
Growth	No growth
Self-expression	No self-expression
Acceptance of student's work	Unintended criticism of student
Gain in self-confidence	No gain in self-confidence
Learn observation skills	No observation skills learned
Learn more computer skills	Learn fewer computer skills
Unique products	Canned look
Cohesive style	Possible mishmash of styles
Creative experience	Not a creative experience
Extensive decision making	Minimal decision making

Editing Pictures

To edit or add special effects to the pictures, use the "Effects" icon in the Picture toolbar. For example, think about how recoloring a picture in black and white or in grayscale could change the tone and mood of your publication.

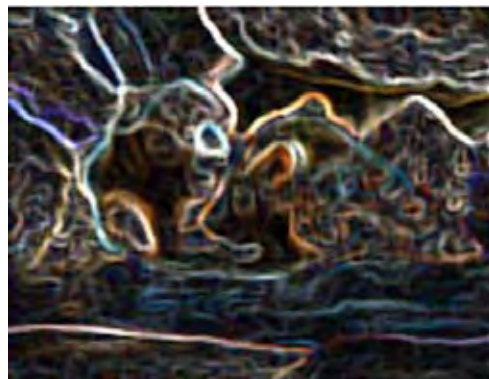Study the pictures below. Decide which effect would be better for a particular message.

Fully colored picture with no special effects

Picture with graphic pen, right diagonal stroke

Picture with ripple effect

Picture with glowing edges