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Online tutor training: An alternative to person-to-person training

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ONLINE TUTOR TRAINING: AN ALTERNATIVE TO PERSON-TO-PERSON TRAINING

A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

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in

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ABSTRACT

Tutors at the California State University, San Bernardino (CSUSB) Learning Center are required to attend training sessions in order to begin tutoring for academic subjects. Student schedules make it difficult for all tutors to attend a training workshop at once, thus some employees do not receive the valuable information they need to effectively conduct their duties and responsibilities.

This project examines the creation of an online tutor training Web site, utilizing the Instructional Design ADDIE model, for the purpose of training tutors who cannot attend a training workshop in person. By communicating in an online format, tutors will be able to access training material at any time and from any location, thereby, insuring that the CSUSB Learning Center's tutoring service runs smoothly and efficiently.

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CHAPTER ONE

BACKGROUND

Introduction

With advances in online technology as well as increasing accessibility, knowledge, and acceptance of the Internet, it is now feasible to provide more information on the World Wide Web. Great segments of the population are increasingly becoming "net-savvy" and are demanding more resources provided in an online format. It is this desire for information that can be successfully utilized by many organizations ranging from businesses, government offices, to educational institutions.

A popular form of communication via the Web is a Web site. Initially, Web sites were quite one dimensional as users could only read information from the screen. Technology has allowed the relationship between the user and the Web to become much more interactive. It is this interactivity that creates a conducive atmosphere for online training. Trainees can access information at any time of the day, thus alleviating the problem of missed training sessions. Also, trainees can learn at a more manageable pace, if necessary.

The Web is a viable format for online tutor training for tutors at the California State University, San Bernardino. Tutors will be able to access necessary documents and training exercises. The online format provides an alternative to person-to-person workshops if a tutor cannot attend such a meeting. The online training Web site is not intended as a replacement for the actual workshop, but as a supplement to the training process.

Statement of the Problem

This project will address the problem of training new tutors at the California State University, San Bernardino (CSUSB) Learning Center who cannot attend a tutor training workshop in person. It is vital that new tutors receive training in areas such as office procedures, tutoring techniques, and communication in order to assist the students of CSUSB. Tutor training sessions are held once a quarter, thus it is difficult to have all new employees attend at the same time. In order to conduct a comprehensive training session, it is ideal to have all tutors attend, however, this is not always possible. Emergencies or other commitments can interfere with employees attending a scheduled meeting. It is ineffectual for a speaker or trainer to repeat previously

covered material or to conduct another training session. Also, in-person training sessions can quickly exhaust resources such as paper, office materials, and equipment used to present any information. Technology has created a hands on type of learner, thus training via the Internet is productive and efficient.

Purpose of the Project

The purpose of the project is to develop a Web site for CSUSB Learning Center tutors that will provide continuous and convenient access to training materials and to alleviate the problem of tutors missing person-to-person workshops. A Web site that includes all of the material covered in a training meeting would benefit those who cannot attend such meetings. Tutors would have access to all handouts and slide presentations used in the actual tutor meeting. Also, additional material could be supplied to the tutors, such as study skills information or a list of tutoring resources available in print or on the Web. Such a Web site would complement and supplement tutor training; allowing tutors to develop their tutoring skills even further.

As stated earlier, interactivity is a crucial component of a successful Web site. Tutors would be able

to download valuable pieces of information as well as communicate with each other and their supervisor, the Tutorial Program Coordinator. The Tutorial Program Coordinator would be able to oversee the training of each tutor in a consistent and convenient manner. With constant communication, the tutoring program can improve and provide quality service to the students it serves.

Significance of the Project

This project will serve to streamline the tutor training process and to enable a department to provide consistent, quality training for its staff. When tutors miss a required training session, this has an impact on the quality of service that tutors provide and it absorbs valuable time and resources. A tutor training Web site would be available any time of day and tutors can progress at their own pace. Essentially, this project would maximize efficiency and improve quality for a tutoring program.

Limitations

Although it has been stated that computer and Internet accessibility is widely available, not all students have regular access to computers. Tutors who do

not have a computer may find online training less preferable than an actual physical meeting. Also, there are many variables when considering computer processing speed, availability of required software and programs, and online connection speed. Also, an assumption has been made that most students are proficient with surfing the Web, but this is not necessarily true. Such a factor also contributes to the limitations of this project.

Definition of Terms

Brick-and-mortar - Reference to a traditional in-class setting located in a building.

Bug - An unexpected defect, fault, flaw, or imperfection.

CSUSB - California State University, San Bernardino

Chunking - The technique of presenting smaller chunks of information to a reader to increase the chances of retaining the information.

End-user - The final or ultimate user of a computer system. The end-user is the individual who uses the product after it has been fully developed and marketed.

Face-to-face - Type of interaction in which two or more people share the same physical space.

Instructional Design (ID) - A step-by-step system for the evaluation of students' needs, the design and development

of training materials, and the evaluation of the effectiveness of training.

Internet - An interconnected system of networks that connects computers around the world via the TCP/IP protocol.

Net-savvy - Being well informed, perceptive, and proficient on the use of the Internet.

Person-to-person - Referring to training sessions conducted when the trainee and instructor are in the same physical space.

Surfing (the Web) - Browsing the Internet.

Traditional training - This refers to training conducted between a trainer and trainee(s) when both are in the same physical space.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

The history of tutoring is one of constant evolution. Its meaning, and concept, has shifted over time. In their book, Centuries of Tutoring, Edward and Elaine Gordon surmise that the principle cause for the lack of a unified history of tutoring is that it has been called so many different names over 2,500 years of social history. The Gordons (1990) go on to say, "much of the history of tutoring was recorded by anonymous individuals whose obscure work evaded public recognition. Our past ignorance of their work left modern educators with an incomplete picture" (p.2). What is apparent is the significant contribution that tutoring has made to the history of education in the form of schooling.

Tutoring began as a one-to-one educational process and eventually found itself being incorporated into "schooling" during the nineteenth and particularly the twentieth centuries. As learning moved from the home to the school, twentieth century America has defined education almost exclusively as a school experience (Gordon & Gordon, 1990). However, tutoring is still

important in schooling today. Peer-tutors, after school remedial programs, and home-schooling are tutoring's modern expressions.

This chapter will examine the origins and development of tutoring in Early America to its integration and importance in today's educational landscape. There will also be an examination of training techniques and how training has developed from a traditional "classroom" type setting to being conducted online via the Internet. Lastly, the Instructional Design Process and Web Design Guidelines will be discussed in order to demonstrate the importance of being aware of these factors in order to develop a Web site, specifically an online training Web site.

