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ASSISTING STUDENTS WITH CONCEPT ACQUISITION IN BASIC
SKILLS READING THROUGH THE USE OF AN INTERACTIVE WEBSITE

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
Michele Barbara Laveaux

June 2005

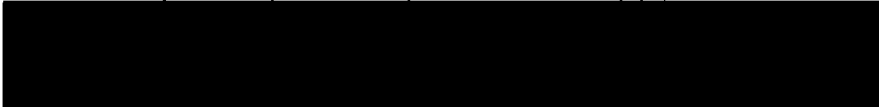
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ABSTRACT

Every semester, at one of the many community colleges in Southern California, there is a high number of students enrolled in the Basic Skills English 10A Beginning Word Knowledge and Reading Skills class that fail the first test which covers reading and concept acquisition. Students relate this to their inability to comprehend and retain the information on these concepts due to the lack of exposure and practice within the class materials. Also, students often drop the class after failing the first, and supposedly easiest, test because they get discouraged.

An effective interactive website was created based on the literature surrounding reading and concept acquisition skills in adult learners. The website will enhance reading and concept acquisition skills enabling students to pass the first test, and give them self-confidence, encouragement, and motivation to continue on thereby increasing retention.

ACKNOWLEDGMENTS

I would like to acknowledge my professors, specifically Dr. Baek and Dr. Newberry, for their patience, encouragement, and guidance throughout my learning process. They were instrumental in helping me create a quality product. I would also like to acknowledge my colleagues and friends; Diana Sisk, Noreen Jacquez, and Beth Roberts; for their support and assistance in helping me get through my masters program.

DEDICATION

This project is dedicated to the three most important people in my life, my daughters Chelemar, Kyrrie, and Tawnae. Their sacrifices and unwavering support kept me going when times got tough and I thought I was not going to make it. I am privileged and proud to be their mother, and will strive to be someone they can each be proud of as well.

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CHAPTER ONE

BACKGROUND

Introduction

Before students can enroll in college level English and math classes they are required to take an Assessment test. Although the placement scores for reading vary among community colleges, an average score of 29 or below out of 120 typically places students in basic skills reading classes (See Appendix B). Once they are placed at this level, students must complete all course work to meet the prerequisites for moving up to college level English.

This can be a very difficult task as adult learners have gotten by on their life experience, which has given them an advantage on vocabulary knowledge, but only at lower reading levels. This advantage seems to disappear at higher reading levels such as those needed for college (Greenberg, Ehri, & Perin, 1997). Also, adult learners are in classrooms with students ranging from young adults just out of high school to senior citizens. These factors need to be taken into consideration when creating course materials for adult learners. As Teresa Smith (1995) points out,

"Adults learn differently than children do. And adults don't want to be treated like children....some adults may be intimidated or even frightened about entering a classroom after many years away from school" (p.44).

With this in mind, activities should not only focus on the subject matter, but the delivery as well. This will help support a heuristic learning experience for adult learners. If the delivery gives too much information in a short amount of time, it can be overwhelming. On the other hand, too little information can cause the learner to feel incompetent and be discouraged resulting in nonproductive affective learning.

The interactive website will give students access to information, computer exercises, and a program template where they can acquire knowledge and skills at their own pace. The information students access can be applied to the computer exercises thereby enhancing comprehension. Furthermore, this will help them build their confidence level motivating them to continue with the class and increasing retention.

Statement of the Problem

Students who are enrolled in the Basic Skills 10A Beginning Word Knowledge and Reading Skills class are required to learn and comprehend concepts. They show the acquired learning through a test, which has them write definitions for concepts, choose the correct multiple choice sentence that best describes a concept word, and write sentences using the concepts correctly. When students come in for the first time, they receive a packet that has an explanation and definition of each concept as well as instructions to access a computer program that contains practice activities. Unfortunately, the computer program, created by the SkillsBank Corporation, is antiquated. There are only a few exercises within the program intended to provide students with an understanding of concepts, which is not sufficient to support the desired learning outcomes.

