

California State University, San Bernardino

CSUSB ScholarWorks

Theses Digitization Project

John M. Pfau Library

2004

Web tools: An aid for cognitive learning

Shari Ann Pate

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd-project>



Part of the [Instructional Media Design Commons](#)

Recommended Citation

Pate, Shari Ann, "Web tools: An aid for cognitive learning" (2004). *Theses Digitization Project*. 2777.
<https://scholarworks.lib.csusb.edu/etd-project/2777>

This Project is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

WEB TOOLS
AN AID FOR COGNITIVE LEARNING

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Instructional Technology

by
Shari Ann Pate
March 2004

WEB TOOLS
AN AID FOR COGNITIVE LEARNING


A Project
Presented to the
Faculty of
California State University,
San Bernardino

by
Shari Ann Pate
March 2004

Approved by:


Dr. Eun-Ok Baek, First Reader

2/12/04
Date


Dr. Brian Newberry, Second Reader

[Handwritten mark]

© 2004 Shari Ann Pate

ABSTRACT

Instructional Technology is still in the "New Frontier" stage. One of the components of Instructional Technology is online learning. Online learning consists of a wide variety of components, but the one this paper addresses is Web Design Tools. The enclosed literature review discusses and validates the importance of computer skills and cognitive and multiple intelligences skills. Some of the articles theorize about design structure components but they do not address availability of reliable sources and resources for development of viable, eye catching, Web pages. In relational terms, they give you the paper but not the pencil; theory alone will not work.

The purpose of this project is to provide students and teachers with a disk of tools to aide in the development of Web pages either in the classroom or through online (distance education) learning. Many of the tools supplied on this disk have been field tested in a high school Web design class. When students are allowed to be creative and are able to infuse interesting visual displays, the results can be significant in increasing cognitive and multiple intelligences skills.

ACKNOWLEDGMENTS

I would like to take this opportunity to thank Mrs. Tootie Killingsworth, MA. Mrs. Killingsworth is the Assistant Dean at the Palm Desert Campus. She is an incredible, extraordinary person that has only the best interest of all students in mind. Without her contagious energy, I would not have completed the Single Subject Credential Program, let alone start the Master's Program. Thanks again Mrs. Killingsworth for being there and for your friendship.

I would also like to thank my readers. I would like to thank Dr. Eun-Ok Baek for her tireless effort in working with me to finish this thesis; without her help I would have given up. I would also like to thank my second reader, Dr. Brian Newberry, for taking valuable time to read this thesis.

DEDICATION

This thesis is dedicated to my parents, Dr. Billie H. Pate, and Dorothy Pate, MA. Being raised in a highly educated household with encouragement to continue my education has created an insatiable thirst for learning in me. Thanks father and mother for all you have done.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	iv
CHAPTER ONE: BACKGROUND	
Introduction	1
Purpose of the Project	3
Significance of the Project	3
Assumptions	4
Limitations and Delimitations	4
Limitations	4
Delimitations	5
Definition of Terms	6
Organization of the Thesis	8
CHAPTER TWO: REVIEW OF THE LITERATURE	
Introduction	9
Computer Based Cognitive Tools.	9
Design	10
Integration	12
Students' Self-efficacy	13
Multiple Intelligences and the Web-based Instruction	14
Summary	18
CHAPTER THREE: DESIGN PROCESSES	
Introduction	20

Analysis	20
Population Served	24
Design	24
Development	26
Resources and Content Validation	27
Implementation	28
Evaluation	31
Summary	34
CHAPTER FOUR: CONCLUSIONS AND RECOMMENDATIONS	
Introduction	37
Conclusions	37
Results	37
Lessons Learned	38
Recommendations	40
Distance Education	40
Additional Web Tools	41
Summary	47
APPENDIX A: RECOMMENDED WEB SITES	49
APPENDIX B: COMPACT DISK TABLE OF CONTENTS	54
APPENDIX C: PROJECT COMPACT DISK	72
REFERENCES	74

CHAPTER ONE

BACKGROUND

Introduction

Web design is one of the constantly changing areas in computer technology on the Internet. It can provide a medium of teaching in a classroom or through distance education. The benefits are enormous but this thesis concentrates on Web page design in the classroom and through distance education. The reason this is so important is because it creates an opportunity to develop and improve cognitive skills and multiple intelligences skills in students. Any opportunity to enhance the knowledge of students is well worth the effort.

Looking at what has occurred historically with the development of Web pages only leads to more questions. What is the targeted audience? Does the site meet the needs of that user group? Another aspect is content; is the information correct, biased, static or updated, and are the links to other sites current and appropriate? What is the quality of writing? Is the site interesting to look at? Do the visual effects enhance the aesthetics of the site or distract? If audio, video or other multimedia or graphic effects are used, are they appropriate to the site being

developed? Are CGI (Common Gateway Interface) scripts or forms being used? If so, are they appropriate to the site? Is the site easily accessible and/or does one need additional software to view all or part of the page? If the user of the site does not have the necessary application installed on their computer for viewing the multimedia being presented, they will not be able to view what is on the page. While all of these questions are not answered individually, through a combination of criteria requirements for Web page project development, utilizing the compact data disk, all of the questions are indirectly addressed.

In compiling the data for this thesis I was confronted with, along with a single source of sufficient Web tools, the lack of Web tool articles. Most reference material referred to the development aspects of Web page creation. Web tools, although scattered, appeared to be for the most part, sources for Web page enhancements. These Web tools, if correctly incorporated into the classroom curriculum can create an environment where students utilize cognitive and multiple intelligences skills. As a result, this thesis will address cognitive and multiple intelligences skills and how they can effectively support Web design projects and computer based curriculum. This thesis will also provide a source of sites that contain various Web page tools, and a

Web tool CD (Compact disk) for use in the classroom or in distance education.

Purpose of the Project

The path to higher learning is through the development of cognitive skills and multiple intelligences skills.

Students are more apt to learn if they are interested in and own the work they have to create.

The purpose of this project is to provide sites that, through research, were found to contain valid tools, and to aid in increasing cognitive ability by developing a Web tool CD to be used as a research vehicle for students in developing or enhancing the design of a Web page.

Significance of the Project

The study is to address how cognitive and multiple intelligences skills can be utilized in the development of Web page design. The significance of this project is to confirm that, whether talking about cognitive or multiple intelligences skills, learners of Web design can use a CD with design tools for the creation of Web pages, either in the classroom or through distance education, and increase the above skills. Additionally, by using the CD, a self-contained environment conducive to learning can be created.

Assumptions

The following assumptions are made regarding the project:

1. To avoid having to surf the Internet and risk ending up on a site that is inappropriate for the educational environment, there is a need for Web tools support centrally located in one area.
2. These tools need to be available via a CD for classroom instruction (Internets do go down), and for distance education.
3. Because Web design is dependent on HTML, and JavaScript is not HTML code but rather a different source code that is added to existing HTML code, students or teachers utilizing the CD need to have a basic knowledge of HTML.

Limitations and Delimitations

During the development of the project, a few limitations and delimitations were noted. These limitations and delimitations are presented in the following section.

Limitations

The following limitations apply to the project:

1. Since there are so many unacceptable and "fly-by-night" sites, only credible, long-standing Web

sites are used as examples. Since Web design is constantly fluctuating, there are additional sites, some which may be credible, added daily to the Internet. None of these newer sites have been reviewed or included in this project.

2. Data from the CD can be viewed in Notepad or through the use of an authoring tool. To effectively design and create a site utilizing the data CD, an authoring tool is highly recommended.
3. Teachers available for CD evaluation were limited to educators at Cathedral City High School. Since their Web design skills were none to limited, these teachers evaluated mainly for ease of accessibility.
4. Since there wasn't an available environment, distance learning is not included in the implementation and evaluation stages of the design process. Thus, there is no feedback from a distance education environment.

Delimitations

The following delimitations apply to the project:

1. It is up to the user to decide which Authoring tool they want to use to access the CD.

2. The CD is designed for college students and high school juniors and seniors.
3. The research is confined to intelligences skills and how they can be utilized through computer learning, thus, the CD.

Definition of Terms

The following terms are used in the thesis. Many will be referred to by their abbreviations.