Tutoring in the Home

Tutoring had its beginnings in early civilization with the passing on of knowledge through oral tradition. In these early stages of learning and dialogue, the family served as educators and school. Parents were tutoring their children in the ways of life, providing them with skills to survive. As civilization evolved, survival skills shifted from hunting and gathering to learning from books and becoming educated. Parents evolved along with

these changes by continuing to tutor their children or hiring tutors or governesses to educate them.

Many early American colonies mandated educating children at home. In the mid-1650s, these colonies passed legislation requiring parents to teach their children reading, religion, and the laws of the colony. Lawrence Cremin (1970) concluded that, "there is every indication that the colonial household was even more important as an agency of education than its metropolitan counterpart (schools)" (p.32).

The image of tutoring from the nineteenth century is often thought of or portrayed as a form of education available only to wealthy families. Many may be surprised to learn that tutoring in America was not a socio-educational phenomenon limited to a few select children. Large numbers of children from every social background and geographic region had some level of home tutoring experience for all or part of their education (Gordon & Gordon, 1990). Many great historical figures were tutored at home, including Abraham Lincoln, Susan B. Anthony, and Louisa May Alcott. In fact, Alcott was tutored by both Ralph Waldo Emerson and Henry David Thoreau.

While the majority of students today attend school to receive their education, many children continue to be

taught at home. The reasons for this choice vary, but some include parents' objections to political or cultural values taught at school, disagreements with instructional methods, religious reasons, and parents wanting to spend more time with their children.

The History of Tutoring in Early American Higher Education

Tutoring in American higher education began with the first colonial colleges. In these early years, colleges such as Harvard, Yale, and Princeton emulated the British system of providing tutors, who were fellow students or recent graduates, to students to help them learn (Maxwell, 1979).

Harvard, chartered in 1636 as the first American college, adopted the tutorial method of instruction for their students. Up until this point, the college was run by a President in charge of all functions of the institution. In 1644, the overseers of Harvard appointed the first American college tutors to assist the president in educating the students. These tutors were sometimes current students but most often were recent graduates. These recently graduated tutors were only a few years

older than the students they taught and did not know much more.

Although tutoring positions had great prestige value, there was a constant turnover of tutors. At Yale, the typical tutor supervised fifty to seventy students and received a salary of from seventy to ninety pounds per year (Gordon & Gordon, 1990). With a heavy workload and minimal pay, most tutors opted to move on. In describing his tutors, Tomes (1880) stated that "Our instructors were mostly young clergymen, who had sought their tutorships and professorships merely as resting places, on their way to something better which they were hopeful might turn up. They were perpetually shifting, so that it was seldom that the Faculty remained the same for two consecutive sessions" (p.51).

The Role of the Tutor

In the seventeenth and eighteenth centuries, tutors formed the primary teaching staff in colonial higher education. Harvard appointed two tutors for most of the seventeenth century, added an additional tutor in 1699, and a fourth in 1720 (Burton, 1996) From 1686 - 1697, two tutors John Leverett and William Brattle, were the sole instructors of the college. Chief duties of the tutors

included holding classes, aiding students in preparing for classes, visiting students' rooms, presiding in refectory and prayers, and detecting and reporting breaches of discipline (Wertenbaker, 1946). The daily routine of the collegian was similar at all institutions: morning prayer, breakfast, morning lectures or recitations led by the tutors and faculty, dinner and recreation, then the afternoon for study in their rooms (presumably visited by the tutors) (Morison, 1936).

In the 1720s, almost one hundred years after it opened, Harvard employed its first professors. There were differences between the professors and the tutors. Professors taught specific disciplines, lived off campus, and were allowed to marry. Tutors taught the entire curriculum, lived and dined at the college, supervised curricular and extracurricular activities, and were not allowed to marry.

Tutors were given a great deal of authority. From 1642-1646, Harvard College gave tutors the power to supervise the religious activities of students and their conduct in commons and in their chambers. Tutors had the power to assign housing and to take action against students who lived off campus illegally. Tutors also sometimes served as librarians (Oviatt, 1916). At some

institutions, tutors even had the financial responsibility of collecting fees directly from the students. Additionally, tutors had responsibility for approving candidates for degree (Oviatt, 1916). "Early Harvard students were promoted or demoted on their tutor's report of their industry and ability" (Morison, 1936, p.32).

Tutors also served as disciplinarians, administering corporal punishment. At the College of New Jersey, tutors were required to visit dormitory rooms three times a day to ensure students were studying at the prescribed times and to enforce order (Henry & Scharff, 1853). Discipline and exacting punishment were not duties that tutors enjoyed. For tutors, it was not "an easy matter to maintain discipline without being harsh, to be friendly without sacrificing dignity, to distinguish between harmless pranks and real defiance of authority" (Wertenbaker, 1946, p.191). Although the tutors were simply doing their duty, the disciplinarian role often led to poor relationships between tutor and student. Students resented the tutors' almost absolute power over their everyday lives (Burton, 1996).

Since tutors made up the majority of the college staff, they often had administrative duties. Tutors at Harvard sat on the Corporation, allowing them a key role

in governance and decision-making. For the majority of the Corporation's existence, no more than one professor served on the Corporation at any given time. Between 1720 and 1760, the tutors of the Corporation had the power to select and elect professors to their chairs. Eventually, faculty chairs and an Outside Corporation were engendered, thus the authority and professional status of the tutor were reduced.

After the Civil War, a professional intermediate position developed: the assistant professor. "The majority of the faculty were now expected to go through a three-stage promotion: from tutor or instructor to assistant professor to professor" (Pierson, 1983, p.380). Tutors now had more time to refine their skills and knowledge before being given a professorship. Earlier, tutors earned a professorship after perhaps three years of study. Due in part to the refinement of knowledge and a use of a scientific style, there was an increase in the subject matter taught and a specialization in teaching. At many of the schools, tutors no longer taught the entire undergraduate curriculum to a particular class of students. They now taught a single subject just as the faculty did.

In the late nineteenth century, The Morrill Act resulted in the establishment of many land-grant institutions. These institutions opened with professional faculty, thus tutors played a very minor role or did not exist at these institutions. Eventually, American higher education professionalized faculty and replaced the tutorial method of instruction by a more educated and specialized graduate teaching system.

Tutor Training

While there has been resurgence in the importance of tutoring in today's educational landscape, the business of tutor training and tutor supervision is equally as vital to create a successful peer tutoring program. In a national follow-up study of developmental students, Boylan and his fellow researchers (1994, 1995) reported, those programs who graduated large numbers of developmental students had tutor training components while programs that produced fewer graduates lacked tutor training.

The lack of tutorial program supervision by public or private regulatory agencies resulted in some tutors making misleading claims regarding academic improvement that unfairly raised student and parent expectations. Many students and parents grew increasingly frustrated when

learning goals were not achieved. In recognition of a significant change in public attitudes toward the use of private tutorial instruction, the North Central Association of Colleges and Schools (NCA) in 1982 accredited Imperial Tutoring and Educational Services as a special function school for after-school home tutoring (Gordon & Gordon, 1990). This was the first time a tutorial program in the United States received professional recognition.

