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Improving and enhancing education using the Vista del Monte Elementary School home page

Michael Jonathon Fergon

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IMPROVING AND ENHANCING EDUCATION USING THE VISTA DEL MONTE ELEMENTARY SCHOOL HOME PAGE

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
Michael Jonathon Fergon
September 1997
IMPROVING AND ENHANCING EDUCATION USING THE VISTA DEL MONTE ELEMENTARY SCHOOL HOME PAGE

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

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Approved by:

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Aug. 20, 1997
Date

Aug. 28, 1997
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ABSTRACT

The Vista del Monte Home Page is a direct result of the need to integrate technology and the Internet into the schools of the Palm Springs Unified School District. It is a pilot program that has educational value and was designed to integrate the World Wide Web into the learning experiences of students at Vista del Monte Elementary School. It was also designed to motivate and inspire students to use technology as a tool to help them with their studies.

The main feature of this web page is the incorporation of web links to the 5th grade social studies curriculum. These web links are intended to enhance the concepts presented in the America Will Be social studies textbook. Another feature of this project is an informational component that introduces the community to the school, its staff, and other events and activities.
ACKNOWLEDGEMENTS

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CHAPTER ONE
INTRODUCTION

Our Technological World

Technology has revolutionized American culture and woven its way into every aspect of our lives. Our society is becoming more technological every day, changing the very nature of employment. Employers that did not require computers in the past are now requiring workers to master the many new technologies that pervade our world every day. Many employment positions are now requiring some kind of computer experience (Strommen & Lincoln, 1992). It has become almost impossible to live and work without the assistance of computers and technology.

Most fields today are highly oriented towards computer technology. Therefore, in order for students to become properly educated and prepared for the future, schools need to be on the cutting edge of this constant and continually changing reality. In February, 1997, Governor Pete Wilson proposed a one billion dollar plan to put computers in all of California’s high schools (Mahr, 1997). In fact, preparing children for the future of technology in today’s world has caused many educators to reevaluate their
teaching styles and techniques to reflect this changing technological information age. It has been suggested that constructivism be the underlying philosophy for education in our constantly changing technological world. This type of philosophy allows children to create their own ideas and suggests a whole new way of experience (Strommen & Lincoln, 1992).

Constructivism is already playing an active role in many schools across the nation where technology is enhancing learning. For example, at Maxwell Middle School in Tucson, Arizona, students are using technology to boost their learning ability. Six hundred students use 423 computers, fully networked with educational software. Over a four year period, Maxwell Middle School experienced a 8 percent gain in English test scores, a 10 percent gain in reading, and a 12 percent gain in mathematics (Winans, 1996).

In Wichita, Kansas, at the L'Ouverture Computer Technology Magnet School, students have become so adept at computer use, that the Wichita School board decided that the students with their advanced activities were unfair competition for many businesses in the area. Three hundred eighty kindergartners through fifth graders at this school
are learning how to use HTML (Hypertext Markup Language), the World Wide Web programming language. They are learning to follow directions, and use logic and reasoning. They are motivated to learn how to write correctly because their work is displayed for public viewing on the World Wide Web (Miller, 1996).

At Blackburn High School, students are publishing their daily work on their school home page for the on-line world to view. This web page has a wealth of artwork, writing compositions, and many other student publications. There is even a music technology section on this home page where students have composed their own musical arrangements. Users can click on a student's name and hear the student's composition and even download these music files to their own computer and listen to them for future enjoyment. This home page also has a section that has links to various web pages current and former students have created (Blackburn, 1997).

It is evident that the World Wide Web (WWW) can be used as an educational tool, and those who have access to it have the potential of becoming leaders in facilitating communication, research, and learning. With the WWW, the library is always open. By clicking a button, students can
have access to web pages all over the world. A web page may contain a full copy of the Gettysburg Address in Washington D.C., or may contain artwork created by student in Japan. All of these aspects contribute to knowledge, and knowledge is powerful. According to Nanneral O. Keohane (1997), President of Duke University, "Knowledge has always been a major resource in human society; it will become even more crucial in the world that awaits us past the millennium". Using the WWW as a supplement for learning can assist in providing students with a wealth of worldwide information that will help them succeed in the future.

Statement of Problem

Having WWW access is the exception, not the rule, at many schools and districts across the nation. President Bill Clinton has recognized this void and has teamed up the Vice President Gore and Secretary of Education Richard W. Riley to connect schools across the nation to the national information infrastructure (NII) by the year 2000. This plan will provide funding for computers and technology at all school sites across the nation from K through 12 (Glennan & Melmed, 1996).
The Goals 2000: Educate America Act will help make educational technology a priority in our schools. This act will insure that elementary and secondary schools will receive the technology they need to survive in the heavily computer oriented age we live in. The Department of Education will be required to prepare and promote the use of technology across the country. With the help of various telephone and cable companies, President Clinton intends on wiring schools throughout the nation to provide universal Internet access for all (Glennan & Melmed, 1996).

Unlike some of the districts mentioned above, the Palm Springs Unified School District (PSUSD), located in Palm Springs, California, is in strong need of such support for technology and the Internet. PSUSD services 13 elementary schools (which includes Vista del Monte Elementary School), 4 middle schools, and 3 high schools. None of these schools provide Internet access to the WWW (F. Tinney, personal communication, March 7th, 1997).

To help stimulate the growth of technology within the district, this proposed project involves the design and development of a home page on the World Wide Web for Vista del Monte Elementary School (VDMES), where this author is currently employed. This elementary school is considered a
technology leader in the PSUSD district, yet the VDMES's technology is limited to one computer lab and various single stand-alone computers within the classrooms. The computers in the lab are networked, but they are not connected to any computers outside the lab itself. There is no Internet access for the students or the community, nor is there any e-mail capability available. Having Internet access will enable VDMES's students to explore the possibilities of the WWW and expand their research skills and abilities as well as community interaction, feedback, and staff participation.

This project is a pilot program that includes a home page that will stand as one of the models for other schools within the district and other districts as well. The students could access the VdM home page and use it as a springboard for researching curriculum-related areas of study. It is also assumed that by the completion of this project, VDMES will have the necessary computers with Internet capabilities. On February 19th, 1997, at VDMES, the Leadership Team committee decided to spend a $43,000 grant on a technology upgrade for the school. The committee put together a wish list which included 4 computers and a printer in every classroom, scanners, video
cameras, digital cameras, hubs and routers to complete the school network, and Internet connections which will enable students to access the VDM Home Page (Leadership team meeting at Vista del Monte School, personal communication, March 7th, 1997).

Project Overview

The primary purpose of this home page project is to enhance and strengthen the curriculum through technology. As an instructional tool, the home page will provide students with important links to other web sites that will relate to what the students are learning in school. The emphasis of this home page will be geared towards 5th grade students and later may be expanded to all elementary grade levels. The subject area for the pilot version will correspond to the 5th grade Social Studies curriculum. As students work on units in this subject area, the home page will provide them with web-site links that will coincide with the topics under study. Students will click on the topic they are interested in and gather information as directed by the classroom teacher. Data gathering for research and writing reports will be enhanced by the educational value of these time on task activities.
A secondary purpose is for the home page to serve as an information/communication tool for the school and community. As such, parents, students, and staff could view this home page to find out more information about the teachers of VdM, upcoming events and activities, and use important links to other educational WWW sites related to the school's educational curriculum. Individual student progress and achievement could also be accessed at any given time.