Unfortunately, students are not passing the first test and report that there is not enough information or computer exercises available within the class materials to assist them with the necessary reading and concept acquisition skills. They have also expressed concern in not having exposure or practice writing sentences using concepts correctly as required on the test.

Purpose of the Project

The purpose of the project is to develop an interactive website that allows adult learners enrolled in the Basic Skills 10A Beginning Word Knowledge and Reading Skills class access to additional resources for reading and concept acquisition. The website was created based on the requirements of the test and includes definitions and sample sentences of concepts, Internet activities, and a program template for sentence writing. Students will apply what they learn and receive immediate feedback after completing each activity to reinforce learning. After using the web site, students will have a better comprehension of concepts enabling them to pass the first test.

Significance of the Project

The key significance of this project is to enhance student success in passing the first test and increase retention for the Basic Skills 10A Beginning Word Knowledge and Reading Skills class. This will be achieved through the interactive website which scaffolds information, activities, and exercises that focus on reading and concept acquisition.

Although this project is specific to one of the ten basic skills courses offered, it is believed that the other courses could benefit as well. The flexibility of the website is such that it allows for ease of application and content formatting to focus on the other basic skills subjects. The web pages are templates that content for any subject can be inserted in. For example, the content for math activities can be inserted into the template pages thereby creating a website for basic skills math. This would then prepare students not only for college level English, but for math as well.

Limitations

During the development of the project, a number of limitations were noted. These limitations include:

1. Students having limited computer skills
2. Limited time for students to spend on reading and concept acquisition
3. Availability of computers
4. Time constraints for Instructional Technology (IT) department
5. No Internet access for website in Basic Skills lab at this time

6. Target audience not able to test web site at this time
7. Projected semester website would be loaded to campus server/website is Fall 2005

Definition of Terms

The following terms are defined as they apply to the project:

Heuristic—learning that is achieved by the student through investigation resulting in discoveries.

Affective—learning that is influenced by emotions due to frustration, anger, and feeling incompetent.

Scaffolding—building on activities to help students achieve the desired learning outcomes.

Mitigating—justifying reasons that need to be understood when creating a program to assist adult learners with reading comprehension.

ABE—Adult Basic Education programs similar to basic skills programs that are geared towards increasing adult learner's basic skills competencies.

Lexical—understanding the words that are being read.

Efficacy—belief one has about their ability to be successful.

Iterative—something that is ongoing so as to make revisions as needed.

ADDIE—the conceptual components of the instructional design process that includes analysis, design, development, implementation, and evaluation. It allows knowing the target audience, and applying appropriate instruction to meet their needs and goals.

Constructivists—those who believe the learner is an active participant in their learning.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

The number of adults that has difficulty reading is excessive. According to Castle (1991), "As of 1990, 1 in 20 adults has problems in reading newspaper headlines, 3 in 20 have trouble reading the sports pages, 4 in 20 cannot easily comprehend wire service stories, and as many as 8 in 20 have difficulty with manuals, safety directions, and product labels" (p. 9). This hinders a person's ability to function in everyday life, be marketable for employment if they so desire, or just be in the social mainstream. It also gives way to the extreme need for basic skills programs.

There are mitigating factors that must be considered in order to assist adult learners in basic skills reading programs. The first are the challenges for adult learners with respect to their reading and concept acquisition skills. "The reason many basic-skills programs fail is that they use materials designed for children" (Smith, 1995). A large percentage of adults have been out of school for many years, and the last thing they want is to be treated like children when they enter the classroom.

"One thing which it is very important to understand about adult learners is that they are adults" (Wolf, 2004, p. 13). The second are the effective strategies to support adult learners reading and concept acquisition skills. Many adults struggled with reading and did poorly in school. This could be due to the fact that the materials did not engage or motivate students to learn. "College students, enrolled in basic skills courses (i.e., English, math, reading), sometimes lack motivation to fully participate in class activities and related homework assignments" (Lewis, 2004, p. 188).