The number of tutor training programs has increased greatly since the College Reading and Learning Association implemented its International Tutor Training Certification Program in 1989. CRLA has certified numerous programs in the United States, Canada, and even Australia. The founding of the National Tutoring Association in 1992 has added further status to the college tutoring profession.

Training programs today emphasize tutors to use collaborative learning strategies and questioning techniques. Tutors work along with students to *guide* them to the answers for their problems; tutors do not *do* the problems for the students. Tutors also maintain a conversational dialogue with students as opposed to the lecturing technique utilized by instructors. Asking questions, or the Socratic method, is also key in tutor

training. Socratic questioning is one approach that focuses on giving students questions, not answers and is still considered the most powerful strategy for fostering critical thinking.

In a study by Kauziarich and Norton (1998), tutors from 27 colleges in the United States and Canada were surveyed and discovered that tutors rated credit courses and one-to-one meetings with a supervisor as the most useful training experiences. Books, audiotapes, and videotapes of tutoring situations were judged as least useful. The topics tutors rated most useful were learning styles, listening skills, critical thinking/logic, tutoring definitions/responsibilities, questioning/dialogues, and learning and physical disabilities.

Tutoring Benefits Everyone

Tutoring is individualized instruction and peer tutoring is the most popular learning support service in American colleges today. Most colleges offer tutorial services to their students. Tutoring in learning centers is generally free and open to any student, an effort to avoid the stigma of a service for "dummies" only (Maxwell, 1979). Martha Maxwell suggests that tutoring be called

"cross-age tutoring" since most peer tutors are chosen from students who have completed the course they are tutoring. The term "cross-age" does not seem to be the best term to describe peer tutoring because it sounds rather vague. While the term is rather dubious, the notion of peer tutoring, which it refers to, is not.

As stated earlier, before the implementation of public schools, tutoring began with families who tutored their own children and with parents who hired tutors to teach their children the gamut of academic skills. As schools opened, teachers often used children as teachers. In 1531, Valentine Trotzendorf founded the Goldberg School in Silesia, where students taught each other (Briggs, 1998). Although, Trotzendorf was probably not the first one to try this, his school became the model for many other educational programs.

The use of children was instrumental in the development of early American education. Teachers in one-room school houses often dealt with children from different age groups and stages of learning. In order to accomplish their task in assisting all the children, these teachers often used their older and brighter pupils to help younger or slower ones (Gordon & Gordon, 1990).

It may not often be contemplated, but tutoring benefits more than just the students who receive it. Tutoring benefits schools because it fosters communication and collaborative learning amongst students. It is also cost-effective. Cohen (1982) suggests that developmental education programs could save much money and time by using student peer tutors rather than hiring professionals to provide one-to-one teaching.

Tutoring also benefits the tutors themselves. Tutors often agree that they gain from tutoring in ways such as learning to communicate effectively, improving their own academic performance, and clarifying and confirming career goals. McKeachie (1990) best describes it by noting, if you want to succeed in college, don't pay a tutor, pay to be a tutor.

A Brief History of the Internet

The Internet was born out of a research project funded by the U.S. military's Advanced Research Projects Agency (ARPA) in the 1960s. During this time of the Cold War, the military sought the means to maintain communication in the event of missile attacks or nuclear war. The problem with the existing structure was that any hit on a central point of control would disable the entire

network. The government needed a network without a central point of control. In this way, the system would not be vulnerable to a direct hit on a single location. ARPA devised a communication system that would still work if one or more "nodes" of the system were destroyed. A kind of communications Web, that if one link of the Web was broken, information could flow around the broken link to get to its final destination (Mitchell, 2005, ¶1). To accomplish this, a network was devised that allowed data to flow around downed lines and destroyed components. A special communication standard, called TCP/IP, (Transmission Control Protocol/Internet Protocol), was designed to direct the flow of data between computers on the network and around possibly damaged sections of the network (Thomson Course Technology, 2005, ¶3)

For several decades, only the staffs of universities and laboratories that were working on government projects were permitted access to ARPA's internet (ARPANET). ARPANET was the method that researchers used to assist each other in completing projects, no matter the distance. ARPANET itself remained fairly tightly controlled, until about 1983, when its military segment broke off and became MILNET, but TCP/IP continued to link them all (Sterling, 1993). ARPANET and the Defense Data Network officially

changed to the TCP/IP standard on January 1, 1983. On this date, all networks became connected by a universal language, thus January 1, 1983 is considered the official birthday of the Internet (Board of Regents, 2005, ¶3).

In the early 1990s, the government cut much of its funding for the Internet and in 1991, the U.S. Congress passed the High Performance Computing Act to establish the National Research and Education Network (NREN). The goals of NREN were to experiment and establish high-speed, high-capacity research, education networks, and to not only allow commercial activity on the Internet but to find ways to encourage it.

The Internet floodgates had burst and people could now access the Internet via the World Wide Web, a network of servers linked together by a common protocol, allowing access to millions of hypertext resources. A new kind of business arose to meet this need - the Internet Service Provider (ISP). These businesses offered low-cost Internet access to individuals, businesses, and schools. Even more Americans began to "surf" the Web with commercial online services like America Online and Prodigy.

Today, the Internet is a daily part of our lives. It is utilized in a variety of ways by a multitude of users, such as private businesses, corporations, educational

institutions, and community groups. As technology and the Internet continue to advance, we as users must progress as well. After all, we created computers to serve us. Ceruzzi (1998) asserts that we should revisit the question of control. We need to ensure that we can learn to use the computer rather than allowing it to use us. This point seems like the stuff of science fiction, but so were the early ideas of computing.

Online Training

Online training services are available for various types of situations and demographics, from traditional students to those in the workplace. Many institutions incorporate some aspect of online training into their normal training routines. For example, Microsoft has established the Microsoft Online Institute (MOLI). MOLI defines its online classes as "an interactive learning and information resource where learning advisors pair their expert knowledge, guidance, and motivation with electronic self-study materials to provide trainees with a less costly and more efficient route to product knowledge" (Huang, 1997, p. 15).

As in the case of MOLI, many training programs are drifting away from relying solely on the traditional

method of "brick-and-mortar" classroom-like settings. What we are seeing is an increased usage of online training techniques, such as Web sites and hypermedia tools. Face-to-face training is becoming less the norm and is making way for either a complete shift to online formats, or as in most cases, a hybrid of both face-to-face and online components.

Current vs. Traditional Techniques

Along with traditional and online training meetings, Computer Based Training (CBT) is an alternative training method. However, CBT systems only display hypermedia training documents, thus there is little interaction for the user to engage in; CBT would seem to imply user passivity (Gery, 1987). Online training bridges the gap between CBT systems and traditional training. All these methods have converged and spawned an evolutionary hybrid.