To summarize, this project will be geared towards enhancing the curriculum within the classroom and at home through the use of a home page as an instructional tool. Its function will also concentrate on facilitating information delivery and communication among the community of parents, students, and school personnel.
CHAPTER TWO
REVIEW OF RELATED LITERATURE

Computer Technology and its Role in Education

In order to prepare students to enter into adult life as productive, independent people, education and learning must reflect those attributes needed by society, that will enable and train them to successfully survive. There are many jobs that require computer literacy and employers are relying more and more on public schools to educate and train students to become computer literate. Richard Heckmann (1996), chief executive officer of U.S. Filter Corporation, located in Rancho Mirage, California, says, "we need well-trained people who understand computers and know how to use them" (p. D1).

APX international, an automotive company located in Madison Heights, Michigan, has struggled to find computer literate people to fill their employment positions. In 1996, Ralph Miller, president of APX, sent a team of recruiters to Los Angeles, California to find people who were "truly qualified." Being computer literate was his most important requirement because most of the automotive design work was done on computers. Miller interviewed
about 350 people but found only a few that were able to most effectively fill positions with the required skills (Burkins, 1996).

Blackburn High School (BHS) in Australia has realized this need and is preparing students for the future with technology. Their school web page has a wealth of student publications that are displayed for the public to view. One section of their web page lists the four educational priorities of BHS. Modern technology is one of them. The document states, "to provide all students with access to programs that focus on innovative and productive activities, which reflect the increasingly technological world and to enable all students to maximize the advantages of computers as teaching and learning tools" (Blackburn Web Page).

The Alachua County School District is also preparing students for the technological world. They are offering courses in educational technology, computer science, industrial technology, and many other computer oriented vocational fields to prepare students for employment when they enter into the job market (Alachua Web Page). Most of the schools within the Alachua School District have their own web pages that are linked to the main district home
page. Every school in the district has Internet access. Several of the middle schools and high schools have technology labs with computers in them. There are also many business labs and math labs with Internet access (H. K. Evans, personal communication, January 22nd, 1997). These students are known for scoring above average on many standardized tests across the nation. Could this high level of educational technology within the Alachua District be a contributing factor to student achievement? (Alachua Web Page).

It is evident that technology is playing an enormous role in many schools across the nation today and will continue to grow. The Internet is becoming a supplement to learning and students are integrating it into their schoolwork. However, how does this connection to the Internet enhance learning?

A Brief History of the Internet

It would be helpful to learn about the history of the Internet in order to understand how it is changing our schools. The timeline of the Internet’s history covers a span of 30 years. The Rand Corporation, which was the think-tank of the cold war, needed to find a way to
communicate in the event of a nuclear war. They decided that the United States would need a network that would be linked from city to city across the nation. However, any nuclear attack would ruin any switches and wiring and the network’s central command center would easily be discovered and ruined. The following paragraphs describe the history of the Internet as given by Sterling (1993).

In 1964, the Rand Proposal was introduced. It was based on the assumption that the network would be unreliable at all times. Its design consisted of various nodes (computer intersections for sending information) across the country that would be equal in status, and have the authority to send, receive, and originate packets of information. Each packet, which was separately addressed, and would start at a source node and end up at the specified destination node. The route each packet took would be unimportant as long as the message reached its final destination. The message would travel like a hot potato from node to node, more or less in the destination’s direction. If certain nodes were destroyed, the message would still stay airborne and travel across the country though nodes that were still in working order.
Shortly after, in 1969, the Pentagon sponsored RAND and the first blastproof packet switching network was installed at UCLA. In December of that year, four more nodes were created and the project was named ARPANET. Eventually, the nodes were upgraded and they became faster supercomputers with high-speed transmission lines. Researchers and scientists were then able to share other computer's facilities via long distance. By 1972, ARPANET had 30 of these supercomputer nodes set up in various places across the country, which started an unexpected trend in long distance communication.

ARPANET users started using this computer-sharing network not for long distance computing, but for personal communication. They shared news and local gossip with one another and established personal accounts for electronic mail. This feature was attractive and unexpected, yet was more exciting than its original intent, which was long distance computation.

Shortly after, a broadcasting technique was developed so that many people could receive the same information via mailing lists. One of the first mailing lists was SF-LOVERS that stood for Science Fiction Lovers. This was frowned upon because it was not work related, but it did
not stop people from continuing to communicate in this fashion.

During the '70s, ARPA network expansion was made easy because of its decentralized structure. It did not matter what kinds of computers were being used to upgrade the network, as long as they spoke the same packet-switching language, which was NCP (Network Control Protocol). As time passed and the technology advanced, NCP was replaced with TCP/IP or Transmission Control Protocol, which was a much more sophisticated standard that converted messages into streams of packets at the source, then reassembled them back into messages when they arrived at the destination.

In the late 70s, many people began to link their computers to ARPANET and as the network grew, the military portion broke off and became MILNET. Because of its decentralized nature, more and more people began to connect to the network because the TCP/IP protocol software was public domain. It was becoming difficult to lock people out of this network and nobody really wanted to because it was obviously moving in a positive direction. At this time, people began calling this network the Internet.
By the early 1980s, many companies joined in connecting to the Internet, such as the National Science Foundation, NASA, the Institute of Health, and the Department of Energy. These companies provided thicker and speedier links to the Internet with newer and faster computers, and continued to grow through the 1990s.

When foreign computers joined the network, the many network nodes were divided up into several categories and each address had a 3-letter extension that denoted their geographical locations. These 3-letter Internet domains were: GOV (government), MIL (military), EDU (education), COM (commercial), ORG (non-commercial organizations), and NET (gateways between networks).

APRANET started with four nodes in 1969, and expired in 1989. Now, the Internet is composed of thousands of nodes throughout 42 countries. The Internet is growing at a rate of twenty percent a month, faster than cellular phones or fax machines. There are now many "host" machines that have a direct connection to the Internet using TCP/IP. These connections have kept doubling every year since 1988.

The Internet is moving into elementary and high schools and out of its original base that was in research and military institutions. Libraries and many commercial
sectors are taking advantage of the Internet as well. Our schools have much to gain by this overwhelming information highway. The educational value of the Internet should not be underestimated. Instructors are using the World Wide Web (which is accessed though the Internet) to enhance their teaching skills, the curriculum, and add excitement, fun, and wonder to their students' learning.