1. Cascading Style Sheets (CSS) - These are external files in which you specify colors, fonts sizes, etc.
2. Common Gateway Interface (CGI) - This is the Internet standard for sending information (such as a request or response) to a Web server. Generally used to handle information generated by forms in Web sites.
3. Dynamic Hypertext Markup Language (DHTML) - This has been named with the word dynamic because it upgrades the original HTML to include additional tools, such as, rollover buttons.
4. Frames - A Web site design method whereby two or more Web pages are viewed as one page divided into distinct areas or frames. Usually one frame

remains static while the other changes. Frames are often used as a Web site navigation method.

5. Hypertext Markup Language (HTML) - This is a programming language for web page design.
6. Image Map - A graphic on a Web page that is divided into parts which link to different Web pages.
7. Layer - A piece of the system in which components are grouped (layered) in a hierarchical arrangement, such that lower layers provide functions and services that support the functions and services of higher layers.
8. Scripting Language - A scripting language is a simple programming language used to write an executable list of commands, called a script. JavaScript is a scripting language.
9. Source Code - Source code is a language from which statements are translated. Programs written by programmers are from source language programs.
10. Structured Query Language (SQL) - SQL is the most popular database language in the world.

Organization of the Thesis

The thesis portion of the project is divided into four chapters. Chapter One provides an introduction to the context of the problem, purpose of the project, significance of the project, assumptions, limitations and delimitations and definitions of terms. Chapter Two consists of a review of relevant literature. Chapter Three documents the steps used in developing the project. Chapter Four presents the conclusions and recommendations from the project. Project references follow Chapter Four. The Appendices for the project consists of: Appendix A RECOMMENDED WEB SITES, Appendix B COMPACT DISK TABLE OF CONTENTS, and Appendix C PROJECT COMPACT DISK. Finally, the last section is the Project References.

CHAPTER TWO
REVIEW OF THE LITERATURE

Introduction

Instructional design refers to the systematic process of translating principles of learning and instruction into plans for instructional materials and activities. The instructional designer must understand the needs and capabilities of the programmer and available tools. Although different models are followed by designers in their work, some emphasize the importance of "learning by doing," "providing experience," and "learning from mistakes" in approaching design (Liu, Gibby, Quiros, Demps, 2002). All of this leads to, and is synonymous with, designing computer based cognitive tools. These computer tools can aid in developing the student's cognitive skills and abilities. Additionally, utilizing the principles of Gardner's Multiple Intelligence Theory and the dynamics of the Internet allow instructional designers to develop learning experiences that are diversified, exploratory, guided, and soundly constructed (Osciak & Milheim, 2001).

Computer Based Cognitive Tools

What are cognitive tools? In order to answer this question one has to look at the functional aspects of the

tool, the pedagogical and functional issues that influence their construction (Kennedy, McNaught, 2001), and the best utilization of the tool. Cognitive tools include both mental and computational devices that support, guide, and extend the cognitive process of learners (Iiyoshi, Hannafin, 2002). A good tool will engage the student actively, support a deep approach to learning, provide support for a student to articulate her or his knowledge (Kennedy, McNaught, 2001), and it will be embedded in an educational environment or context with a particular educational intent. These tools are not inherently cognitive independent of the method in which they are used; their functions may vary depending upon the manner and context of their use.

Cognitive strategies need to focus on the development of tools that encourage the creation and solving of complex problems. These strategies need designed instructional activities around a problem-based situation where the learner can explore the new material. Thus, learning is undertaken when the student is engaged in a meaningful task, and this learning is significant when the content is relevant to the learner.

Design

A tool designed properly can scaffold learning by modeling problem-solving strategies. Cognitive tools

support learners as they attempt to understand the information they encounter. These tools allow learners to access, then, represent information in varied ways. Too much user information is frequently encountered in open-ended learning systems. Consequently they are often unable to identify or establish relationships among information (Iiyoshi, Hannafin, 2002). Thus, the cognitive load needs to be taken into account when designing instructional materials. The cognitive load that is experienced by a student can be made up of three types: intrinsic, extraneous, and germane. There is a high intrinsic load in computer programming and, therefore, it is necessary to, by using techniques such as the study of programming examples, reduce the extraneous load as much as possible. By removing certain parts of the solutions to the examples, germane cognitive load can then be applied. Next require students to complete these part-complete solutions thereby encouraging schemata creation in long-term memory (Garner, 2002).

Jerome Bruner, who is largely credited with the emergence of constructivism, emphasizes three main principles from a design point of view. These are; (a) instruction can be concerned with the experiences, convictions, and constructs that learners already possess,

(b) instruction can be structured so that it can be easily understood and modified by the learner and, (d) instruction can be designed to facilitate exploration, extrapolation, and elaboration (Campbell, 1999).

Integration

Knowledge-integration tools support the connecting of new knowledge with existing knowledge. Cognitive tools can facilitate conceptual understanding by supporting the testing of presumed relationships between newly organized knowledge and existing knowledge. Computer tools may be especially useful in executing lower-level, tedious computational and graphic operations, allowing the learner to focus on other criteria.

According to Gillani (1998), as Web design continues making inroads in page design, we need to find ways to make educational sites more effective by applying a process that would allow instructors to integrate various components of the Web into their Web-based instruction (Gillani, 1998). There have been enormous advances in technology with multimedia, the Web, the Internet, and hypertext. Gillani (1998) has also stated that instructional design has emerged as the guiding force for software, multimedia, and Web development.

Environments that promote active learning are based on learners making decisions about task, content, navigation, presentation, and assessment. These environments make use of a number of cognitive strategies that help the learner to elaborate on their own schema.

Students' Self-efficacy

Self-efficacy can be defined as an individual's estimate or personal judgment of his or her own ability to succeed in reaching a specific goal. Self-efficacy plays a significant role in predicting academic achievement. Pintrich and DeGroot (1990) suggested that the improvement of students' self-efficacy beliefs leads to increased use of cognitive and meta-cognitive strategies and, thereby, higher academic performance.

According to Bandura (1986), individuals acquire information to help them assess self-efficacy from four principal sources; (a) vicarious experiences, (b) actual experiences, (c) physiological indexes, and (d) verbal persuasion. Vicarious experiences are gained by observing the modeling of others, such as the instructor or other students; actual experiences (performance accomplishments) would be a student's personal assessment based on their personal mastery accomplishments; physiological indexes would be the student's physiological or emotional states

influencing self-efficacy judgments with respect to specific tasks; and, coaching and giving feedback would be examples of verbal persuasion. In order to improve students' self-efficacy beliefs with online technologies, instructors need to increase the four sources of students' self-efficacy appraisal (Miltiadou & Savenye, 2003).

Student self-efficacy is well represented in Web design utilizing Web tools. If Web pages are project-based students can work with minimal teacher input and rely heavily on their own abilities and initiative to create sites.

Multiple Intelligences and the Web-based Instruction

A task to consider before embracing any new technology is to establish the educational goals and display how that particular technology can help achieve them. Ensuring that adequate technical assistance is provided so that the technology is deployed effectively is an equally important task (Weiss, 2000).

Designing instruction for learner populations who choose to learn via Web designed curriculum, presents an opportunity to apply Howard Gardner's Theory of Multiple Intelligences. Applying these intelligences to Web

curriculum could be as follows:

1. Linguistic - Relating to language, words and verbal expressions. Web usage would be accessing online libraries, research through journals, and email.
2. Logical-Mathematical - This is defined as sequential, deductive (logic and reason) and problem solving. Web tool usage would be Java games, accessing databases, and programming.
3. Spatial - Defined as dimensional relationships, color, and holistic and contextual reasoning. Web examples would be virtual reality sites, clip art, colorful web page displays, and video bites.
4. Bodily-Kinesthetic - Relating to hands and body movement for expressions, coordinated movement, and model building. Web tool relationships would be basic keyboarding skills, Gaming Zone, NCAA online, and most games.
5. Musical - Musical would be to hear, recognize, remember, manipulate and create sounds and patterns of music. Sound files embedded in Web pages would be a classic example of this intelligence.

6. Intrapersonal - Defined to be self understand, reflective and personal power. Web examples would be personal Web pages, and thoughts and reflections expressed through email.
7. Interpersonal - To understand and produce well with others, make connections. Internet tools would be online discussion groups and electronic villages.
8. Naturalistic - To discriminate among living things and sensitivity to features of nature. Electronic field trips and Save the Environment sites would be examples of Web usage.