Since several training methods have been established, it would be best to closely examine the different methods of training in use today.

Traditional Training

Traditional training refers to training in which trainees attend a workshop conducted by a trainer or facilitator and both parties interact in the same physical

environment; much like the classroom setting. This form of training has long been the established method of conducting employee training.

Computer Based Training

The first dedicated Computer Based Training (CBT) system was PLATO, developed in 1959. PLATO was little more than a programmed instruction teaching machine (Gery & Ravet, 1987, 1998). This technology languished for many years until the computer revolution that began in the 1980s. CBT really hit its stride in the 1990s with the development of multimedia. With multimedia, audio, video, and graphic features could now enhance CBT programs.

CBT is an interactive learning experience between the learner and the computer. The computer provides questions or other such stimuli and the learner responds (Gery, 1987). The computer then analyzes the response and provides feedback to the learner. This type of training can be individualized and allows learners to work at their own pace.

As convenient as CBT is, there are some inherent drawbacks. Since CBT is designed as individualized training, learners must rely on themselves to stay motivated to complete any training. Learners do not receive the same interaction with trainers as in face-to-

face training sessions. Also, CBT programs tend to flow in a linear fashion, thus forcing learners to learn in a predetermined manner. Based upon the foundations of traditional training and CBT techniques, it seems only natural that a hybrid of the two would develop. The combination of these two methods can be seen in online training.

Online Training

Today's technological tools make online training (OLT) an efficient and effective training alternative to both traditional and computer based training. The World Wide Web has aided in melding both forms of training to produce a brilliant compromise to the two methods.

CBT programs are no longer confined to solitary computers. They can now be accessed via the Internet. Learners have the mobility and flexibility to learn at their own pace, anytime and anywhere. Multimedia and hypermedia have expanded the potential of training programs as well by enabling learners to choose how and what they will learn (Huang & Ravet, 1997, 1998). Hypermedia allows learners to break free from the linear rut that most CBT programs follow.

OLT also provides a solution to the lack of human interaction issue. While learners and trainers may not

interact in the same physical space, they can now interact synchronously in cyberspace.

Instructional Design Processes

When developing any project, it is imperative to have a concrete game plan. This is the purpose of the instructional design process. This process is a "systematic planning method that results in successful learning and performance" (Morrison, 2001, p.2). This approach provides a step-by-step system for the evaluation of students' needs, the design and development of training materials, and the evaluation of the effectiveness of training. The Instructional Design (ID) process considers instruction from the perspective of the learner, thus the learner benefits because the instructional designer constantly has them in mind. Morrison states that there are nine elements in a comprehensive instructional design plan:

1. Identify instructional problems and specify goals for designing an instructional program.
2. Examine learner characteristics that will influence your instructional decisions.
3. Identify subject content, and analyze task components related to stated goals and purposes.

4. Specify the instructional objectives.
5. Sequence content within each instructional unit for logical learning.
6. Design instructional strategies so that each learner can master the objectives.
7. Plan the instructional message and develop the instruction.
8. Develop evaluation instruments to assess objectives.
9. Select resources to support instruction and learning activities.

These elements keep the instructional designer on task and serve as a useful guideline when formulating an individual instructional design plan.

An Instructional Design Model

As previously established, the Instructional Design process provides a framework for thoroughly planning, developing, and adapting instruction, based on learner needs and content requirements. Although this process is essential in distance education, where the instructor and students may share limited common background and typically have minimal face-to-face contact, it is also important in traditional classroom environments where new instructional

technology is being used to teach. Although there are over 100 different ID models, the majority follow the same basic categories of design, development, evaluation, and revision (Dick, 1990). The "ADDIE" model, which stands for Analysis, Design, Development, Implementation, and Evaluation, represents one of these basic models of Instructional Design.

Analysis

During this first phase, a number of questions must be addressed so that the ID process that follows is based on proper assumptions. Some of the questions that should be addressed are:

- Who is the audience?
- What do they need to learn?
- What are the delivery options?
- What constraints exist?

During analysis, the designer develops a clear understanding of the "gaps" between the desired outcomes or behaviors, and the audience's existing knowledge and skills.

Design

The Design phase emerges from the analysis phase and it documents specific learning objectives, assessment instruments, exercises, and content. Designers should

specify their objectives for the learner during this phase. Some of the elements of the design phase may include writing a target population description, conducting a learner analysis, selecting a delivery system, and sequencing the instruction.

Development

The actual creation of learning materials is completed in the Development phase. It is during this phase that you will develop the instruction, all media that will be used in the instruction, and any supporting documentation.

Implementation

The Implementation phase refers to the actual delivery of the instruction and the instruction materials. This phase allows the designer to gauge the effectiveness and delivery of instruction. By putting the instruction materials to the test, the designer has an opportunity to correct things and to work out any "bugs." In this phase, the designer wants to ensure that the learners understand the material and that the transfer of knowledge to the learner is seamless.

Evaluation

This phase measures the effectiveness and efficiency of the instruction. Evaluation is an ongoing process and

should actually occur throughout the entire instructional design process. There are two types of evaluation: Formative and Summative.

Formative Evaluation is ongoing during and between phases. The purpose of this type of evaluation is to improve the instruction before the final version is implemented. Summative Evaluation usually occurs after the final version of instruction is implemented. This type of evaluation assesses the overall effectiveness of the instruction.

Web Design Guidelines

The landscape of Web pages on the Internet is one of creative expression, yet insists on universal conformity in order to be effective. While Web pages with many graphics and animations initially attract a user, whether or not the user stays at the site depends on the content. In the world of Web pages, content is king. Since almost anyone can make a Web page, it is important for Web page designers to understand issues of user interface design and usability engineering (Borges, 1995, ¶4).

In their online Web Style Guide, Lynch and Horton emphasize several key areas to plan when designing a Web page. These areas are the Process, Interface Design, Site

Design, Page Design, Typography, Graphics, and Multimedia. Barron, Tompkins, and Tai also discuss guidelines to successful Web design and their ideas are similar to those of Lynch and Horton. The following is a general overview of their findings.

Process

The first step in designing any Web site is to clearly define your goals. You should have a stated mission and objectives to keep your project focused and on task. This is where careful planning is crucial. You need to analyze the content and the audience for your page. The design of your pages may be quite different based on your intent.

Interface Design

Users of Web documents are not passive. Most expect some type of interactivity with the page, whether it be through multimedia or the use of links. However, to access all these things, your interface design must be clear. The ability to navigate through your site is of utmost importance for the user. It is important to have clear hypertext links throughout your site. This means that all pages should have links that lead to another page or back to the home page.