The Educational Value of the World Wide Web

The World Wide Web can be a basic tool for students. There are many Web pages that are able to assist students in making the most of their research and homework time. There is The Virtual Reference Desk (URL: http://thorplus.lib.purdue.edu/reference/index.html) that provides on-line tools such as encyclopedias, zip code finders, language translators, dictionaries, and more. The Virtual Schoolhouse (URL: http://sunsite.unc.edu/cisco/schoolhouse.html) helps students find art, various museums, and geographical and historical sites of interest all over the world. Dr. Fellowbug’s Laboratory of Fun and Horror (URL: http://www.dtd.com/bug/) assists students in creating web pages and downloading sound clips and photos for multimedia
presentations (Net Guide, 1996). These are only a few web sites that will help children excel in school and help their learning become more real and exciting. As time passes, new web pages of this nature with varied content and advanced features will become available.

According to Brack (1997), the ease and power of designing and using links between information is what makes the WEB unique and powerful. "Linking ideas together enhances the learning experience." Arthur (1990) and Green (1992) state that, "organised data is information; meaningful information is knowledge; knowledge connected to other knowledge is intelligence and, with experience, intelligence leads to wisdom and ultimately action." This information supports the use of the WWW for learning and enhancing education.

The integration of the WWW has opened up new ways of learning and children are now beginning to learn and process information in different ways. Vice President, Al Gore, said "that it is a challenge to the nation's communities to use the new technologies to improve educational opportunities and motivate students to help tap into their natural curiosity (WHPR, 1994a)."
It was suggested earlier in Chapter One that constructivism be the underlying philosophy for education today. This philosophy lends itself to the way children are learning today. In the many examples listed above, students are creating web pages and collaborating with each other. This collaboration allows the students to share their constructive ideas with others instead of laboring alone. This "child-driven learning environment" (CDLE) is the basis for this new model of education called constructivism (Strommen & Lincoln, 1992).

One of the features of the constructivist philosophy is borrowed from child development research regarding play and experimentation. This study concluded that this form of mental exploration was a valuable form of learning (Strommen & Lincoln, 1992). Creating web pages allows students to experiment by using a multi-sensory approach by manipulating text, graphics, sound, and screen layout which allows them to work out their understanding. By posting a web page on the Internet, children can have direct feedback from a wider audience of viewers. It allows them to reflect, change, revise, and improve on their ideas by having their peers make comments and suggestions instead of just listening to comments made by the teacher only.
Because they do not want to be misunderstood and are aware of their wide audience, creating web pages makes children more conscious and critical of what they are writing. This process allows the students to create their own learning and experiences, which enhances learning. It is a self-motivated and self-structured form of learning that is the basis of constructivism. (Strommen & Lincoln, 1992).

**Why Schools Need Web Sites**

It is important to realize why schools are building web sites so that a better understanding of this project can be grasped. Jamie McKenzie (1997), director of libraries, media, and technology for the Bellingham, WA, schools and editor of *From Now On - The Educational Technology Journal* (www.pacificrim.net/~mcikenzie) gives four reasons why schools need web sites.

The first reason is geared towards introducing the community to the school. The curriculum, the school mission statement, lunch menus, calendars, schedules, upcoming events, and other information will help prospective parents learn more about the school and decide if it's what they want for their children. If the web site
is set up to do so, parents should be able to give feedback about the web page via email and communicate with the administration, webmaster, or teachers regarding any questions or concerns they might have.

A second reason schools have web pages is that it enhances research techniques for teachers, students, and administrators. Having links to other sites that relate to the school curriculum can save students and teachers hours of wasted time trying to find the information elsewhere. It would be a valuable asset to have these important links on the school web site and possibly have outsiders contribute via email to keep the list ongoing and updated (McKenzie, 1997).

A third reason to have a school web page is to allow students to publish their work. There are two ways this can be done. The gallery format is a great way to display writings, artwork, and electronic music recordings. The user simply clicks on the appropriate button and the work is displayed or heard. A great gallery approach can be viewed at the Blackburn High School in Australia (www.ozemail.com.au/~bhs56).

Many school web sites have newsletters that are often put together by the students themselves (1997). A
wonderful example of this type of format can be found at a middle school in North Carolina at: www.longwood.cs.ucf.edu/~midink/.

A fourth reason schools create web sites is for storing and displaying various data that has been gathered for school activities. Information learned at one school can be shared with other schools. For example, the quality of water at one school can be posted on the web site and then another school can view the data and compare it to their findings. All this information can be stored on the school web site as well as any other kind of data gathering activity, such as information on social courtesies in other countries. Other schools can then interact with what has been learned for further understanding of our world and its people (McKenzie, 1997).

Characteristics of a Good Web Page

Effective design is an important aspect to realize when building a web page. Some web sites are packed with graphics, sound, scrolling marquees, frames, and other fancy design features that make web pages look good, but sometimes lack in the information area. Too much text without some kind of visual relief will bore the user.
There needs to be a balance between text and graphics (Lynch, 1995). One way to make graphic images more useful, when designing a web page, is to create image maps out of them. Image maps integrate linking functions into a graphic. The user can click on a certain region of a graphic that can be linked to another area on the web. Image maps are effective because they give graphics functionality and take advantage of screen space (Automata, 1997).

Jim Heid (1996), contributing Editor/Media columnist for MacWorld magazine, explains that while image maps can be user friendly, there are also drawbacks. One downside to image maps is that they do not change shape or color when clicked on like many icons and CD-ROM buttons do. Web Designers should make it clear which images may or may not be clicked. Another disadvantage to image maps is that they slow down the web server. When a user clicks on an image map, the web server translates the coordinates of the image map into the address of the target page. Although the processing time is very quick, each click multiplied by many users at the same time could slow down the time it takes for a web page to load.
McKenzie (1997), offers a few suggestions for effective web page design. Web pages with too many graphics that load slowly with little information will drive users away. People care more about useful content than an overabundance of unnecessary pictures. The graphics on a web page should be kept to a minimum and they should not be too big. The new web technology such as Java, Shockwave, clickable image maps, and animated graphics should also be used sparingly, as they may slow down the network.

If a background design is going to be used, make sure it doesn’t interfere with the text. A good example of background interference with text can be found at: http://www.interpow.net/~anthony/annoying.html. This site has a bright pink background with light green text which is unpleasant to the eyes and is difficult to read. There are some web pages that use graphics and background most effectively. A good example of this can be found at: http://www.dsiegel.com/women/. This site has a dark background with pleasant text colors and the links stand out with dark red text on a white background. Another example of effective use of graphics can be found here: http://www.andyart.com/frames.html. The image map on the
right hand side loads quickly and is colorful and attractive. When clicked, this image map stays in place while the left portion of the screen changes.

One rule to follow when providing navigation in web design is to be consistent. For example, the "return home" button should be in the same place on each page. The font style should be consistent throughout the web page. Too many fonts can confuse the user and the web page may look messy and jumbled. The menu pages and content pages should have similar color schemes and graphics. This approach will help the user easily navigate throughout the web page (MacKenzie, 1997).