Through an effective instructional design process and web design elements, which will also be discussed in this chapter, the previously mentioned factors surrounding adult learners with low reading and acquisition skills will be assessed. This will lead to the creation and eventual implementation of an interactive website that will engage adult learners and empower them to take ownership of their learning.

Reading Challenges for Adult Learners

There are varied reasons adult learners enroll in basic skills programs. The majority of adults, however, are placed in these programs because they want to go to

college, but do not score high enough on the assessment test to enroll in college level courses. In his article Dr. Jacobs (2004) describes these programs as being "connected so that adults can move seamlessly into college" (p. 4). Also, many adult learners have been out of school for long periods of time and their reading and concept acquisition skills are not at a level of competency. Skinner and Gillespie (2000) explain "The long-term goals of the ABE Program are to bring learners to levels of competency in the basic skills that allow them to become independent readers, spellers and writers..." (p. 152). One key aspect that any basic skills program must keep in mind is these are adults who are trying to come back to school after lengthy absences and share classrooms with younger adults or students just out of high school. This can be very intimidating and have a negative effect on the learning context for adult learners.

It has been argued by adult education theorists that, "in comparison with younger learners, adult learners bring a more extensive and usable set of experiences to the learning context upon which they can build new knowledge" (Merriam & Caffarella, as cited in Belzer, 2002, p. 104). Past experiences can be beneficial but challenging as they

can create obstacles to learning. The adult student's attitudes towards reading are shaped by their earlier school experiences (Belzer, 2002). It was common teaching practice in earlier grades to have students read aloud, which gave them "a passable vocabulary repertoire, but debilitating problems in obtaining even literal meaning from text" (Fischer, 2003, p. 248).

These reading problems continued into adulthood creating scripts of school reading in which Belzer (2002) claims alienated adults from the act of reading. This alienation had a profound effect on adult learner's attitudes and behaviors towards reading. McKenna (2001) stated that reading attitudes are precursors to behaviors. He observed three factors in the acquisition of reading attitudes: the direct impact of reading, beliefs about the outcomes of reading, and beliefs about cultural norms concerning reading (McKenna as cited in Belzer, 2002).

Morrison and Ellis (2000) explain "age of acquisition has been reported to be a predictor of the speed of reading words aloud (word naming) and lexical decision, with early-acquired words being responded to faster than later-acquired words in both tasks" (p. 167). Adults today do not read aloud as they had to in the early grades mainly because that type of "reading in school was boring,

had little to offer them, and was simply a task they had to get done to get by" (Belzer, 2002, p. 111). This type of learning is not learning at all because it does not engage or motivate the student. Wolf (2004) puts it in plain words as, "a non-active learner is not learning" (p. 15).

Effective Strategies to Support Adult Learners

Although the reasons adult learners have difficulty with reading and concept acquisition are many and varied, the strategies to assist the learning are universal. Students must be engaged and motivated while making the learning specific, realistic, and important to them. Wolf (2004) explains,

"It does no good to continually beat adults over the head with the message of the importance of improving skills. You can't make people think something is important if it is not evident in their daily life that it is" (p. 15).

What is important to traditional students is earning transfer credits, a certificate, or a degree. When it comes to making the learning specific and realistic to those goals, these students today have their own expectations. "They expect the discussions that

contribute to their [subject matter] mastery, meaningful activities that avoid busy work, frequent feedback, and appropriate uses of up-to-date technology resources" (Cox, Mitchell, & Kaliski, 2006, p. 23).

For the adult learner, the non-traditional student however, this is not the case. They are in basic skills programs for specific learning and acquisition skills. These students bring with them their own unique expectations of learning that do not include mastery of subject matter or uses of up-to-date technology. Their expectations instead encompass assurances about their ability to learn and receive assistance with the activities necessary to acquire new knowledge and improve their skills. Deci and Ryan (1985) describe it as, "The extent to which one engages in an activity depends upon the beliefs one has about self-competency or efficacy" (as cited in Alfred, 2002, p. 3).