Users want to get information in the fewest possible steps. This means that you must design an efficient hierarchy of information to minimize steps through menu pages. Lynch and Horton state that studies have shown that users prefer menus that present at least five to seven links and that they prefer a few very dense screens of choices to many layers of simplified menus.

Site Design

Site design refers to the organizational layout of your pages and the content on those pages. It is in site design where you must really think about meeting your users' needs. All Web sites are organized around a home page. This is the point of entry for the user to access all your site has to offer. It is on the home page where you want to present a clear list of menus and sub-menus to navigate your site. From the home page, users can navigate to other pages that you may find useful or necessary to include, such as a site index page, a Frequently Asked Questions (FAQ) page, or a Search page. On all your pages, information should be presented as simply and clearly as possible.

Cognitive psychologists have known for decades that most people can hold only about four to seven discrete chunks of information in short-term memory. The way people

seek and use reference information also suggests that smaller, discrete units of information are more functional and easier to handle than long, undifferentiated tracts. The notion of grouping small amounts of information is known as "chunking." Chunking makes information less daunting, as users do not want to read through paragraphs of information.

Hierarchical organization is also very important in site design. Designers should rank chunks of information by importance and organize the information by its relationship with other pieces of information. This presents a logical flow, which is necessary for the user to follow along when navigating your Web site.

Page Design

The spatial organization of graphics and text on the Web page can engage readers with graphic impact, direct their attention, prioritize the information they see, and make their interactions with your Web site more enjoyable and efficient. It is important to strike a visual balance between graphic content and text. Let the visuals lead the users eye to the information and then to the next logical place. It is also very important to maintain a sense of visual consistency on your site so that the user feels a

logical flow when navigating through it. This consistency also provides your site with its unique identity.

There are many other aspects to consider in page design. Headers and footers provide a unique signature for your page. The header on each page of your site can include a distinctive logo so that users remember where they are. Your footers may include more navigational buttons because in many instances, once the user reaches the bottom of the page, your links may no longer be visible.

You may also want to consider using frames to help users in navigating your site. Frames are useful for certain content and greatly facilitate site maintenance. They provide a good way to maintain narrative and design consistency in your site. But frames also impose interface and design limitations. Frames can easily confuse readers who wish to print material on a page or bookmark a page for later reference or navigate using the browser's "Forward" and "Back" buttons. Such things must be considered when dealing with page design.

Typography

Typography refers to the style, arrangement, and appearance of the letterset on the page. There are several factors to consider when presenting text on your Web site.

Your text should have a pattern; headers to indicate the title of your page and to quickly punctuate the content that can be found on that specific page. The text should also be legible, thus you should use clear fonts such as Times, Ariel, or Courier. It is important to remember that when a Web page is loaded onto a user's computer, the font you used must be installed on that particular computer. That is why it is safer to utilize more common fonts such as those listed previously.

The size of your letters also helps to visually organize your page. Readers can quickly distinguish main topics and scan the pages for the information that is of interest to them. Another point to consider is the amount of white space on the page. You can use white space to bring the reader's eye to something specific. White space can also be used to separate paragraphs without indenting the first line. Lastly, you can consider using emphatic tools for visual contrast. These tools include bolding text, using italics, underlining, coloring text, and using capital letters.

Graphics

Graphics are integral to the user's experience with your site. When using graphics, make sure that they are relevant and necessary to convey your message. There is no

point in using an abundance of graphics if they will clutter your page and possibly affect the download time for the user. You must think about the size of your graphic files as well as the number of colors in the graphic. These factors affect the download time for your users.

Because of the bandwidth issues surrounding networked delivery of information and because image files contain so much information, Web graphics must be compressed. Different graphic file formats employ varying compression schemes, and some are designed to work better than others for certain types of graphics. The two primary Web file formats are GIF and JPEG.

Multimedia

Multimedia is the combination of text, graphics, sounds, and moving images. Like graphics, multimedia must be used sparingly and when relevant. Multimedia also suffers from bandwidth issues, thus if your user must wait too long for a download, you will lose them. Make sure technology can meet the demands of your content.

You should be wary of fledgling technologies. Plug-ins that allow users to see new and exciting things using their favorite browser software are constantly being introduced. This is especially true of multimedia; the

options for encoding and delivering audio, animations, and video are dizzying. Designers should remember to keep things simple. If the user becomes frustrated by the act of installing plug-ins, they may go elsewhere. Also, you should create your content with standard file formats for operating systems and browser software and not one that could quickly become obsolete.

Summary

As technology has advanced and adapted over the years, the same can be said of tutoring. Tutoring has come a long way since its early start in the family home. It has established itself as a critical component of education, thus finding relevance and importance in higher education. It is a natural progression for tutoring to incorporate the newest technologies and advances in order to expand its reach as a communicative outlet, much like the Internet.

Such technologies like Web pages must be developed with care and not haphazardly. It is crucial to consider the Instructional Design Processes when developing any lesson plan for learners. As demonstrated in the general Instructional Design ADDIE model, careful thought and consideration must be given to the learner to create the

most efficient and effective lesson. If the lesson includes a Web page, then there are many guidelines to follow to present the most useful site to the end-user.

Tutoring, training, and Instructional Design all require discipline, planning, and consideration of the learner. All three areas seamlessly melded together in the development of this particular online Tutor Training Web site project.

CHAPTER THREE

PROJECT DESIGN PROCESSES

Introduction

There were many logistical aspects to ponder and plan before developing the actual tutor training Web site. It was important to take into account the purpose of the Web site as well as the overall design, the developmental process, and the actual implementation and evaluation of the project. It was imperative to collect the necessary information to convey to the end-user, making sure that no redundant material would disturb the meaning and the flow of the Web site. Careful and considerate thought of the user was a driving force in the creation of this project.

Analysis

When assessing the goals and objectives of this project, creating an online training tool for tutors who were not able to attend the actual tutor training workshops at the CSUSB Learning Center was paramount. Newly hired tutors are the target audience. These new tutors need to be trained in order to tutor the students of the CSUSB campus.

In order to identify the needs of the tutors, a survey was conducted to gauge their general attitude towards online training. Of the group surveyed, 100% have access to the Internet and 80% would prefer online training over an in-class training session. This verifies my assumption that tutors would prefer an online training tool.

Design

Since users make judgments from immediate visual assessments, the look of the Web site had to be attractive, simple, and clean. There were many aspects to consider such as colors, graphics, fonts, text, and navigation.

Content

The crux of any Web site is the content. While colors, graphics, and animation are nice to look at, users want reliable and/or informative information. This online training Web site includes training material for new tutors, study skills guides for anyone seeking such information, and supplementary material such as links to other helpful resources. Tutors using the Web page for their training would navigate the site with a training

manual, which would require them to answer questions to verify that they are reading through each lesson.