Communication is also important. A good home page clearly identifies the sender, the medium being used, and offers a clear message that is easily understood. Hlynka and Welsh (1996) suggested that message transmission on the web should be modeled after the findings of Harold Lasswell. In 1949, Lasswell suggested that message transmission should have 5 components: who, says what, to whom, with which medium, and with what effect?

If this model is to be incorporated into the WWW, then the opening home page on the WWW should clearly identify the sender. The message should not be vague, but clear and
understandable. The audience to whom the web page is directed should clearly be recognized and identified. The medium used to create the home page (such as Netscape or Internet Explorer) should also be stated so the user knows how to most effectively view the page. Finally, using effects, such as color and graphics, to relay the message, need to be taken into consideration. (Hlynka and Welsh 1996).

A good home page offers depth. It gives the user a sense that there is something beneath the surface. Many web designers often fall into the trap of creating web pages with links to other pages, but provide no substantial content to their own page. Having some information that is worth exploring will reward the user with new information. This means that hyperlinks should help contribute to the subject matter and enhance learning, not just be the only feature on the web page. (Werbach, 1996).

One of the leading teams in web page design is called the Melia Design Group. They have created web pages for leading corporations such as MCI, AT&T, UPS, and Turner Broadcasting. This credible web page team offers many suggestions that correspond with the previous paragraphs regarding effective web page design (Piquet, 1997).
In addition to the many web page characteristics that were mentioned in the previous paragraphs, the Melia Design Group’s recommendations focused on clutter. Too many icons, words, and graphics on one page can confuse the user. Dividing up the page into various categories and menus adds an organizational aspect that is more pleasant to look at and simplifies navigation (Piquet, 1997).

Another characteristic of a good web page, according to the Melia Design Group, is navigational ease. As the user moves deeper and deeper into a web site, he or she might want to jump back to the beginning or pursue another topic within the web page. Effective navigation will allow the user to easily travel throughout the web site and move from place to place with just a few clicks of the mouse button (Piquet, 1997).

The Melia Design Group applied these principles to the web pages of many large company websites that were in need of these changes. These overhauled websites can be viewed at the ZD Internet Megasite Magazine web site (http://www8.zdnet.com/zdimag/makeover/).

Conclusion

The constructivism theory lends itself to the way children are learning and using technology in our
classrooms today. This "child-driven learning environment" is a new type of pedagogy that supports experimentation, discovery, and individuality experiences (Strommen & Lincoln, 1992).

In the many examples presented above, it is apparent that students are using the Internet as a resource. At Roosevelt High School in Casper, Wyoming, students are using the Internet as a supplement to the library resources. Computer Technology Coordinator, Allen Kapust says, "in this era of tighter resources, our school doesn't have a library like the other high schools do. We depend on other resources nowadays, in large part, that's the Internet." It's a valuable resource that students can use to retrieve information quickly and easily (Alternative Approach Succeeds, 1997).

The Internet is a valuable tool for educators. It is a resource and communication tool that allows students to find any information they need and communicate with peers and experts across the globe. Teachers and students can also share and collaborate with other people on the Internet, which enriches the learning experience.

Another attractive feature of the Internet is that there is always someone who can help the user find answers.
Exchanging information between the parents and the school becomes easier when the Internet is involved. Arranging meetings with parents, sending memos, keeping in touch with the community and other schools regarding student records, grades, and progress, can be a valuable and efficient way to assist in communicating with people who are significantly connected to the children attending the school. The Internet also helps schools establish a closer relationship with its community. By posting student projects on the web and making other school information available, a stronger sense of community can develop (McKenzie, 1997).

Many of the concepts presented in the previous paragraphs will be evident in this project, the Vista del Monte Elementary School Home Page (VDMESHP). Students will have access to a home page that will guide, help, and assist them in their studies. Curriculum integration will be the most important element. Educationally, students will benefit from using the VDMESHP as a tool to make their learning more relevant and real to their lives. The Vista del Monte Home page will take advantage of the Internet and harness the power of the web. It will help facilitate and improve the quality of education for the students at Vista.
del Monte Elementary School and hopefully motivate other schools to take action and embrace the Internet’s capabilities.
CHAPTER THREE

GOALS AND OBJECTIVES

In order to prepare children for future employment, public schools, along with the help of parents, have the responsibility to teach children to be productive members of society. Part of this responsibility means integrating technology into the educational arena because many employment positions in society today require this kind of experience. Therefore, technology must become an essential and effective tool for learning in the area of education. The World Wide Web is one of those areas in technology that cannot be overlooked.

The World Wide Web is an inspiring information resource that could greatly enhance public education. Many schools across the nation are enhancing their learning by accessing the Internet and using this valuable technological tool called the World Wide Web (WWW). However, there are many schools that do not have this capability. The Vista del Monte Elementary School Home Page (VDMESHP) is a direct consequence of this emerging need.
The Vista del Monte Home Page was designed to help students with their education and enhance their learning. The primary purpose of this project is to strengthen and enhance the curriculum through the use of the VDMES Home Page. It is designed to supplement and enrich classroom learning by providing web-links to the 5th grade social studies curriculum. Ultimately, the students will be able to connect to the VdM Home Page from any site and use the information provided by the web links to help them complete their learning tasks.

Through the use of the VDMESHP, students will be able to enhance their learning by clicking on website links that correspond to the social studies curriculum. Parents will be able to log on to the VDMESHP and gather information about the school, its staff, and other events and activities. Teachers will be able to post information about themselves that will assist in helping parents learn more about their child’s educational experience and classroom programs and activities. The VDMESHP will also help administrators show the school to prospective teachers when recruiting in another town.
CHAPTER FOUR

PROJECT DESIGN AND DEVELOPMENT

Statement of Purpose

The primary purpose of the Vista del Monte Elementary School Home Page (VDMESHP) is to enhance learning. It is designed to be used by students so that they could easily explore and gather information that will assist in making their educational experience come to life. A secondary purpose of the VDMESHP is to enhance communication with the community. It was designed so that parents could gather information about the school, its staff, as well as other news, events, and activities.

Many of the characteristics that were discussed in Chapter 2, such as image maps, balance of graphics and text, background consistency, and fast loading speed, were incorporated into the VDMESHP. All of these design features were geared towards one purpose: ease of use. The primary intention of this project was to make it useable and effective, avoiding any complications or confusion.

There are also many reasons why schools have web sites. These reasons were discussed earlier in Chapter 2. This project is a direct result of these findings. The
following paragraphs describe how these findings were brought together to create the VDMESHP. All other sections and design features of the VDMESHP are described and explained in detail and will reflect the concepts and research mentioned in Chapter 2.

Design Structure

**HTML and Background Design**

The VDMESHP is filled with a variety of colorful backgrounds with text. Its vivid array of graphics and pictures are intended to give the home page a pleasant look. The various buttons and clickable images and text allow the user to maneuver themselves throughout the home page with ease.