Multiple Intelligences is most positive for two educational ends; (a) enabling students to realize desired results by the planning of educational programs that will allow this to occur, and (b) it aids instructors in reaching more students who are trying to understand important concepts and theories in the disciplines (Hopper & Hurry, 2000).

Through the general design of course content, the use of specific instructional activities, general communication, and improved participant interaction, the appropriate use of these eight intelligences will also increase the likelihood that the learner will retain new knowledge and remain an

active learner during the entire instructional process (Osciak & Milheim, 2001).

With its user friendliness and accessibility, by providing a forum where all intelligences can be represented and cultivated regardless of the physical location of the student, Web-based instruction is probably one of the most flexible types of instruction (Nelson, 1998). Even when just typing a letter, poem, report, or composing music on a keyboard a student can think in spatial, musical, linguistic, or bodily intelligences.

For people who are charged with designing educational materials using technology, multisensory input is particularly important (Weiss, 2000). The use of CD's, videodiscs, and hypermedia actively engage a number of sensory systems and intelligences. When linking this technology with distance education, some may assume that everything can be learned equally as well as in the classroom! These educational materials may need to be modified for this type of learning. Despite this potential problem, there are means for instructors to efficiently examine learners' work. Thus, the challenge to live instructors and creators of electronic education is to figure out what is best achieved by a person teaching

face-to-face in a classroom and what can best be achieved through distance learning (Weiss, 2000).

According to Gardner electronic media will become increasingly friendlier and will adjust to the needs of learners (Weiss, 2000). However, Gardner doesn't believe disciplinary thinking can be wholly assumed by electronic media because much knowledge is tacit and implicit, and counter to our own intuitions. This can be true in some instances but not when instruction is meant for high-level high school learners or college students.

Summary

With the current shift towards more Web based instruction, instructional designers must work to achieve their instructional goals by using a broad variety of instructional methods. The challenge of the current instructional designer is to create educational materials that are instructionally sound while delivered effectively through the intended media. Educational professionals can make better decisions concerning the design and delivery of effective instruction by being informed about Multiple Intelligence Theory and its applications to various instructional environments.

Effective learning can occur with increased awareness about the learning process, increased emphasis on individual learning processes, and by stimulating the active learning process. Awareness of student self-efficacy is important because it plays an important role in the individual learning process.

Multiple opportunities should be provided to allow for students to learn and demonstrate their learning through all intelligences.

Gardner says that a marriage of technology and education could be a happy marriage only if those responsible for this type of education remain clear on what they want to achieve and remain heedful that the technology serves those ends (Weiss, 2000).

Learning environments that are learner centered, authentic, problem-based and collaborate (group work) can be obtained through the use of Web tools.

CHAPTER THREE

DESIGN PROCESSES

Introduction

In developing this project the goals and objectives need to be determined through analysis; and during the analysis phase the population being served has to be considered. Next the design process needs evaluation such as, identifying instructional outcomes, determining the purpose of the project, and instructional development. Following the design process is the development of the project. In this section the search for valid Web sites with resources that can be used in a high school or an extended education environment needs to be found. Next, the files obtained from the various sites need resource and content validation by being field-tested through their incorporation into Web pages. Then, implementing the project through training and learner preparation needs to occur. Finally, the project will be evaluated. This will entail CD relevance, learner impact, comfort level, and cost.

Analysis

The objective of this project is to provide a CD of Web tools to aid in the creation of Web pages. The goal is to

increase cognitive learning (both mental and computational) via completion of projects that involve the creation and solving of complex problems. For example, by determining how and where to insert a JavaScript code of a mouse trail into an HTML document, requires the use of cognitive strategy. Other goals are to create a CD that would be easy to use by being consistent in the layout and design of access to the CD; to develop content that primarily could be used with Internet Explorer or Netscape on a PC; and, to create interesting scripts to capture and maintain the student's interest.

The medium of delivery will be a CD. This CD will contain software files, pictures, and movies that can be downloaded to a PC. It will also have various script files that can be copied and pasted into an HTML document where it can then be modified to achieve the required outcome.

There will be software requirements, but in all cases the software is standard on a PC or downloadable for free. In order to edit the code either Notepad or an authoring tool (which usually will cost you) such as, Dreamweaver or Microsoft FrontPage is required. Additionally a browser, such as, Internet Explorer or Netscape will be required for viewing of the Web page. The above system requirements, in

one form or another, are usually standard on all computers today.

Along with the above software requirements students should have basic computer literacy before attempting the use of this CD. This is a basic cognitive premise to be built upon for increasing intelligence and cognitive ability.

By assigning components of the CD for students to incorporate into their Web pages, competency can be determined by the completion of the project in a timely manner. Of course, it will be necessary for the Web page to be fully functional with all CD components in place. The length of time for completion will be based on the complexity of the page to be developed utilizing the CD for Web page enhancements. In some instances the project will be so complex that creating a storyboard will be required before the start of the project. This will have to be turned in if in the classroom, or emailed if it is an online project. If done in a classroom environment a hand written storyboard will be acceptable; but if done online additional software such as Microsoft Word, or Inspiration will be required, unless the student has the knowledge of creating a graphic interchange format (GIF) file through the use of freeware or shareware software.

On group projects the students will be required to work together in the classroom or set time in a chat room for online learners. During these sessions the students will be required to brainstorm, flowchart, and create a concept map of their group project. They will be required to set individual responsibility to the various pages of the Web site being created. Each responsible person will be required to storyboard his or her individual page that will be incorporated with the other pages.

To ensure individual learning, in the classroom individual projects will be assigned and the students will be monitored to verify each student is doing their own work. On group projects the students will have to assign percentages of 100% to all students in the group. This will let the instructor know who is pulling their share, thus cognitive learning and fair credit distribution. In the online environment it will be harder to analyze and determine knowledge on the individual projects; however, backfilling from the group projects using the same basis of the classroom percentages will show individual competency levels.

Population Served

Because of cognitive development in relationship to age groups, the target audience for this project includes college students, and high school juniors and seniors taking Web design classes. Instructors interested in developing classroom curriculum or distance education curriculum can also use this CD.

Design

After analyzing the various aspects of this project the design process needed careful consideration. First identifying the outcomes of the instruction the CD was developed for needed to be determined. Secondly, the development of instruction needed to occur. Next evaluating the effectiveness of the instruction needed to take place.

Determining the purpose of this CD, the desired learning outcome, was to create an interactive form of instruction that, along with enhancing Web design learning, would further supplement cognitive ability and learning intelligences. Individual learning and cooperative learning were further considerations. The tools on the CD were designed to support this learning.

Instruction development is up to the instructor using the CD. The primary basis of instruction utilizing the CD

is to enhance Web pages for both individual and group projects. In the Web Design class at Cathedral City High School a different topic is assigned to each student for individual projects. Students are required to incorporate one or more (depending on project requirements) of the Web tools available on the CD into their project. With group projects, students are required to work together to develop a Web site and incorporate multiple tools from the CD into their group assignment.

Evaluating the effectiveness of the instruction is the easiest step of the process. Since all assignments utilizing the CD are project based, the final project is a Web page(s). At Cathedral City High School the students are given a list of requirements that are required to be incorporated into their Web page. An example of this would be that the students need; (a) two Web tools from the CD on their web page(s), (b) six hyperlinks, (c) six pictures, (d) one movie, (e) five text boxes and, (f) font and color variations. All of the above requirements in the example must be relational to the assigned topic. Per the outlined requirements of the project, the instructor can visually see whether or not the requirements have been met.

Development

The development of the project took careful consideration. Since the project was going to be so massive, it would need to be broken down into understandable units (folders). It also needed an ease of accessibility. A Table Of Contents needed to be developed and, in order to avoid confusion when loading the CD it needed autoload software for easy access.

Collecting software, scripts, pictures, and movies was the first task of this project. Collecting trial versions of software currently being use in the Web Design class at Cathedral City High School was the first priority. This was necessary in order to incorporate the CD into the classroom. Secondly, finding multiple script resources that could be used in the classroom and thus put on the CD needed to be found. Next pictures were found for incorporation into the script files. Then movie examples were created using one of the trial versions of software so that the student could see what could be created with this particular software.