Color

For the Web site, the colors of the California State University, San Bernardino (CSUSB) were used. The school colors are blue and white. These colors were perfect for the overall look of the site because they enabled the use of a white background, which would make most text easier to read. The blue provides a nice accent to the appearance of each page.

Graphics

The use of graphics was sparse so as not to detract from the true "meat" of the site; the training and study skills information. The splash page makes use of an animated gif of a running coyote (see APPENDIX D). The coyote is appropriate as it is the mascot for CSUSB.

On a few other pages, there are pictures of actual tutoring sessions, which serve to remind the user the purpose of this site and why he/she is training. In the "Staff" section, pictures of the Learning Center staff and their bios were included. Also, while not true graphics, colored text boxes with various pull quotes from some of the text on the site were used. These items also have a way of drawing the eye to the page.

Fonts

When it came to fonts, fairly universal fonts were used; meaning that most computers would have the particular font stored in their word processing folder. The two fonts primarily utilized were Arial and Times New Roman. These are standard fonts for most computers and they are also easier to read than most fonts. Arial was used mostly on headers and introductory texts, while Times New Roman was used on lists and instructions. These fonts kept the look of each page of the Web site crisp and clean.

Text

The text on each page was kept to a minimum. Most users do not read complete texts when navigating a Web site, thus sentences had to be short and concise. The text was manipulated to make it more readable by using larger sizes and by the use of spacing. By using these techniques, items seem to pop off the screen and users can quickly find what they are looking for.

Navigation

Like everything else on the site, navigation was kept simple. From the home page, the user has the choice of using one of the six navigation buttons on the left of the page or another listed set at the bottom of the page.

These navigation buttons hyperlink to the main areas of the Web site.

Once a button is clicked, the user is taken to that particular link and there may be additional links to choose from. If the user clicks on "Study Skills," he/she will be presented with a list of additional links, each one leading to that particular study skills page.

A few important navigational features used were "Return" buttons and a link to return to the top of the page. The return buttons make it easier for users to go back to the previous page once they reach the end of the current page without having to click the "Back" button in their browser. The link to return to the top of the page is most useful when there are long lists on the page, such as the list of study skills.

Music

A piece of music was used for the home page. It was a free piece of music downloaded from the Internet. The piece is rather tranquil and eases the user into the use of the Web site. It is not imperative for the user to listen to the music, thus speakers are not necessary. The piece of music is not looped, thus it ends at 44 seconds. The music was not looped because it may become annoying or repetitive for the user.

Development

Hardware Used

The following hardware was used in the creation of the online training course: a Gateway E-4200 at home, a Dell GX270 at CSUSB, and an Olympus C-700 digital camera. Both computers were used to run the software required to create the Web site and the Panasonic digital camera was used to take the photos that appear on the site.

Software Used

To create the online training course, Microsoft Publisher was used. While it is not the most ideal authoring tool, it was the most accessible for me. Publisher is also relatively simple to use and was good enough for my needs. Adobe Acrobat was utilized to create the PDF document for my site.

Microsoft Word was also used to create many of the documents posted on the training course site. The listed items for the Tutor Training and Study Skills sections all link to documents created in Word.

Implementation

Each quarter, a tutor training workshop is conducted for newly hired tutors. The workshop is usually held on a Saturday, but occasionally a tutor cannot attend the

session. It is for such situations that the tutor training Web site would be most useful. Tutors must receive this training in order to begin tutoring in the CSUSB Learning Center.

The online tutor training program is a viable tool in ensuring that tutors receive the required training in order to begin tutoring. While I have not implemented the online training site into the current training process, I plan to eventually utilize this advantageous tool.

However, the online tutor training site has been evaluated by current CSUSB tutors. With their feedback and input, I have been able to make the necessary changes and upgrades to make the site much more useful to the target audience of newly hired tutors.

Evaluation

In order to correct any flaws and to improve the online tutor training program, a formative evaluation was conducted. I created a survey that first assessed each tutors attitude and preferences to online training. Then the tutors were asked specific questions regarding their experience navigating the online course. This feedback helped to shape the appearance, content, and structure of the Web site.

Five CSUSB Learning Center tutors were asked to evaluate the tutor training Web page. Each tutor was asked to navigate the Web page and then was given the survey questioning them about their experience. Each subject spent about 10 to 15 minutes navigating the site. Based on their feedback, changes were made to the Web page.

All the tutors found the site to be useful and visually appealing. While there were no major flaws with the navigational aspects of the site, there was one change made based on a tutor's observation. One tutor noted that the FAQ's for tutors and tutees should be on separate pages as opposed to being combined onto one page. This was a helpful suggestion since creating two FAQ pages would clarify for whom each page is intended for.

The only real criticism was that a few tutors wanted more graphics and animation. While it would increase the aesthetic of the site, I am not in favor of including many more visual elements. I am concerned that such additions would increase the demands on bandwidth, thus making the load time for the site much longer than necessary. Almost all the tutors agreed that content and user-friendliness were most important to them when viewing a Web page. The element of sound was, by far, the least important factor

when viewing a web page. Only one subject noted that sound was important to them.

Based on the evaluations, the online tutor training Web page is accomplishing its goal of being both useful and visually appealing. However, online training is not the overwhelmingly favorite option for tutor training. The choice of training in a classroom setting is just about equal to those who would prefer online training. Two out of the five evaluated tutors would still prefer in-class training sessions. It would be interesting to observe the data if more tutors were evaluated for this project.

Summary

While the design process in not overly complicated, it is rather time-consuming and crucial to the development of a successful product. It is important to ask yourself what the purpose of your project is. From there you must analyze the needs of the end user and what tools you will need to bring the project to fruition and completion.

Developing the design aspects of a Web project involve many hours of planning and careful consideration of your users. It is essential for a Web design to be visually arresting and easy to navigate; all while conveying and delivering the required information. It is

about making the best first impression possible so that the user will want to get to know your site and eventually like it.

After the planning stage, the development stage also requires its share of patience and cautious decision-making. The designer must be aware of the tools (hardware and software) that are available to him or her in order to create the best product possible. From there, the product must be implemented; and through trial and error and careful evaluation, you can reach your end product.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The development of this project helped me to peer beyond the surface of Instructional Design and Web page design. Initially, I thought of the online tutor training Web site as just another Web site to toss onto the World Wide Web. However, as I delved into my research, I discovered that a Web page geared towards learning is a complex undertaking. There is a certain intricacy in creating a site for the end-user. I learned to appreciate the concept of Instructional Design.

By committing myself to learning about ID models such as ADDIE and about Web Design Guidelines, I feel confident that I have produced a viable product for my target audience, the tutors of the CSUSB Learning Center. From the evaluations of my subjects, I have learned enough to reach some conclusions and to make a few recommendations.