There are underpinnings of the home page that are made up of a set of instructions called HTML (Hyper Text Markup Language). HTML is the underlying foundation that makes the home page complete, concrete, and useable. Figure 1 shows a portion of the HTML code for the VDMESHP’s opening screen. Figure 2 shows what the VDMESHP looks like as a result of the HTML code.
Figure 1. A portion of the HTML code that makes up the opening screen for the VDMESHP.
Figure 2. The opening screen of the VDMESHP. A result of the HTML code in Figure 1.

The opening screen of the VDMESHP is made up of many background components. The background was made with a
computer graphics program called Paint Shop Pro. Figure 3 shows the section of the background.

![Figure 3. The opening background design for the VDMESHP.](image)

All that was required from the HTML code was a small section of background. A whole page of background was not necessary to make, as the HTML code tiles (replicates the graphic) the background automatically to fill up the whole page. After one background section was made and saved, it was inserted into the HTML code (see figure 4).

After the HTML document was named and saved, it was then tested in a web browser, which is a computer program used to view web pages. This testing procedure allows the webmaster to view the graphical result of the HTML code. If the result was not to the webmaster’s liking, then changes were made in the HTML code, saved, then checked
Figure 4. The HTML code that sets the background for the opening screen of the VDMESHP.

again in the web browser for accuracy. The VDMESHP was made in this fashion by starting with just a few lines of HTML code and checking the results in the web browser. As time passed, more HTML code was inputted and tested each time a change was made.

It was stated in Chapter 2 that backgrounds should have a consistent format. The VDMESHP has a variety of backgrounds, yet they remain consistent in style. Figure 5 shows all of the backgrounds that make up the VDMESHP. The user will see these backgrounds when he or she explores the different areas within the VDMESHP. However, depending on the video resolution, some backgrounds may look different on other computers with different settings. Also, this project can be best viewed using the Netscape web browser. Some of the formatting or graphic placement may look different in other browsers such as Internet Explorer and the America Online browser.
Figure 6. The many backgrounds of the VDMESHP.
The Main Screen

The opening screen (Figure 2) of the VDMESHP uses an image map, which enables the user to click on various sections of the image to go various places within the home page. Figure 6 is an example of how the image map looks. If the user passes the mouse pointer over different sections of the image map, it turns into a hand. When clicked, the user is taken to a predetermined destination set by the webmaster.

Figure 6. The image map on the opening screen of the VDMESHP.

The opening image map makes the design structure of the VDMESHP very user friendly. The seven sections of the image map take the user to the different areas of the
VDMESHP, which allow for easy navigation. These sections will be explained later in this chapter.

A computer graphics program called Paint Shop Pro (1996) was used to make all the image maps. Another computer program called Map Edit (1996) was used to specify the clicking regions and create the links within the various image maps throughout the home page. These design features emphasize ease of use and fast loading speed.

Many of the links below the image map on Figure 2 correspond to the predetermined destinations set within the image map. This feature contributes to the ease of navigational use throughout the VDMESHP.

In the following paragraphs, the various sections of the VDMESHP will be explained, such as the Student Learning Area, the Staff Area, and the Gallery Area. The incorporation of the web page features illustrated in Chapter 2, such as navigation, screen design, content, and instructional design will be addressed.

**Student Learning Area**

The VDMESHP was designed to be educationally oriented and student-centered. The primary objective of this project was to enhance learning and to focus on the 5th
grade social studies curriculum as a starting point. By providing web-links to web pages that corresponded to the social studies textbook at VDMES, students will be able to take advantage of the World Wide Web and the VDMESH to expand their knowledge of the social studies topics and subject areas.

As such, the VDMESH is expected to serve as a tool for the students to use because they can easily find up-to-date information that supports their learning and motivates them to explore the world via informational web sites.

The 5th Grade Social Studies Links Page is part of the Study Hall (which will later expand to different subject areas) and was designed to enhance the 5th grade social studies curriculum at Vista del Monte Elementary School. The student social studies area was developed in consultation with the 5th grade teachers at Vista del Monte school. The instructors composed an outline based on the table of contents directly from the social studies textbook entitled, America Will Be (see Appendix A for copyright permission letter).

When students click on the globe on the image map based on the previous Figure 6, they will be taken to the 5th Grade Social Studies Links Page. Figure 7 is a picture
of the opening screen of the 5th Grade Social Studies Links Page. The red, white, and blue image map is based the seven units that make up the table of contents of the America Will Be social studies textbook.

When students click on a topic they will be taken to another area that displays sub-topics. For example, if a student clicks on the Unit 1 box, he or she will be taken
to another area with sub-topics. Figure 8 shows what that section looks like.

Figure 8. Unit 1: The United States Past and Present.

The blue and red image map allows students to click on one of the three categories, which brings up a list of web site links related to the subject they are exploring. For example, if the user clicked on the Immigrants box, the learner will be linked to the Immigrants section. Figure 9 is a screen shot of what the Immigrants section looks like.
Figure 9. The Immigrants section of the 5th Grade Social Studies Links Page.

Figure 9 also shows that the Immigration Home Page link is blue. This is the Internet's way of letting the user know that the person has already explored the destination of the particular link.
All of the unit sections are set up with a consistent format. The various blue and red image maps allow for easy navigation. When users are done scrolling through the various links for one topic (Figure 9), they will then be presented with a small navigational bar at the bottom of the page. This image map will allow them to move to another topic within the unit or proceed back to the main menu and choose another unit (See Figure 10).

Figure 10. A screen shot of the small navigational bars and link to main social studies menu.
All of the website links in the student social studies area take the user to websites that were created by other people. Internet Fast Find (1996) is a computer program what was very useful in finding these web sites. Figure 11 shows a screen shot of Internet Fast Find.

Figure 11. A screen shot of Internet Fast Find.
The program uses many search engines at once to find and gather the information queried. However, in order to reflect the ongoing educational dynamic, searching for new and exciting web sites for students to explore will be an ongoing task.

Users will also be able to contribute to these "hotlists" when they find other web sites that may be relevant to the various social studies topics displayed. They will be able to click on a mail icon and submit their suggestions so that the new links can be incorporated. Updating will be done on a weekly basis. For example, information submitted by Friday will be included in Monday's home page update.

Counters were placed on every student page to evaluate the frequency each page is accessed. Eventually, students will have to log in to the social studies area so that records can be kept regarding the names and times of students accessing the VDMESH. After the data has been collected, a comparison can be made between students using the VDMESH and those that are not using the VDMESH. This study will help in assessing student achievement and evaluate the effectiveness of the VDMESH.
Staff Area

The staff area on the VDMESHP was designed to showcase the talented people who work at Vista del Monte Elementary School. In this area, all the staff members' names and positions are listed. Figure 12 shows what the staff area page looks like.

The webmaster sent out a survey (see Appendix B) that allowed the staff members to write about themselves, their educational experience, and their classroom highlights. After the information was filled out and returned to the webmaster, the data was then entered into the HTML document. Some of the names in the staff area are colored black and are not underlined. This indicates that staff members did not want to participate in the survey.