After collecting all of the various files, in order to avoid chaos and confusion, and in order to make the CD user friendly, it was determined that some type of organization needed to occur. Thus, a Web page was created using

Microsoft Word. On this Web page the various files are combined into folders in an outline format titled "Compact Disk Table Of Contents" (see Appendix B). These individual folders have several files in them. All files in the folders are relational. Each folder has multiple files relating to the folder or subfolder in which they are located. Finally, to avoid confusion with all of the folders and subfolders that are located on the CD, autoload software was applied so that when the CD is inserted it automatically loads directly to the Table Of Contents.

Resources and Content Validation

The files were compiled in a folder so that validation could occur. Validating the files on the CD took a great amount of time. In order to validate that the code was correct and would produce the desired result, students included the code from the various tools in their projects.

The software programs did not need validation because they were downloaded as trial software from the manufacturer or their representative site.

The various files came from many web sites. All are freeware with no restrictions. Where the author has inserted his/her name in the coding it has been left for credit. Many of the sites used for research and development of this project are located in Appendix A.

The tools on the CD have been validated through usage. Students and/or the developer of the CD have incorporated the various tools into Web pages (not included in project).

Implementation

In the implementation phase training and learner preparation takes place. It was determined that facilitator training would be minimal and learner preparation would be the major emphasis of preparation. The determining factors in making this decision were; (a) the instructor should be computer literate, (b) the instructor should know HTML coding, (c) the instructor should have prior knowledge or a familiarity with JavaScript, (d) the student is learning HTML, (e) at this point, the student is not familiar with JavaScript, (f) since the student does not know JavaScript, the student needs an explanation of the icons on the disk, and (f) the student needs help in determining where to input data from the disk into the HTML coding. Finally, making sure that all necessary support materials are in place will ensure the necessary learner environment.

In order to utilize the CD, instructors need to have a prior understanding of Web design and coding. Having this knowledge, they will know the necessary support software required to display and incorporate a file from the CD into

the HTML code. Appropriate and beneficial curriculum for incorporation of the Web tools is required. This means that most of the curriculum should be project-based, either individual or group. The method of delivery would best be met by demonstrating how to add, for instance, a JavaScript file from the CD into the HTML document that the learner is working to develop. Since the end result of the project will be a Web page, by creating a set of requirements (maybe even a rubric), such as, the project requirements defined in the design stage, the learning outcomes can be measured and evaluated.

Student preparation is critical. As previously discussed, prior computer knowledge is required and a basic understanding of Web pages would further enhance the student's learning. Initial learning of Web page design needs to take place before utilizing the CD. Meaning, a basic knowledge of HTML coding needs to be taught first. Once the learner has a basic understanding of HTML they can then start incorporating and meshing HTML coding with CD tools such as, a JavaScript file. The CD itself needs to be reviewed with the learners. They need to understand the types of various files available on the CD. Since they have prior computer knowledge, the students should have no difficulty in accessing the CD, but they need to understand

what the different icons represent. From setup files of trial software to mouse trail effects in JavaScript, there is a relationship between the software and the icon that has to be clicked in order to access the software. The files on the CD, by default, are read-only files; once they have copied the file to their computers, students need to learn how to access the properties and change this condition. Then they can modify the code or software as necessary.

There are some tools that need to be in place before lessons can begin. First, a book needs to be available and lesson plans need to be developed. The tools on the CD are for enhancing the design of Web pages. It is designed for incorporation into the learning process. As students learn how to code from the text, a project emphasizing what was supposed to be learned can be created utilizing tools from the CD. Secondly, there needs to be an authoring tool. At Cathedral City High School, during the beginning of the programming course, notepad is the preferred tool. This is so that the students actually learn how to hard code (hard code being able to program in the actual language such as, HTML). The third item required is a browser. Internet Explorer and Netscape are the two most used browsers. Internet Explorer is by far the most used browser and is the one that will accept most of the additional coding tags that

have been added as the coding requirements expand. One of the main features of Internet Explorer that makes it perfect software for designing Web pages is that there is a debugging tool for Web pages. If there are errors, it will tell you where they occur and what the code is missing or the syntax error that needs to be corrected. This is a perfect aid for helping students determine their own coding errors. Having an Internet connection is only required if you are going to upload the Web pages being developed to a Web site, or are learning through distance education. Since an Internet connection is required for verifying certain coding such as, links, in most instances an Internet connection will be necessary.

Evaluation

The purpose of the review was to determine clarity of the information on the CD, the relevance of information, learner impact, comfort level, and cost.

This disk was presented to four teachers and approximately sixty students. There were four teachers from Cathedral City High School involved in the evaluation of the CD. Two of the teachers were from the English Department; one teaches mostly freshman English and the other teaches primarily sophomore English. The instructor that teaches

freshman English has been in the department for nine years and has moderate to good computer skills. The instructor that teaches sophomore English has been in the department for four years and has low to moderate computer skills. The other two teachers were from the Business/Technology Department. One of these teachers has been in the department for two years and is familiar with HTML coding and has excellent computer skills. The other teacher from the Business/Technology Department has been in the department for over five years and has no knowledge of programming but has good computer skills. The students were juniors and seniors from two Web Design classes. During the first semester they learned HTML coding and used the CD to input JavaScript. During the second semester the students used the disk to incorporate files into their projects; there were both individual and group projects utilizing the CD.

The teachers that had minimal computer knowledge were able to bring up files on the CD. They did not know what to do with the files, but the purpose of their viewing the CD was to evaluate for clarity and to verify whether or not it was user friendly. Both students and teachers were comfortable with the ease of access. Even the users that were not exactly computer literate did not have a problem

with accessing the disk. Web students were, quite easily, able to access any particular tool. They particularly liked the fact that they didn't have to search all over the Internet for Web tools because on this CD, that is almost 20 megabytes in length, there are many tools. A complete outline of the Table of Contents is located in Appendix B.

The students liked the CD and the ease of access but would have liked more working examples of the JavaScript code. The students said that being able to insert JavaScript code into their HTML pages made learning a lot easier, they were challenged, and they retained more information.

All evaluators appreciated the fact that the CD contains an auto start command so that when you insert the CD, it will automatically load to a Table Of Contents screen. When this title is clicked it will load a Compact Disk Table Of Contents Web page. In order to distinguish between the various types of files, icons have been added. By clicking on the icon to the left of the tool you will automatically be linked to that particular tool, whether it is a download or notepad document with code. The icons are relational to their function. An example of this would be, if it is software that one is about to install, the icon is the accepted icon for file setup.

The financial aspect of this project is the reasonable cost of implementation through the distribution of the CD. The cost involved with this CD is only the price of a blank CD. These vary in price depending on quantity bought and where they are purchased; actual prices range anywhere from \$.50 to \$2.00. Best pricing is when the CD's are purchased by the hundreds.

Summary

Time and again the students in the Web design class at Cathedral City High School had voiced their frustration in finding Web tools. They had to go to several sites to view and choose a tool and they had difficulty in implementing the code into their Web pages. Many of the issues that arose were because the code was incorrect, thus it wouldn't work. These problems will be reduced now because all of the files on this disk have been tested and are known to work.

In the design phase, the outcome of determining instruction is a CD with Web tools that aid in cognitive learning. Although instruction development is left up to the individual instructor, an example was provided. In evaluating effectiveness it was determined that Web projects that met the outlined instruction would, themselves, be adequate enough to determine learning.

For the development phase not only did sites have to be found but also validation had to occur to make the project credible. Only workable, useful, and appropriate tools and gadgets to enhance the learning process were included on the CD. Finally, as part of the development phase, the ease of accessing the CD was considered. Trying to access the many various folders with several levels of additional embedded folders would have created chaos and difficulty in navigation. As a result, the CD will automatically load when inserted in the disk drive.

For the implementation phase training and learner preparation needed to take place. It was determined that prior knowledge of Web design and coding; implementing support software; curriculum that would enhance cognitive learning and either be individual or group project based would be the major emphasis of implementation.

Finally, for the evaluation phase it was determined both teachers and students needed to take part in this phase. There weren't any complaints about accessibility; they all liked how easy it was to access. As a result of the CD having good tools that made the instruction more interesting, there was a significant impact on learning. This CD is very cost effective; it is inexpensive to duplicate.