Adult learners do not always have self-confidence in their ability to learn, which can hinder their learning process. For them, the strategies for learning should be taken in steps thereby motivating them to expend an individual effort to learn. According to early cognitive theories "one facilitates learning by breaking a complex task into component parts to be taught and learned in

practical isolation by the individual learner" (Deci and Ryan, as cited in Alfred, 2002, p. 3). Giving students tasks or activities in parts enables them to individualize their learning by working alone, at their own pace, and not be intimidated by other students. To support this type of learning requires that students be given realistic, positive expectations of their performance, frequent feedback, and recognition (Cox, et al., 2006). To increase the effectiveness of the acquired learning, students should be encouraged to reflect on their progress through writing notes or journals.

Journal writing activities are kinesthetic tools that promote not only writing skills but also reading skills as well thereby effectively engaging adult learners. Palmer, Alexander, & Olson-Dinges (1999) explain journal writing as an effective process that helps individuals to achieve literacy acquisition through their written responses to learning activities. In order for the journal writing process to effectively support and motivate students to learn, however, the learning activities need to "have a tangible outcome [to] give students something they can see when they're done" (Cox, et al., 2006, p. 147). This end product will help adult learners feel a sense of

accomplishment, which in turn will increase their self-confidence and motivation.

The nature of the learning activities will also have a profound effect on the student's acquisition skills and motivation as well (Cox, et al., 2006, p. 148). This means that the activities,

"Need to challenge student's thinking. Activities need to be authentic. Asking students to solve new problems, apply new ways of looking at old information, or use new tools and skills will communicate that you have confidence in their learning and increase their confidence in themselves. If activities do not engage students' imagination and higher-level thinking, they will soon become bored and lose interest" (p.148).

What must be at the forefront of the learning strategies and activities to support adult learners is the need to engage and motivate students.

Instructional and Web Design Elements

As stated previously, a vital component of the instructional design process is a critical assessment of the needs, goals, and factors that hinder learning for adult learners. This will lead to the creation of an

effective interactive web site with the purpose of engaging this student population. As Deubel (2003) explains, "learners must be assessed for their needs and capabilities so that instruction is appropriate and meaningful" (p. 64). This can be achieved through an instructional design model that applies the "core elements of analysis, design, development, implementation, and evaluation (ADDIE) to ensure congruence among goals, strategies, and evaluation and the effectiveness of the resulting instruction" (Gustafson & Branch, 2002, p. 18).

It is the ambition of instructional design models to provide a link between learning theories and the practice of building instructional systems (de Lisle, 1997). There are many instructional design models to choose from, and each uses part or all of the ADDIE elements to guide the instructional design process. These include, but are in no means limited to, the Dick and Carey, Hannafin and Peck, Knirk and Gustafson, Gerlach and Ely, Jerrold Kemp, and Tripp and Bichelmeyer's Rapid Prototyping models. The appropriate model to be used should be determined by how it pertains to the designer's intended instructional intervention, and from the information obtained through the application of the ADDIE elements.

The Dick and Carey design model has been the leading instructional design model until the appearance of the Recursive and Reflective, Design and Development (R2D2) by Willis in 1995 (Deubel, 2003). Dick and Carey is an iterative process that uses a systems approach and can be applied to K-12, business, and government context areas ("Selecting Design Models," 2005). This model is ideal for complex situations as opposed to those that are smaller and more simplistic in nature. For these types of situations, such as the creation of an interactive web site that will engage adult learners, the Hannafin and Peck design model would be better suited. It is a three-phase process that begins with a needs assessment, then the design phase, followed by the final phase of development and implementation of the intended instruction. A process of evaluation and revision is ongoing throughout all three phases of this model ("Selecting Design Models," 2005). By constantly evaluating and revising, the final product of the instructional intervention will be better able to effectively satisfy adult learner's needs and goals. Another positive aspect of the Hannafin and Peck design model is its ease of use for the novice designer.