If the user passes the mouse over a staff member's name that is underlined, a hand will appear in place of the pointer. When clicked, the user will be taken to another area that will display a picture and other information about the staff member chosen. Figure 13 shows what a staff member page looks like. Each staff page has information about the specific staff member, their achievements, their grade level, their title, their classroom highlights, and their picture.
Figure 12. A screen shot of the opening page of the staff area.
Mr. Michael Fergon, Music, Grades 1-4

Mr. Michael Fergon, the designer and webmaster of this VdM home page, graduated from the University of Redlands in 1991 with a single subject Bachelor’s degree in music education. Michael is currently finishing up work on his Master’s degree in Instructional Technology from California State University, San Bernardino. He’s been teaching at Vista del Monte for the last 5 years and has loved every moment of it! During his second year, he was selected Teacher of the Year. Michael still considers it quite an honor to be elected by his peers.

In his spare time, Michael enjoys playing the piano, dining out, going to the movies, listening to music, writing and recording songs, going to the theatre, and being with friends and family.

Figure 13. A screen shot of a staff member’s information page.

The webmaster used a Casio QV-10A digital camera to take the individual photos. A computer program called Paint Shop Pro was used to resize and save the photos.

All of the staff pages have navigational buttons to direct the user back to the Staff Area or back to the main home page. When the user clicks on the arrow to go back to
the Staff Area, the HTML code is programmed to take the person not only back to the Staff Area, but also to the specific section where he or she left off within the Staff Area page. This saves time from being taken back to the top of the Staff Area page and then having to scroll back down past all the staff members that have already been explored.

Community Features

Introducing the community to VDMESHP is one of the objectives of the VDMESHP, and there are many areas within the VDMESHP that contribute to completing this task. The School Tour area acquaints the public with VDMES by displaying various pictures of the school campus. Figure 14 shows a screen shot of the opening page of the School Tour area.

Clicking on a section of the image map will take the user to another area that displays the appropriate pictures (see Figure 15). This navigational format is evident throughout the entire VDMESHP. To avoid returning back to the main menu of the school tour, the user can just click on the small image map to view the other areas of the school.
Figure 14. A screen shot of the opening page of the School Tour area.
Figure 15. The Corridors of VdM. An example of what happens when the Corridors box is clicked on the opening page of the School Tour.

At the bottom of each page is an area where users can send e-mail to Vista del Monte Elementary School or the webmaster. (see Figure 16). If users have any questions or comments to address to the school, they can click on the area where it says “Click here to send e-mail to VdM!”
Figure 16. A screen shot of VDMES email link.

When clicked, another window opens up (see Figure 17) and the user can then type in a subject and message. When finished, clicking the send button completes the task and VDMES will receive the e-mail. Users can also send e-mail to the webmaster if they have potential social studies links for the student area or any other inquiries that need

Figure 17. A screen shot of an e-mail window.
to be addressed to the VDMESHP designer.

One positive aspect of these community features is that users do not have to make a trip to the school to see what it looks like, or to be face-to-face with teachers to communicate with them. Comments, concerns, or questions can be sent via the VDMESHP.

Other community features include a News and Events Area (see Figure 18), a Mascot Area (see Figure 19), a

![News and Events](image)

**News and Events**

**May 5th**

*Intermediate Awards Assembly 9AM, Multipurpose Room*

**May 6th**

*Primary Awards Assembly 9AM, Multipurpose Room*

**May 22nd**

*VdM Talent Show!
6PM, Raymond Cree Gym*

Figure 18. A screen shot of the News and Events Area.
Welcome Message Area (see Figure 20), and a Gallery Area (see Figure 21) where students can post their work for others to see. In the gallery area, users can click on a link and view artwork and other achievements from students in various classrooms. Figure 22 shows a screen shot of an artwork page.

Figure 19. A screen shot of the Mascot Area.
Welcome Message from the Principal

Welcome to Vista del Monte Elementary School. The staff and I take pride in helping our children to grow academically, socially and emotionally. We are committed to providing powerful teaching approaches that result in continuous individual development and successful participation in our culturally diverse community.

We believe that the best learning climate is one in which parents, children and staff work cooperatively. As the old proverb says, "It takes a whole village to raise a

Figure 20. A screen shot of the Welcome Message Area.
Artwork and other achievements from various classrooms at VDM.

Click on a teacher's name below to see some artwork from their class.

Artwork from Mrs. Casalmo’s Class
Artwork from Mrs. Hewitt’s Class
Artwork from Mrs. Lowman’s Class

Here is where VDM likes to show off. We are proud of our students and their creative abilities. This is VDM Gallery.
Figure 22. A screen shot of an artwork display page.

When the user reaches the bottom portion of the artwork page, he or she is presented with links back to the
artwork page or back to the VDMESH5 main menu. Figure 23 shows a screen shot of what these links look like.

Figure 23. A screen shot of the bottom of the Artwork Page.
Formative Evaluation

A human participant was queried (see Appendix C for IRB approval letter) to voluntarily review the VDMESHP and evaluate its strengths and limitations based on five categories: ease of use, home page design, effect on learning, use as intended, and an overall critique of the project. A survey (see Appendix D for completed survey) was submitted to the participant. The following paragraphs summarize the results of the survey after it was completed and returned.

The participant remarked about the many user-friendly aspects of the VDMESHP. Having clickable images on the opening screen image map as well as the text links give the user many options for navigation. Instructions on how to use the image map are displayed at the bottom of the graphic. The participant recommended that the instructions be displayed at the top of the image map so that inexperienced users will know what to do right away. Another recommendation was made about submitting the home page to various search engines on the Internet to make locating the VDMESHP easier. Since this survey was completed, the VDMESHP was submitted to seven search

The participant applauded the webmaster for the overall design of the VDMESHP. The visual tour of the school was highly praised. The graphics appeared a little fuzzy. However, the participant commented that this small drawback did not take away from the overall effectiveness and design of the tour area. Another concern was regarding the background/text color combinations. The participant noticed that the black counter was hard to read on the blue background. This is due to the fact that the Internet Service Provider only supplies black counters, and the counters were not added until the completion of the project. Hopefully, in the near future, different colored counters will solve this problem.

The participant agrees that the VDMESHP has the potential to enhance learning. The study hall feature and the social studies links pages are well on their way to continued growth and enhancement. The participant also presumes that accessibility is an issue and that the VDMESHP will more likely be viewed by a greater number of students if it’s placed in the library and classroom
computers as well as the school network server that is already in place.

The participant thinks that steps need to be taken to increase community use by making the teachers VDMESHP ambassadors. Knowing the VDMESHP inside and out and understanding that its design and content are dynamic, will help them take pride in what it has to offer. Creativity and growth will depend on teacher contribution, pride, and effort. Only then will the VDMESHP be ready to be used as a curriculum tool.

The participant hopes to see the Palm Springs Unified School District become its own Internet Service Provider (ISP). Many families cannot afford Internet connection fees and are not equipped with WebTV or a computer. Having a local ISP provided by the district will allow more universal access to the VDMESHP, providing affordable, low cost user accounts to students and parents.