From the original concept through completion of the CD this project was long and exhaustive. Considering the age groups and analyzing what would aid these students with cognitive and multiple intelligence learning was of prime importance.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The conclusions discussed in this chapter are a discussion of the results and lessons learned. The recommendations discussed pertain to further evaluation of distance learning utilizing the CD, and descriptions of additional Web tools. The conclusions and recommendations are results from the completion, evaluation, and feedback of the project.

Conclusions

As a result of this CD being used in a classroom environment at Cathedral City High School, evaluative feedback and results have happened. These lessons learned create a backbone for any modification that may take place.

Results

The results presented here are from the usage of the CD by four teachers and two Web design classes at Cathedral City High School.

One of the primary concerns was the ease of accessing various files on the CD. Since the teachers had varying degrees of computer competency, see Chapter 3, and all were able to successfully access the CD, it can be determined

that the ease of accessibility for teachers was successful. However, access time varied from two minutes to ten minutes in actually locating specific files. It was assumed that this was due to competency levels. The students had no difficulty at all in accessing the CD. They were able to navigate wherever they wanted to go. Thus, in regards to the Web design students the ease of accessibility was highly successful.

Another reason for the CD development was for furthering the cognitive and multiple intelligence levels of the students. Projects where tools from the CD had to be incorporated into the individual and group projects assigned to the students were developed. By providing the tools the students needed and setting requirements whereby the students could be creative and innovative, the student's cognitive levels were utilized and multiple intelligences were employed. The resulting projects were a basis for successful determination that the employment of higher learning had taken place.

Lessons Learned

Student feedback is very viable and important in determining the success rate of the CD in supporting curriculum and further developing their intelligences.

Although the students really liked the CD, they would have liked it better if there were more working examples of the JavaScript tools. The students are incorporating tools into their Web pages, and in many instances they do not know what the end result will look like or what it will do to their pages. The description in the code itself isn't, according to the students, enough to give them a visual. Of course, one could say that leaving the CD tools without further examples will cause the student to utilize cognitive skills by reading for understanding and comprehension on available data on tool descriptions. As a result of student feedback, this is a valid concern and could be considered a recommendation for further expanding the disk with more JavaScript examples.

When students have the freedom of surfing the Internet for Web tools, sometimes unnecessary or inappropriate boxes pop up; the students really do get tired of all the pop-ups that are occurring more frequently all the time. The students enjoy having a medium that has a lot of the tools that can be located at various sites on a CD. There are no pop-ups to distract or impede the learning thought process.

Having the CD allows the students to concentrate on content instead of tools that enrich the page they are developing. They know that they will not have any

difficulty in finding appropriate tools for page enrichment and will not have to spend so much time looking for these tools.

Recommendations

Learning through distance education was taken into consideration during the analysis phase, design phase, and development phase of this project. However, the implementation or evaluation phases did not occur.

Since it is important to have all software and tools that one needs to effectively create and develop Web design pages, additional Web tools, both authoring and multimedia, have been described below.

Distance Education

Having seen the effectiveness of the CD in a classroom, the potential for using the CD in distance education and being successful is highly probable. However, since the field of Web design instruction is limited in the Coachella Valley (there are a few classes at College of the Desert and at the local high schools - none of these are distance education), the CD needs further implementation, and evaluation in determining the effectiveness of the CD with distance education utilization.

In the local high schools there is no distance education curriculum for Web design. The only use of distance education was in the Web design classes at Cathedral City High School. This was done on an individual case level where a student was sick or needed to make up work.

Since there are no definitive findings on the effect of using this CD in distance education, further research needs to take place. An online class evaluation would be an ideal medium for conducting further study.

Additional Web Tools

The following recommendations for Web Sites, Design/Authoring Tools, and Multimedia Tools have been developed through extensive research and classroom trials. The Web Sites listed in Appendix A are highly recommended sites for additional web page development tools. Other sites have scattered content, sites that are not user friendly, and some are totally inappropriate.

The Design/Authoring Tools along with most of the Multimedia Tools discussed here are tools that are currently being used in the classroom at Cathedral City High School. A Design/Authoring tool is required in order to use the project CD.

There are many design/authoring tools available. Microsoft FrontPage, Hotdog, Macromedia Dreamweaver, Adobe GoLive, HTML, and JavaScript, are some of the many design/authoring tools that are available. These tools have been available for some time and appear to be stable (not going away). Several of the tools described here are recommended for student cognitive enhancement and others are necessary for Web design. Additionally there is a myriad of multimedia tools to choose from to design a Web site. Macromedia Flash, Fireworks, FreeHand and Director, Boomer, and Adobe Photoshop and Illustrator are just a few of these tools. These are also discussed in this section.

Microsoft FrontPage is an excellent authoring tool. One can create professional-looking web pages with this software. With this software, you can combine text, audio, video, and animation in a graphical format that can be viewed in the default browser on the computer being used. You can create a graphical page, view the HTML code, and preview by clicking on tabs (buttons) at the bottom of the page. The drop down menu boxes display many options and functions that can be performed with Microsoft FrontPage. The graphical format makes it easy for beginners and visual learners to create a Web page. The help feature is user friendly and a great aid for the beginner.

Hotdog is an extremely user friendly authoring software with Multilanguage support. There are wizards for various options, such as, GIF optimization and animation, page transition, and Multilanguage SQL Query builder. This software has Boomer integration, a Flash wizard, and internal page preview. Additional features are for various programming languages integration.

Macromedia Dreamweaver is an authoring tool for both the beginner and experienced developer, but primarily the experienced developer. Different styles and expertise levels are accommodated for in the Dreamweaver work area. Dreamweaver uses drop down menus, has code and design views separately and combined, and other more in-depth panels. Dreamweaver is preferred over FrontPage because of its ease of inserting video, sound, flash, and other plug-ins.

Hypertext Mark-Up Language (HTML) is called hard coding. Some consider it old fashioned to actually code everything out when there are so many authoring tools available to do the job for you. In talking to the head of online development for The Desert Sun about learning coding, she agreed that it is important to learn to code. Using tools is fine but one needs to be able to modify and create something unique, and sometimes this can only be done by actually going into the code section and hard coding the

changes. You will only be able to understand the coding section of FrontPage and Dreamweaver if you know HTML coding.

Adobe GoLive provides diagram tools to map your information flow and your site structure links. One can publish the diagram to Adobe Portable Document Format (PDF), and site maps and live pages can be generated automatically from the diagram. There are drag and drop capabilities for graphic files and images. This software is compatible with Adobe Illustrator, QuickTime, JavaScript, Adobe Photoshop, HTML, and Cascading Style Sheets (CSS). There are page templates and there is also a split-screen view of layout and source code.

JavaScript is a scripting language that is used by the skilled web page developer. Because it is so tightly integrated with HTML, other than HTML, it has become the most popular scripting language on the web. To thoroughly understand one of the main advantages of JavaScript one would need to understand client-side versus server-side execution of programming; suffice to say, the program is downloaded into the user's browser, thereby not creating a burden on the server or a bandwidth burden for the user. By using a text editor, such as Notepad, you code in JavaScript and then insert it into the spot in your HTML code where you

want the program to run. The most liked features that developers use are alert tags (those annoying pop-up boxes that come up when you are accessing a site), page updates date and time, clocks and countdowns, calendars, and forms.

Macromedia Flash allows the Web author to design creative web animation. The Web author can import images created in other programs, such as Photoshop, into the project. Flash allows for vector animations, and development of interactive components using Action Scripting. A Flash movie will look the same regardless of the platform or device it is being viewed on.

Macromedia Fireworks allows the author to create horizontal pop-up menus using a wizard interface, and allows switching between bitmap and vector editing depending on the type of layer, object or URL (User Resource Locator) selected. Output options for HTML editors like Adobe GoLive, Macromedia Dreamweaver, and Microsoft FrontPage are preconfigured through the Quick Export function.

Macromedia FreeHand is software that is easy to learn. It is graphics software that creates an environment for designing illustrations, organizing information, and laying out storyboards. You can develop click-through presentations. With the SWF support one is able to export and integrate with Flash and Fireworks. It is an excellent

tool for illustration, design, and layout where one can create content for the Internet and Flash projects.