For those who are expert instructional designers, the Tripp and Bichelmeyer's Rapid Prototyping design model can be used. This model, however, is intended for the creation of instruction for lessons instead of an entire curricula ("Selecting Design Models," 2005).

Once the information has been gathered through the ADDIE elements and the instructional design model is determined, this can be applied to effectively create an interactive web site for adult learners. "Thinking about web site design usually is limited to the 'look and feel' of the site-not necessarily how the words or the content is organized on the pages" ("Online," 2004). Maloney and Bracke (2004) explain that the conceptual and physical-design elements must be considered together and balanced in order to produce a web site that supports the user's goals and objectives.

Although this is true, what also must be kept in mind is adult learners with limited reading and concept acquisition skills will have difficulty with a web site that is organized in a complex, busy, and multi-level fashion. As Teague (2004) states, "some of the most informative websites are those that are simple in design" (p. 12).

When organizing a simplistic interactive web site for adult learners, "The key is to organize your information before even one line of code is ever written to develop the site" ("Online," 2004, p. 46). This means the content will be purposefully organized in a meaningful way for the intended users.

Another consideration vital to an effective site is how users will move through or navigate the site. As MacGregor and Lou (2004/2005) describe, "a major issue related to student use of hypermedia oriented web sites is their ability to navigate through the site, finding the information needed to solve problems and complete tasks" (p. 161). Typically, the navigation controls are a series of icons, buttons, and links allowing easy access to specific content, information, and resources (Piskurich, 2000). Throughout the navigation process, users must be able to get back where they began without hitting a dead end and having to start over. The navigation should scaffold easily from one level or activity to another and back or the student will become frustrated, thereby causing them to not use the site and hinder their learning.

This scaffolding process should also be applied to the overall interface design of the web site as it "helps

to stimulate recall of prior learning and aids retention and transfer of learning" (Deubel, 2003, p. 73). Through this process, adult learners will be engaged and become more proficient at making connections between background knowledge and new information. Constructivists describe it as a way learners encourage themselves to internalize and reshape or transform information through active consideration (Brooks & Brooks, as cited in Liaw, 2004).

Summary

The literature essential to the design and creation of an effective interactive web site that will enhance reading and concept acquisition skills for adult learners was researched and presented. There were three areas of focus that the literature addressed. First, the challenges adult learners face with respect to their reading and concept acquisition skills. These included the number of adults who have not attended any type of schooling for many years, and addressing their limited skills level.

Next were the effective strategies relevant to assisting adult learners with improving their low reading and concept acquisition skills. One of the key factors noted was the materials and resources that had been used

were not engaging or motivating for this student population. These students are easily overwhelmed, lack confidence in their ability to learn, and their low skill level further hinders their progress. By creating activities that are self-paced, build on each other, and give immediate feedback students are encouraged to take ownership of their learning. One strategy that could accomplish this, according to Reigeluth (1996, 1998), is focusing the instructional theory on customized learning that fosters thinking skills, initiative, empowerment, and responsibility (as cited in Hakkinen, 2002). Duffy and Bednar (1991) describe it as, "the goal of instruction is no longer primarily to impart new knowledge in a readily accessible form but to facilitate the student's own attempts to construct meaning" (as cited in Hakkinen, 2002, p. 463).

It is believed by Francis and Simpson (2003) that engaging adult learners in a variety of meaningful oral expression activities is an effective strategy that focuses on improving vocabulary knowledge. "Teachers need to discuss the targeted words with their students, emphasizing the definitions; characteristics (connotations, nuances, interesting origins); synonyms;

and antonyms" (p. 71), followed by written or computer activities.

Finally, the instructional and web design elements were explored. Along with the information gathered through the application of the ADDIE elements, various instructional design models were examined to determine the appropriate model to be used as it pertains to the designer's intended instructional intervention. This would guide the process for the creation and eventual implementation of an effective interactive web site, which will enhance a student's ability to move from basic decoding to reading fluency and improve student learning outcomes.