Another challenge to overcome is the growing number of parents who are illiterate in English. This makes it difficult to read the VDMESHP. The participant recommended teaming up with local businesses and employers in which they provide funding for materials and staffing to teach courses in learning English. In return, the employers get
better trained employees while the Vista del Monte Elementary School trains them, in English, how to use the WWW.

The participant agrees that the VDMESHP is complex in overall design and is a great start on a school website. The participant suggested some ideas for the future that might improve the VDMESHP.

Perhaps the art pages in the gallery area could have titles displaying the names and grade levels of the students. Someday, the principal’s welcome could be replaced with a QuickTime video. On the opening graphic of the VDMESHP, the webmaster instructs the user to click on the left mouse button. There are many people who only use one mouse button. That instruction could get confusing. Posting the student and staff handbook on the VDMESHP could be a future consideration. Also, adding the address, phone number, and fax number of the Vista del Monte school could be a positive addition for the future as well. Having the bilingual staff search for educational links in Spanish and integrating them into the VDMESHP would increase bilingual participation. Also, some sites in the social studies links area have moved and need to be updated.
The evaluator provided constructive criticism and positive encouragement, which will assist in making the VDMESHP a stronger, more effective school web page. Teacher participation and involvement will play a crucial role in keeping the VDMESHP updated and alive. Also, the primary objective of the VDMESHP is to enhance learning. It was designed for that very reason. Motivation is the key, teachers are the answer, and the VDMESHP is a tool to assist in achieving that goal.

Strengths, Limitations, and Recommendations

The goals of the VDMESHP are to strengthen education and increase community communication and involvement. One of the first steps to making this project successful is to inform people about the VDMESHP by making its web site address (URL) known. This will include displaying the URL on school newsletters, flyers, bulletins, handbooks, and banners. At the beginning of the 1997/98 school year, a flyer will be sent home regarding the VDMESHP. On this flyer will be a summary and explanation of the VDMESHP's features, objectives, as well as instructions on how to access the VDMESHP from home and other localities such as the public library. During Back to School Night, the
VDMESHP will be unveiled and set up for viewing in one of the classrooms. A continuous announcement will call visiting parents to a predetermined classroom where a demonstration of the VDMESHP will take place. Local television and news coverage will be arranged prior to and during Back to School Night. This will give parents and students a chance to see an overview of the many features of the VDMESHP. Teachers will have been trained on the VDMESHP’s use in the classroom during the month of September. Training for teachers will be on continuous basis because the VDMESHP will be constantly growing, evolving, and changing. Instructing students on how to access the VDMESHP in the classroom will be done during the month of October and instruction will continue throughout the year.

One of the strengths of the VDMESHP is that it allows the children to use the Internet as a resource for their studies. However, students will not have free rein to the Internet. The Student Learning Area is set up in a way that guides the children through weblinks that have already been preset, looked over, and approved by the teachers.

Among the other strengths of the VDMESHP, students will be able to build computer skills and engage in
research activities through the Internet more effectively. The VDMESHP will also introduce more opportunities for reading and writing which will contribute to increased academic success.

To fully integrate the VDMESHP into the 5th grade classroom social studies lessons, students are going to need to have Internet access in each classroom. Once that need is met, students will be able to take advantage of the VDMESHP and enhance their learning. Unfortunately, Internet access is not available at this time. This is a limitation that will be overcome by the 1997/98 school year (F. Tinney, personal communication, May 29th, 1997). Also, there are not enough computers in each classroom to accommodate all students at the same time. There is approximately three computers per classroom. However, the teacher may choose to display the VDMESHP on the overhead projector, or instruct small groups to teach how to access the VDMESHP from the public library or at home. This will assist them in completing and enriching their assignments.

The Palm Springs Public Library is pushing for community computer literacy and striving to cooperate in every avenue possible. The head librarian, Henry Weiss (H. Weiss, personal communication, June 1st, 1997), expressed
his enthusiastic interest in cooperating with Vista del Monte students. Mr. Weiss agreed to arrange for field trips to introduce the students to the technology available at the library. This will give students who do not have computers at home the opportunity to access the VDMESHP from the library as it is open on weekends and after school hours.

As mentioned earlier in this chapter, web counters will be used to evaluate how many times each page is accessed. This feature, along with the eventual use of log in procedures, will be beneficial in correlating VDMESHP usage with student social studies grades and achievement.

There are some limitations to using web counters. For example, evaluation may not be accurate because all visitors may not all be students. Some visitors may be parents or students from other schools. Another drawback to web counters is that some students may just visit the page and not read the material that is presented to them. While some students may visit, read, and learn, others may quickly visit and leave, making it difficult to determine and assess the amount of quality learning time spent on the web site. Until log in procedures and timers are
incorporated, the web counters will only provide a rough estimate of VdM student access.

Evaluation will also be affected by the standards each teacher uses to grade students. Some teachers may place a high priority on VDMESHP usage, while others may not.

Perhaps a control group will be most effective in evaluating student achievement comparing those who use the VDMESHP to those who do not. The control group would consist of 5th grade students at another school who have the same computer skills as those at VdM. The only difference would be that the VdM students would integrate the VDMESHP into their learning and the students at the other school would not. An evaluation of the differences would then be measured and the value of the VDMESHP would be ascertained.

A long term evaluation can be done by using VDM 5th grade students as a cohort group and following their progress over time. Another possible form of evaluation is the use of yearly scores on state wide exams. Research shows that social studies scores are highly correlated with general reading scores (B. Bolaños, personal communication, June 6th, 1997).
The 5th grade student page will eventually be expanded to accommodate all grade levels and all subjects. These revisions and updates will take place as the district begins to fund the maintenance of the VDMESHP.

In June, 1997, the Palm Springs Unified School District hired a Technology Coordinator. This is a step in the right direction. However, the Palm Springs Unified School District does not have a web page yet. A district web page will be made a priority with a link to the VDMESHP. A guaranteed confirmation to hire someone to maintain the VDMESHP has not yet been confirmed. Positions of this nature will undoubtedly be on the horizon to meet educational demands.

The VDMESHP is an example of how education can be strengthened and improved. The VDMESHP is in place (http://home.earthlink.net/~fergil/vdm.html) and is ready to serve students, parents, teachers, and administrators (see Appendix E for a disk copy of VDMESHP). Using the VDMESHP will give students and teachers an opportunity to use a worldwide form of technology. Using the Internet and the VDMESHP will open up a new world of options and opportunities for making students' educational experiences come to life. Careful evaluation of the
process will place the Palm Springs Unified School District in the direction of offering computer literacy skills, supportive content and world wide access for their students. The long range pay off will be a technologically literate labor pool that will attract businesses and perk up the economic life of the Palm Springs area.
APPENDIX A

A copy of the letter from Houghton Mifflin Company regarding the copyright permission to use unit titles from the America Will Be social studies textbook integrated into the VDMESHP.