Macromedia Director is a multimedia-authoring tool for both fixed media and the Internet. Director is designed to create rich interactive content and it can incorporate photo-quality images, long-form or full-screen digital video, animation, sound, text, hypertext, Flash content, and bitmaps. Director is complementary to Flash but they have been designed to address different requirements. Creating streaming video is a big plus for this software. The use of native text-to-speech capabilities within the operating system allows for creation of accessible self-voicing content for people with disabilities that work without screen readers or other assistance technology.

Boomer is an exceptional little program. You can create Flash movies, buttons, logos, banner ads, and slideshows for incorporation into your Web pages. It is an interesting program that students really enjoy.

Adobe Photoshop is primarily an image editing software. It is powerful software with various features. There are painting tools, a pen tool, a pattern maker, special effects filters, liquefy tools and turbulence brush, transparency controls, optimization, vector output options. You can create instant GIF animations, image maps, rollovers, URL

links, and Cascading Style Sheet generation. There are photography enhancement tools, watermarking, and crop tools. The features of this software are too numerous to list. With Photoshop one can explore creative options and produce a high quality image for incorporation in a Web page.

Adobe Illustrator is for creating and producing artwork. Small graphic files are key to distributing images on the World Wide Web. With this program the artwork can be saved in one of several compressed file formats, such as, GIF (Graphics Interchange Format), JPEG (Joint Photographic Experts Group), PNG (Portable Network Graphics), or a Flash SWF movie.

Summary

Accessibility, increased student learning, distance education, and additional Web tools were all discussed in this chapter.

The teacher evaluation of the accessibility of the disk was, for the population utilized, successful. The student evaluation of accessibility was also revealed to be successful.

The primary purpose of creating this CD was for the added enhancement of student learning. By creating a tool that was useful and interesting, the students that used the

disk displayed, through project development, utilization of cognitive learning and multiple intelligence learning skills.

Even though a sufficient student population evaluated the CD, and although distance learning was considered through the design processes stages, it has been determined that further evaluation needs to occur before it can be determined whether or not the CD is effective in distance education.

Additional authoring and multimedia tools/software has been discussed. The primary purpose of recommending these tools is for the benefit of complementing the complete learning of the student.

A copy of the project CD is located in Appendix C.

APPENDIX A
RECOMMENDED WEB SITES

Animation Factory

<http://www.animationfactory.com> This site has a membership section and a free section. The free section contains a lot of backgrounds, clip art, bullets, GIFs, and JPEGs.

Any Browser Tools

<http://www.anybrowser.com> As with any web page, browsers such as, Netscape and Internet Explorer display the pages differently. This web site gives tips and links that can help make your site accessible by all browsers.

Boogie Jack's Web Depot

<http://www.boogiejack.com> This site would be considered a webmaster's resource site. It contains sound effects, CSS and HTML tutorials, web page graphics, cut and paste JavaScript, computer tips and more.

Counter

<http://www.beseen.com> Good link if you want to add a counter to your web page.

Dynamic Drive

<http://www.dynamicdrive.com> This web site contains tools to create various Dynamic Hypertext Markup Language (DHTML) items to insert in your web page. Items such as clocks, mouse trails, and drop down boxes.

HTML Goodies

<http://www.htmlgoodies.com/tutors/cc.html> This is an excellent web site with good color tutorials. Html Goodies has a plethora of information for web designers. HTML tags, CSS properties, JavaScript, and a myriad of downloads are contained on this site. There are tutorials, tables, backgrounds, forms, frames, image maps, colors, buttons, Java Applets, CGI scripting, and a lot more features at HTML Goodies.

The J Maker

<http://www.thejmaker.com/> Advanced Java Programming Site.

Java Applets

http://javaboutique.internet.com/applet_index/c.html There are many applets to choose from at this web site.

Net Mechanic

<http://www.netmechanic.com> The primary purpose of this web site is to help you improve your web page. It has tools to help you improve your site, promote your site, and monitor your site. This site also has a free GIFBot. A GIFBot helps you to optimize fat graphics on your page so that the site is faster to access.

Page Kits

<http://pagekits.com> This site has many templates for web pages. Also there are free web buttons and animations.

This site also contains action kits. These are free Photoshop actions to achieve cool filter-like effects.

Prana3 Web Tools

<http://www.prana3.com> Prana3 is an Interactive Design's Web Design Tools site with web design tips, techniques, and links to other web design sites.

RGB Converter

<http://www.stardot.com/~lukeseem/hexed.html> Color converter from RGB to HEX.

Simply Web Design

<http://simplywebdesign.com> This is one of the most interesting sites that I have come across. It has everything: animated GIFs, icons, wallpapers, generic logos, photos, clip art, interfaces, and graphic sets.

Spinwave

<http://www.spinwave.com> This site contains a cruncher tool. This tool allows you to shrink your JPEGs and GIFs file size, which in turn will increase the access speed of your site.

Super Color Chart

<http://www.zspc.com/color/index-e.html> An excellent chart for mixing colors.

Tudogs

<http://www.tudogs.com> Tudogs is loaded with top quality free software applications. In the Web Development section you will find resources, web tools, HTML/XML, Java, JavaScript, PHP, Perl, CGI, Databases, and Servers information and tools. By clicking on the dropdown menu for Graphics you will find free animation, clip art, and fonts.

VisiBone

<http://www.visibone.com/> Several web tools including colors, tables, and popups.

Web Design Guide

<http://www.dreamink.com> This site has many tutorials, such as, beginners, design, speed, style, content coding, navigation, and promotion. It also contains a resource guide and resource library.

Webmonkey

<http://www.webmonkey.com> This site has three different categories: Beginners, Builders, and Masters. There is a how-to library and a quick reference section. This is a must site for web page builders.

APPENDIX B
COMPACT DISK TABLE OF CONTENTS



COMPACT DISK TABLE OF CONTENTS



Web Tools



Adding More Than One Page To An onLoad Command



Authoring Software



CoffeeFree Trial Version - Web Design Tool



Director 8 Trial Version



Dreamweaver Trial Version



Fireworks Trial Version



Flash 5 Trial Version



Flash 5 Trial Version



Read Me



PageWiz Installation - Hot Dog Web Design Tool



Quick Time



Quick Time Install Cache



Quick Time Installer



Coloring Charts



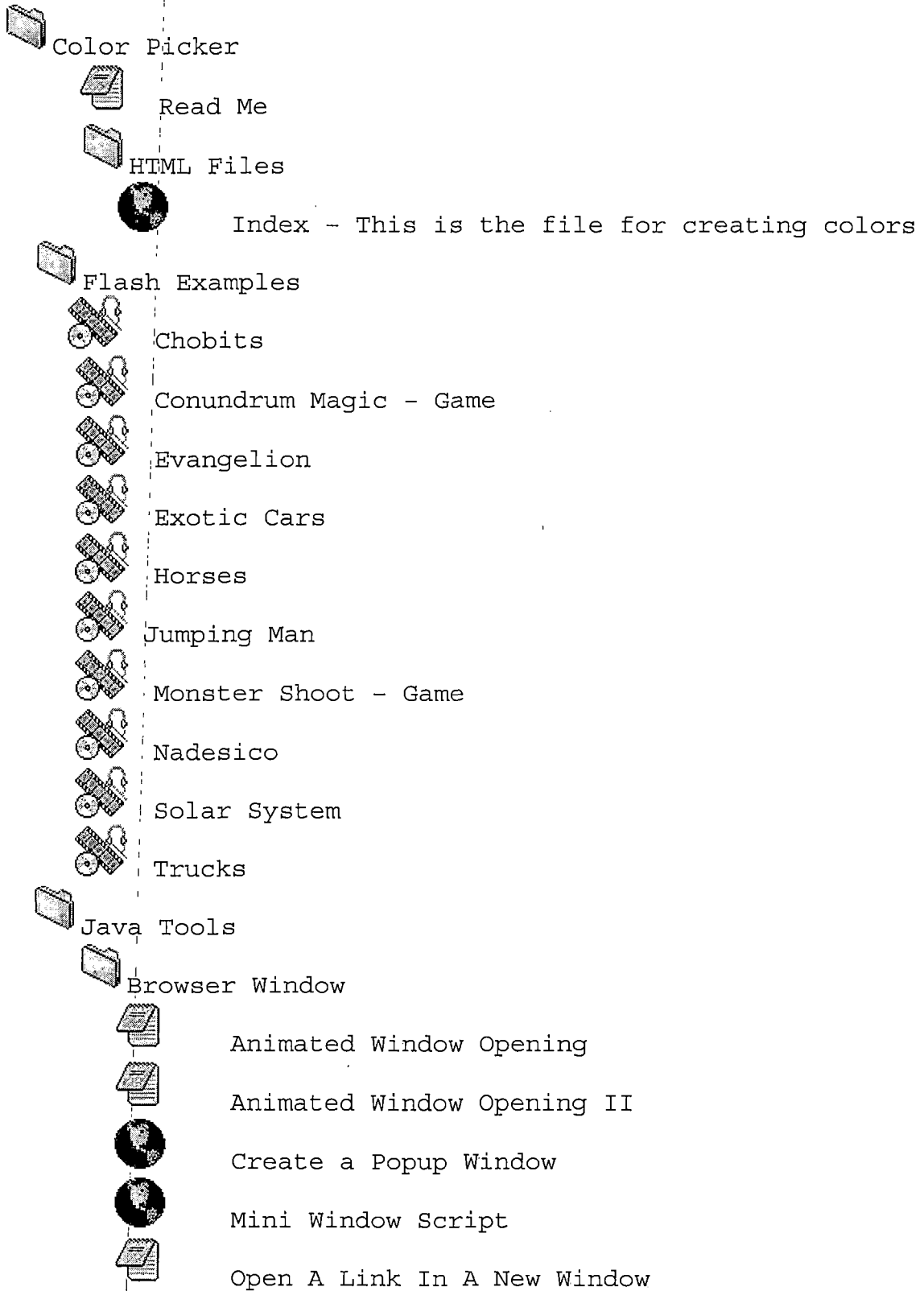
Big Colors 216 Color Chart (GIF)