CHAPTER THREE

METHODOLOGY

Introduction

In order to create a learning environment that addresses the low reading and concept acquisition skills of adult learners, it is essential that their learning needs and goals be assessed to develop and implement a delivery system to meet them. This can be accomplished through an effective instructional design process that includes a design model, which will allow learning and instruction principles to be incorporated into instructional materials and strategies for adult learners.

The process begins with an appropriate instructional design model that will align with the target audience, adult learners, and assure the problems and challenges facing these students are addressed and resolved for learning success. There are many instructional design models that can be applied as part of the overall design process for assessing, developing, and implementing learning strategies. The Hannafin and Peck design model would be ideal for this particular student population of adult learners. What makes this an effective model for use with adult learners is the evaluation and revision

process that is iterative throughout all three phases. Adult learners need consistency, feedback, and reassurance during their learning progress, which this model provides.

The purpose of this project is to design and create an interactive website that allows Basic Skills students who are enrolled in the English 10A Beginning Word Knowledge and Reading Skills class access to information, computer exercises, and a program template. The design process includes the ADDIE elements of analysis, design, development, implementation, and evaluation. After using the website, students will have a better comprehension of concepts enabling them to pass their tests.

Analysis

During the analysis phase, which "will tell you what needs to be taught" (Piskurich, 2000, p. 43), students were observed and interviewed to better understand their needs (See Appendix C). These students are adult learners with minimal experience in the use of computers and Internet research. They have low reading and concept acquisition skills and their assessment test scores placed them at the basic skills level in English reading comprehension. When students test at this basic level, they must complete the Basic Skills classes in order to

meet the minimum requirements to enroll in college level English. Following are the primary questions asked during the analysis phase:

- Who is to be taught?
- What is to be taught?
- How will learning (success) be measured?
- How will the material be taught?

Through the observation and interview process, it became clear that the adult learners needed additional resources to assist their reading and concept acquisition skills. The analysis also revealed the materials and activities in the current curriculum are minimal with no sentence writing exercises available, though it is required on the test to show acquired learning. The information gathered was shared with the course instructor and it was determined that the necessary resources needed to engage students while being easy to use, be content specific, scaffold information, and give immediate feedback.

Design

As this project is an interactive website, it would be helpful for students to have basic computer skills, however, they will receive any and all types of

instruction necessary to help them access the website and navigate throughout. The instruction will be given on an individual basis or in small groups depending on the situation.

Content Structure

An outline of the content structure was created first to organize the web site and ensure consistency (See Appendix D). From this outline a flowchart was created to better visualize the web site's structure using Inspiration software (See Figure 1). This organizational structure allowed focus to stay on keeping the site small, simple, and easy to navigate while still containing all the necessary information and links. McCracken and Wolfe (2004) describe this as a *global navigation system* in which a navigation bar appears on each page, and from the home page with one click secondary, or second-level pages, are easily accessible (pg. 106).