Conclusions

The most interesting outcome of the project was the discovery that almost an equal number of tutors prefer online training to person-to-person, classroom-type

training. While all tutors surveyed agreed that online training is convenient, those who prefer person-to-person training appreciate the contact with a live group of people. Since this is the case, it can be concluded that online training should be used as a supplemental tool to actual workshops.

In terms of what tutors prefer in Web designs, ultimately, the simpler the site, the better. Users prefer clear and easy navigation, well-defined links, and a visually appealing site. Graphics and animation were also important to a majority of those surveyed. Sound was not a major concern for most of the tutors. Thus, when designing a Web page, designers should keep things simple. The key element is to provide relevant and useful content. Ultimately, it is content that keeps the user at your Web site. It is important to utilize an Instructional Design model, such as ADDIE, along with Web Design Guidelines to create the most effective and efficient learning tool.

Recommendations

When discussing Web page design, there is one major recommendation that I can make. If bandwidth is not an issue, it might be prudent to appeal to users with more graphics, animation, and video. Most learners are visual,

thus such tools will keep them at your site long enough to explore the content. Also, any Web page should be updated regularly to give the user a reason to keep coming back to your site.

As for my recommendations regarding the existing tutor training program at the CSUSB Learning Center, I believe an online tutor training program should be incorporated into the current training routine. It appears that tutors still prefer person-to-person workshops, thus the online tutor training tool should be used as a backup or supplementary item. While the training tool will provide new tutors with some independence, it is necessary for the Tutorial Program Coordinator to monitor each tutor's training progress.

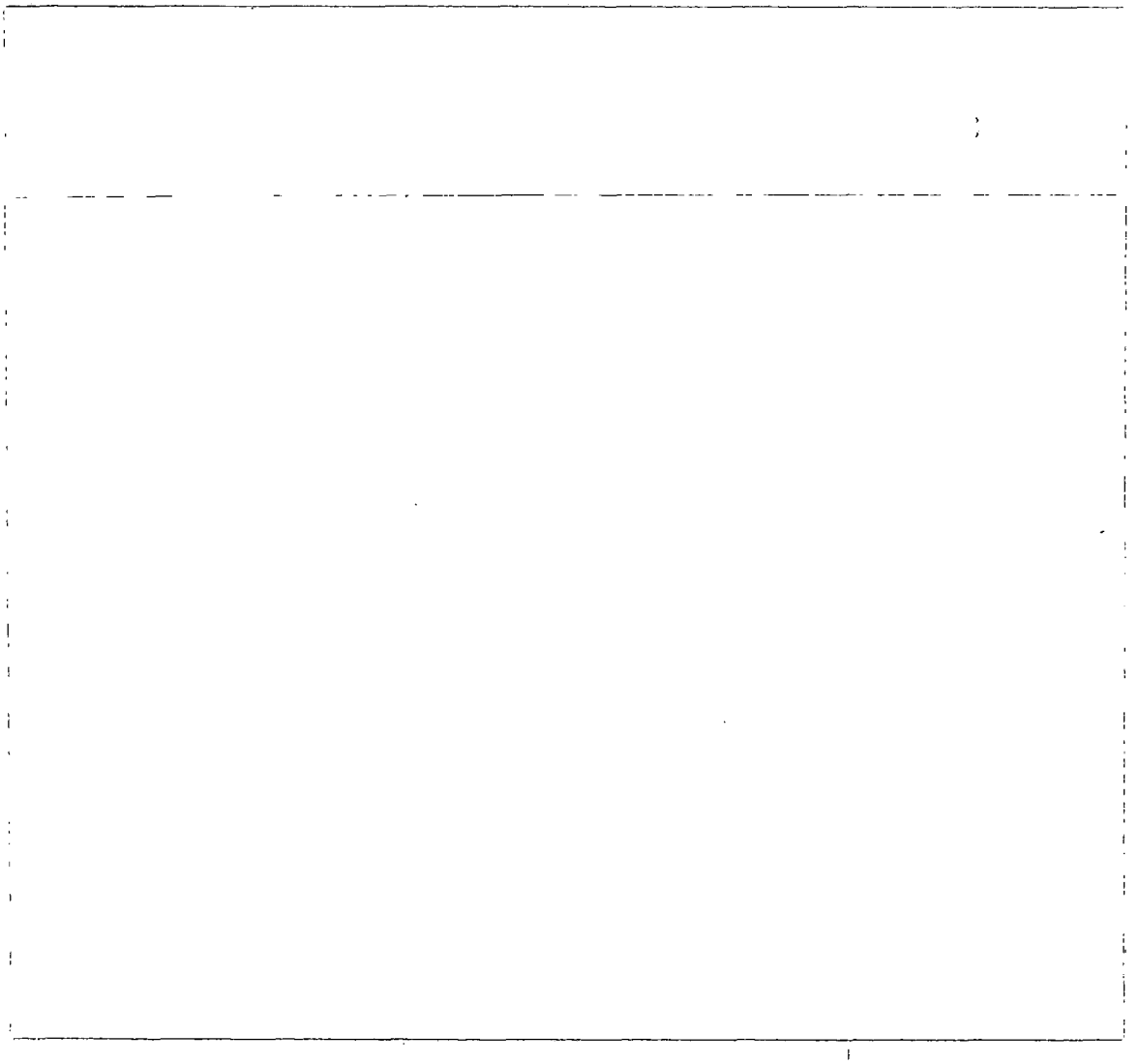
Summary

An online tutor training program is seen as a positive addition to the current techniques utilized at the CSUSB Learning Center. After testing and evaluating the program, it has been rather successful in accomplishing the goals that were set for it. Tutors found that the lessons on the site were easy to navigate, the instructions were clear, the material was useful, and the overall appearance of the site was attractive.

It is with high hopes that the CSUSB Learning Center will consider integrating the online tutor training Web site into its current training process. The Learning Center would make the site accessible from its main office Web page so that tutors and visitors may have access to it during any time of the day. The development of this project has been an enriching and rewarding experience for me and my burgeoning skills in instructional technology. I am pleased that I can use my acquired skill set to assist in something as vital as tutor training.

APPENDIX A

CD OF PROJECT



APPENDIX B

INFORMED CONSENT FORM

INFORMED CONSENT

The study in which you are being asked to participate in is designed to test the usability of a newly developed tutor training website for the CSUSB Learning Center. This study is being conducted by **DAVID REYES** under the supervision of **DR. EUN-OK BAEK, PROFESSOR OF EDUCATION, INSTRUCTIONAL TECHNOLOGY.** This study has been approved by the Institutional Review Board, California State University, San Bernardino.

In this study you will be asked to navigate through a tutor training web site developed for the CSUSB Learning Center. Afterwards, you will be asked to complete a survey that will gather your impression of the web site. The survey should take about **5** to **10** minutes to complete. All of your responses will be held in the strictest of confidence by the researchers. Your name will not be reported with your responses. All data will be reported in group form only. You may receive the group results of this study upon completion on **Friday, May 27, 2005** at the following location, **University Hall, Room 351**.