Big Colors 216 (HTML)



Big Colors 1536 Color Chart (HTML)



 Calendars

Calendar2



Directions



Calendar3



Directions



Source



Lithic Calendar



Config



Directions



Live Date



Popup Calendar



Directions



Title Time

 Clocks

Analog Clock



Analog Static Clock



Clock



Countdown Clock



Digital Clock
























LCD Clock



Live Clock



Popup Clock

-  Upper Left Corner Clock
-  Document Effects
 -  3D Starfield Script
 -  Autumn Leaves
 -  Bubble Effect
 -  Document Fireworks
 -  Document Fireworks II
 -  Document Frame Script
 -  Document Wipes
 -  Drop Down Document Viewer
 -  Drop Down Document Viewer II
 -  Dynamic Splash Screen
 -  Page Entry Special Effects
 -  Rain and Snow Effect
 -  Snow Effect
 -  VML Fireworks Script
 -  Watermark Background Image
-  Dynamic Content
 -  Always On Top
 -  Daily Iframe Content - Loads a different Iframe page daily, such as, "Tip Of The Day"
 -  DHTML Add Box



Drop In-Content Box - Online



Popup DHTML Announcement Box



Scrollable Content II - Display content in a defined area.



Form Effects



Accept Items



Flashing Form Element



Form Field Limiter



Highlight Form Element



Required Fields Validation



Submit Once Validation



Image Effects



Bouncing Image II



Bubbler



Zipped Files



Depressible Image Link



Directions/Code



Picture - Down



Picture - Up



Distorter



Directions



Zipped Files



Drag Elements



Directions/Code



Picture - Test



Picture - Test2



Eyes That Follow



Directions/Code



Picture - Eye



Picture - Pupils



Fireworks



Directions



Javacode



Zipped Files



Floating Images



Floating Images Code



Floating Images II Code



MoveObj - JS Code



Picture - Balloon2



Picture - Balloon3



Picture - Balloon4



Flying Bats



Directions/Code



Picture - Bat



Flying Butterfly



Directions/Code



Picture - Butterfly2



Flying Cupid



Directions/Code



Picture - Cute



Flying Ghosts



Directions



Zipped Files



Flying Planes



Directions



Zipped Files



Image Mouseover



Image Reflection



Image Spotlight



Image Thumbnail View



Image Viewer



Directions



Zipped Files



Image Viewer II



Directions



Zipped Files



Live Book



Directions



Config



Zipped Files



Moving Light



Multimedia Filters



Rain



Directions



Zipped Files



Real Snow



Directions



Java Real Snow



Java Snow



Java Wind



Zipped Files



Reflection



Directions



Source Code



Zipped Files



Ripple



Zipped Files



Slideshow Fade



Directions



Config



Zipped Files



Slideshow Slider



Directions



Zipped Files



Slideshow Wave



Directions



Zipped Files



Snow



Directions



Config



Zipped Files



Warp



Directions/Code



AlexWarp.class



ImageWarper.Class



Warp



Picture - Earl3



Water Pic



Directions



Config



Zipped Files



Java Games



Absolute



Browser Quake



Find It



Gamelet Tool



Matchit



Maxy Yatzy



Maze 3D



PacMan



Phong



Reflex Tester



Rush Hour



Sokoban



Street Hockey



Tetris



TicTacToe



Tower Of Hanoi



Links and Buttons



Animate Button

























Back Home Button















































Hot Key Script



Jump To The Top Link

	Link Description Script
	Link Extractor Script
	onMouseover Link Effects
	Popup Information Box
	Popup Information Box II
	Popup Information Box III
	Rollover Background Image
	Spider Web Link Effect
	Text Link Underline Remove
	Textual Tool Tip Script
	Textual Tool Tip II
	Menus and Navigation
	Animated Menu
	CSS Menu Highlight
	Drop Down Descriptive Menu
	Drop Down Menu Generator - Online
	Floating Menu Script
	Highlight Menu Effect
	Hover Up Menu Bar
	Navigation Bar
	Pop It Menu
	Pop Menu

	Popup Navigator
	Right Click Pop Menu
	Right Click Pop Menu II
	Scroll Menu Links
	Slide In Links
	Static Menu Script
	Tabs Menu Mouseover
	Top Navigational Bar II
	Top Navigational Bar III
	Top Navigational Bar IV
	Miscellaneous
	Arrow Head Title
	Body Mass Index
	Calculator
	Chat
	Counter
	Custom Cursor
	Find In Page Script
	Highlight Table Cells
	Internet Amp Midi Player
	Java FTP
	Mouse Over Scrollbar

	Number Converter
	Outline View
	Path Generator
	Scrollbar Custom Colors
	Search Application
	Time-Based Progress Bar
	Timer
	Tip Of The Day
	VML Editor
	Mouse Trails
	Comet Trail
	Dancing Stars Trail
	Elastic Band
	Elastic Trail
	Image Trail
	Kiss Trail
	Magic Wand Trail
	Mouse Trail Clock
	Roaming Cursor
	Popup Blocker
	Scrollers
	Cross Browser Marquee



DHTML Scroller



Document Title Scroll



Dynamic Fader



External Data Marquee



Fading Scroller



Fading Ticker Script



FRAME Scroller



IFRAME Ticker



News Updater Script



Pausing Up/Down Scroller



Ticker Tape Script



Typing Scroller



XML Ticker



Slide Shows



Background Slide Show



Blending Slide Show



Drop In Slide Show



Fade In Slide Show



Flexi Slide Show

























From Left Slide Show

























Interactive Image Show



Pixelating Slide Show

-  Preloaded Slide Show
-  Slide Show
-  Sliding Puzzle
-  Small Puzzle
-  Text Animations
 -  Always On Top
 -  Animated Letters
 -  Bouncy Message
 -  Chompman
 -  Cross Fader
 -  Dissolving Text
 -  Dropping Text
 -  Fader
 -  Flying Letters
 -  Glowing Text
 -  In Your Face Message
 -  LED Sign
 -  Neon Lights
 -  Neon Lights II
 -  Nudging Text
 -  Particle Text
 -  Pulsating Text

-  Pulse Text
-  Rainbow Text
-  Roller Coaster Text
-  Shockwave Text
-  Sine Scroll
-  Text Animator
-  Text Scroll
-  Trembling Message
-  Typing Text Script
-  Typo Tool
-  Wave Text
-  User and System
 -  Add To Favorites
 -  Add To NS6 Sidebar
 -  Alternate Document Print
 -  Disable Image Toolbar
 -  Disable Right Click
 -  Disable Right Click On Picture
 -  Encrypted Password - Online
 -  Login Password
 -  No Right Click III
 -  No Select Text