HOUGHTON MIFFLIN

June 19, 1997

Mr. Michele Ferguson
Music Teacher
Vista del Monte School
392 E. Stevens Road K14
Palm Springs, CA 92262

Dear Mr. Ferguson:

Thank you for your letter dated May 7, which requested permission to reprint the unit titles from AMERICA WILL BE in HOUGHTON MIFFLIN SOCIAL STUDIES by Armento, et al., ©1991, Level 5 as part of your Master's degree project linking various Internet sites which relate to our textbook.

Houghton Mifflin Company has no objection to your proposed reprinting of the unit titles from AMERICA WILL BE in HOUGHTON MIFFLIN SOCIAL STUDIES by Armento, et al., ©1991, Level 5 only in conjunction with your Master's degree project of creating a home page for the Vista del Monte Elementary School that links various Internet sites related to the unit topics in our textbook. Permission is granted herein provided no other material from our textbook is included in your project without obtaining further written permission from Houghton Mifflin.

Thank you for your interest in Houghton Mifflin publications and good luck with your project.

Sincerely,

Regina R. Clay
Permissions Associate
APPENDIX B

A copy of the optional survey for the staff to fill out in order to have information about themselves posted on the VDMESH. (Participation was optional).

Dear Teachers and Staff,

Under the direction of my Master’s program and Mr. Tinney, I am creating a Vista del Monte Elementary School Home Page on the Internet. I would greatly appreciate your assistance in helping make this web site a valuable and helpful resource to YOU, your students, their parents, and the rest of the community. This web site will include a section on staff members. When the user clicks on a staff member’s name, a link will take them to a section about that staff member. Each section will include a picture of that staff member and a short bio. That is where I need your help. Could you please supply me with a short bio so that I can transfer the information to the web site? Information such as your teaching experience, classroom highlights, and hobbies and interests would be great! Thanks for your help! Just write the information on this page and then put it in my mailbox. Thank you! ....Michael Fergon

Name:

Grade level:

Education:

Teaching experience:

Classroom highlights and activities:

Hobbies and interests:

Any other information:
A copy of the Institutional Review Board (IRB) approval letter from CSUSB.

May 20, 1997

Michael Fergon
c/o Dr. Rowena Santiago
California State University
5500 University Parkway
San Bernardino, California 92407

Dear Mr. Fergon:

Your application to use human subjects in research has been reviewed by the Institutional Review Board (IRB). Your application has been approved. Please notify the IRB if any substantive changes are made in your research prospectus and/or any unanticipated risks to subjects arise.

Your informed consent statement should contain a statement that reads, "This research has been reviewed and approved by the Institutional Review Board of California State University, San Bernardino."

If your project lasts longer than one year, you must reapply for approval at the end of each year. You are required to keep copies of the informed consent forms and data for at least three years.

If you have any questions regarding the IRB decision, please contact Lynn Douglass, IRB Secretary. Ms. Douglass can be reached by phone at (909) 880-5027, by fax at (909) 880-7028, or by email at ldouglass@wiley.csusb.edu. Please include your application identification number (above) in all correspondence.

Best of luck with your research.

Sincerely,

Joseph Levett, Chair
Institutional Review Board

cc: Rowena Santiago, Science, Mathematics and Technology Education
APPENDIX D

A copy of the human research participant questionnaire regarding the Vista del Monte Elementary School Home Page.

1. Please comment on the home page's ease of use. Is it user friendly?

   There are many user-friendly aspects of the home page. Experienced users will know when the cursor becomes a hand over part of the image map to click there to explore. Less experienced users can get to the same links via the text at the bottom of the home page.

   The page might be even more user-friendly if the directions on what to do with your mouse came at the top of the image map instead of at the bottom. Novice users might not read that far down. Also, most of the links go to other pages on the website, and each of those has a "back to home" link. However, if one clicks on the mustang, the link is to another website and the novice user may not know how to get back by using browser commands.

   A final thought on ease of use has to do with finding the home page in the first place. I searched on all of the major engines and never did find the page that way.

2. Please comment on the home page's design. For example, its color usage, readability, and overall format.

   Some comments above pertain to this item as well. I applaud you for the overall page design. At some point adding some animation would be fun, but as a starter, this page is much more evolved than was my first attempt! The visual tour of the school and staff is well done, even if fuzzy. That probably reflects the resolution of the digital camera. Watch out for the text/background color combinations. For example, it's very difficult to read the black counter on the dark blue background.

3. Do you think that the use of the home page will enhance learning? Please comment.

   It certainly has the potential to enhance learning. Your Study Hall feature and the work you've already done on fifth grade social studies is a great beginning. With accessibility an issue, it's more likely to be used by a greater number of students at this time if it's harvested and placed on the classroom and library computers as well.
as the server for the stations that are already on our network.

4. When the web page becomes accessible to the students and the community, do you believe it will be used for its intended purpose?

   I think there are steps that must be taken to increase the VdM community's use of the website. First, we must start with the teachers as the ambassadors. They must know the site inside and out and understand that its content and design are dynamic; they need to know that it is their website & they contribute their creativity to its growth and individuality. Only at this point will teachers be ready to use it as a curriculum tool with their students and teach their students how to use it unassisted.

   With very few of our clients equipped at home with a computer or WebTV, student access at school must be provided equitably. However, as costs continue to decline there is hope for more universal access. With the potential of our district becoming our own ISP, there's the possibility of providing low-cost user accounts to students for home use.

   As for parent use, we have more challenges to overcome. The greatest of these is that a significant and growing proportion of our parents are illiterate in English. They are being left behind in the techno-revolution. Here's a possibility to consider when our school is connected: a business partnership with local employers of our Hispanic parents in which they contribute funds to us for costs of staffing and materials to provide an evening program to teach English to the parents in our lab. In return, they get better trained employees and we prepare our parents in English while we teach them to use the web.

5: I would appreciate a critique on the home page regarding what you believe is positive or anything that can be improved? Please be specific.

   As I've said above, this is a really good start on a website that is complex in overall design. You've spent countless hours in research and development so far, but it never ends! Some of the comments below suggest some quick fixes, and some are just ideas that occurred as I explored the site.
Nice job on the e-mail list! Art pages are great. However, at the top of each page you need a set of text links showing title and artists' names. Then, next to or at the bottom of each picture, place a "back to top" link.

Principal's Welcome: how about someday replacing the photo with a quicktime movie? In the study hall and social studies areas you have some pages that are too personal, addressing the reader from the "I" and "me" perspective. Remember, this is supposed to be a school website, not a personal home page. If you want that information available, I suggest you have an area that is "Notes from the Webmaster" or some such thing.

On the home page directions, visitors are told to click with the "left" mouse button. There's a pretty big world of users who have only one button on the mouse. It's very good that you have a "back to home" link on each page.

**Brainstorming additions:**

1. Student/Parent Handbook.
2. SBCP School Improvement Plan.
4. Homework Helper?
5. I don't remember if the home page shows address, phone, and fax.
6. Maybe the bilingual staff could help search for educational links in Spanish.
7. What about archiving the Mustang Messenger newsletters?
8. Some links to other sites need to be updated because they have moved.
REFERENCES