Your participation in this study is totally voluntary. You are free not to answer any questions and withdraw at any time during this study without penalty. At the Learning Center Director's discretion, you may be paid for your participation in this project. In order to ensure the validity of the study, we ask that you not discuss this study with other students or participants.

If you have any questions or concerns about this study, please fell free to contact me, or **DR. EUN-OK BAEK** at **(909) 880-5000, x5454.**

By placing a check mark in the box below, I acknowledge that I have been informed of, and that I understand the nature and purpose of this study, and I freely consent to participate. I also acknowledge that I am at least 18 years of age.

Place a check mark here ☐ **Today's date:**_____

APPENDIX C

EVALUATION SURVEY

Online Tutor Training Web Site
Evaluation Survey
David Reyes

You have been asked to participate in a survey to evaluate the effectiveness of an online tutor training web site. Your answers will help to create a useful end product to be used by tutors at the California State University, San Bernardino Learning Center.

1. Do you own/use a computer in your household?
   Yes No

2. Do you know how to use the Internet?
   Yes No

3. Do you have Internet service in your household?
   Yes No

4. Would you prefer to attend training in a classroom setting or online?
   Classroom Online

5. Which of the following factors are **most** important to you when viewing a web page? (Select all that apply)

5a.	Content/Information	
5b.	Visual Appeal (i.e. colors, layout, graphics)	
5c.	Sound	
5d.	Interactivity (i.e. E-mail, message boards, exercises/activities)	
5e.	User-Friendliness	

6. List any factors that cause you to avoid or discontinue using a web site:

POST PROJECT

1. Is the purpose of the project clear?
   Yes No

2. Did you understand the information presented on the web site?
   Yes No

3. Is the web site visually appealing?
   Yes No

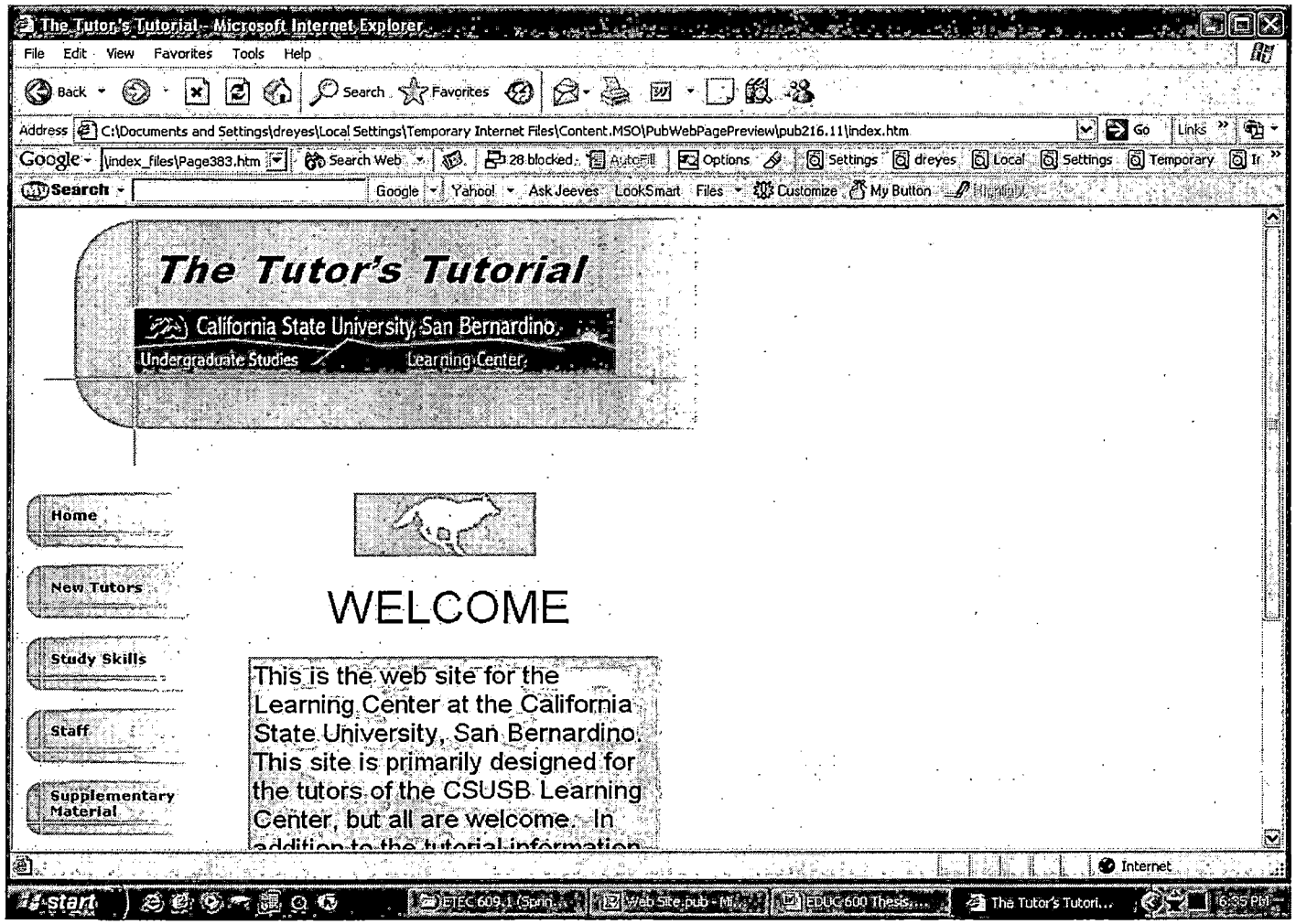
4. As a tutor, would you find the web site useful?
   Yes No

5. Would you prefer to attend training in a classroom setting or online?
   Classroom Online

6. What suggestions do you have, if any?

APPENDIX D

SCREEN CAPTURE


The Tutor's Tutorial - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address C:\Documents and Settings\dreyes\Local Settings\Temporary Internet Files\Content.MSO\PubWebPagePreview\pub216.11\index.htm
Go Links
Google \index_files\Page383.htm Search Web 28 blocked AutoFill Options Settings dreyes Local Settings Temporary
My Search Google Yahoo! Ask Jeeves LookSmart Files Customize My Button
The Tutor's Tutorial
California State University, San Bernardino
Undergraduate Studies Learning Center
Home
New Tutors
Study Skills
Staff
Supplementary Material
WELCOME
This is the web site for the Learning Center at the California State University, San Bernardino. This site is primarily designed for the tutors of the CSUSB Learning Center, but all are welcome. In
Internet
start
EDUC 600 Thesis...
The Tutor's Tutori...
6:35 PM

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