Password Protect



Password Protect No Copy



Set Site As Homepage



Source Code Encrypter



Surfer Screen Type Detect



JS Panorama



Music Converters



CDA To MP3 and WAV



Midi To WAV



Zip Utilities

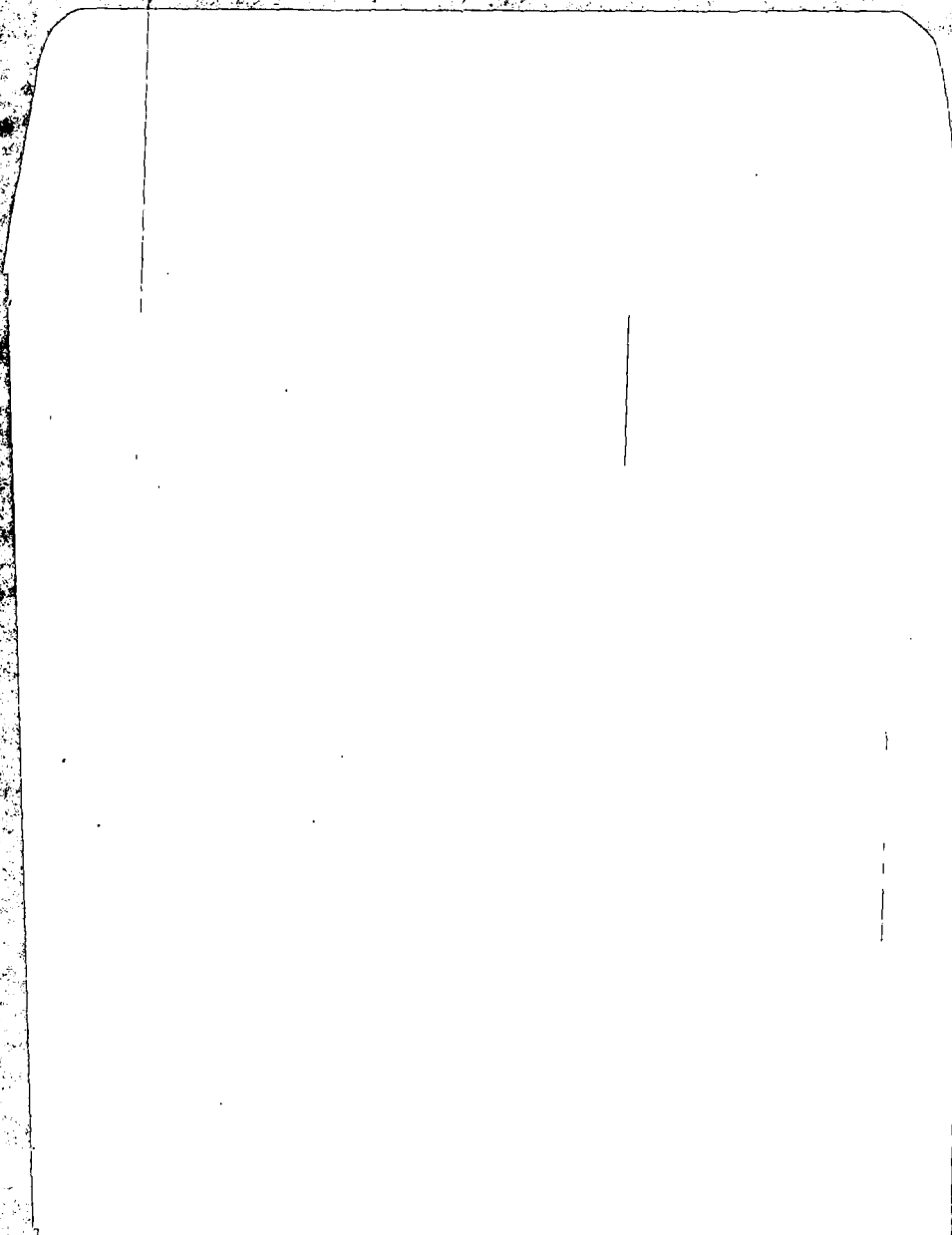


Power Archiver



Winrar

APPENDIX C
PROJECT COMPACT DISK



REFERENCES

- Bacheldor, B. (2000). Adobe Tools Pump Up Web Features. *InternetWeek*, 808, 16. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Campbell, K. (1999). *The Web: Design for Active Learning*. Retrieved October 17, 2003, from <http://www.atl.ualberta.ca>
- Carpenter, B. (2002). Avoiding the Pitfalls of Web Design. *Computers in Libraries*, 22(10), 40. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Garner, S. (2002). *Reducing the Cognitive Load on Novice Programmers*. Retrieved October 17, 2003, from <http://ericit.org/fulltext>
- Gillani, B. (1998). The Web as a Delivery Medium to Enhance Instruction. *Educational Media International*, 35(3), 197. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Gordon, R. S. (2002). HTML Virtual Classroom/HTML & Web Design Tips & Techniques. *Library Journal*, 127(8), 128. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Hopper, B., & Hurry, P. (2000). Learning the MI Way: The Effects on Students' Learning of Using the Theory of Multiple Intelligences. *Pastoral Care in Education*, 18(4), 26. Retrieved October 17, 2003, from CSUSB on-line EBSCOhost.
- Iiyoshi, T., & Hannafin, M. (2002). *Cognitive Tools and User-Centered Learning Environments: Rethinking Tools, Functions, and Applications*. Retrieved October 17, 2003, from <http://ericit.org/fulltext>
- Internet Courses Teach Web Design Skills. (2002). *T H E Journal*, 29(9), 30. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.

- Kennedy, D., & McNaught, C. (2001). *Computer-based cognitive tools: Description and design*. Retrieved October 17, 2003, from <http://ericit.org/fulltext>
- Liu, M., Gibby, S., Quirros, O., & Demps, E. (2002). *The Challenge of Being an Instructional Designer for New Media Development: A View From the Practitioners*. Retrieved October 17, 2003, from <http://ericit.org/fulltext>
- Miltiadou, M., & Savenye, W. (2003). Applying Social Cognitive Constructs of Motivation to Enhance Student Success in Online Distance Education. *Educational Technology Review*, 11(1). Retrieved October 17, 2003, from <http://ericit.org/fulltext>
- Nelson, G. (1998). Internet/Web-based instruction and multiple intelligences. *Educational Media International*, 35(2), 90.
- Noh, S. J. (2002). Enhancement of web design quality through the QFD approach. *Total Quality Management*, 13(3), 393. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Orlando, M. (2002). Creating Your Own Web Site. *Poptronics*, 3(4), 15. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Osciak, S., & Milheim, W. (2001). Multiple Intelligences and the Design of Web-Based Instruction. *International Journal of Instructional Media*, 28(4), 355. Retrieved October 17, 2003, from CSUSB on-line EBSCOhost.
- Philadelphia Students Gain Real-World Experience From Web and Graphics Design Curriculum. (2002). *T H E Journal*, 29(11), 68. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.
- Pintrich, P., & DeGroot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1) 33.
- Roos, G. (2001). Distributors sponsor Web design tools. *Electronic Engineering Times*, 1174, 116. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.

Simone, L. (2002). Fireworks: Indispensible Web Design Tool. *PC Magazine*, 21(12), 32. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.

Smith, A. (1997). Testing the Surf: Criteria for Evaluating Internet Information Resources. *The Public-Access Computer Systems Review*, 8(3). Retrieved April 30, 2003, from <http://info.lib.uh.edu/pr/v8/n3/smit8n3.html>

Web Design. (2002). *PC Magazine*, 21(1), 98. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.

Weiss, R. (200). Howard Gardner Talks About Technology. *Training & Development*, 54(9), 52. Retrieved October 17, 2003, from CSUSB on-line EBSCOhost.

Wiley, D. L. (2002). Recommended Reading on Super Searchers, Free Software, and Web Design. *Online*, 26(5), 4. Retrieved March 15, 2003, from CSUSB on-line EBSCOhost.