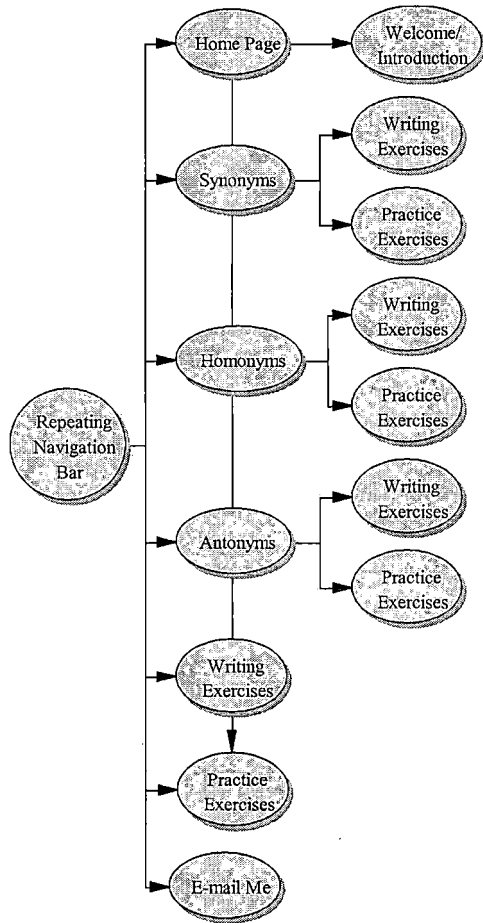


Figure 1. Flowchart Created in Inspiration

The design scheme used was task oriented. The tasks involve students completing practice exercises accurately, receiving immediate feedback of results, and repeating the exercises if they did not pass. Once they pass, they apply the learning by typing sentences in a program template.

This website is audience specific to students enrolled in the Basic Skills English 10A Beginning Word Knowledge and Reading Skills class. After students use this website over the course of a year, past test scores will be compared to current test scores in order to evaluate the effectiveness of the site.

The site follows the visual organization of consistency. As explained by McCracken and Wolfe (2004), "Consistency here means a high degree of uniformity in layout within a page and uniformity in layout across pages" (p. 90). In order to have uniformity within and across pages, a page template was created with background colors and text fonts that are either default or options that all Internet browsers can identify. This made creating individual pages not only consistent, but also easy and time saving. A navigation frame was created on the left side of the Home page that repeats on every page. This will make navigation easy, eliminate hitting dead ends and starting over, and allow students the flexibility of clicking on the different links to work on any of the resources available. There are navigation buttons on the bottom of each page to give students immediate access to the exercise pages to further promote a more user-friendly environment.

Development

The prototype for this project was created over a period of three months using Macromedia Dreamweaver MX 2004 software. This software was chosen specifically for its ease of use and functionality. Also, the flexibility of the software allows for adaptation of other basic skills classes in which students need additional resources to assist them in their learning.

Once the 36 Basic Skills lab computers have an Internet connection, students will access the different concepts and complete the interactive activities. Also, they will be able to print materials as well as the sentences they write for feedback and further study.

Implementation

The website will not be tested with the intended audience of adult learners enrolled in the Basic Skills English 10A Beginning Word Knowledge and Reading Skills class until Spring 2006. However, the web site has been field tested by colleagues who are familiar with the overall basic skills program, this particular basic skills class, and the student population.

The participants were asked to test the website in the lab as if they were the actual students. They agreed,

and a time was scheduled for each. At that time, the purpose of the website was explained as being twofold. One, to assist students with concept acquisition as they were not passing their tests for the English 10A Beginning Word Knowledge and Reading Skills class; and two, to determine the usability and functionality of the website itself. Participants understood they would be observed and asked questions during the test. The following questions were asked:

1. Was the website easy to understand and use?
2. Were the fonts legible and did the overall use of colors enhance or detract from the website?
3. Was the navigation user-friendly?
4. Did the concept pages for *Synonyms*, *Homonyms*, and *Antonyms* give clear definitions, instructions, and examples?
5. Was the *Writing Exercises* template understandable and easy to use?
6. Did all the links function properly?
7. Once you accessed the Internet links, were they easy to understand and use?
8. Did the website assist in subject matter acquisition and increase knowledge of concepts?

9. Could this website be used by students with basic as well as advanced skills in the use of technology?
10. Do you feel this website will help enable students to pass their tests on *Synonyms*, *Homonyms*, and *Antonyms*?

Evaluation

Based on the feedback from the participants, all agreed the website was simplistic yet effective, easy to use, could be used by students with basic to advanced skills in technology, and would assist adult learners with improving their reading and concept acquisition skills. Suggestions for revisions focused on the *Writing Exercises* page and template for two of the participants. They stated that the instructions for accessing the template caused some confusion, and explained the problems they each encountered while working in the template. Suggestions for improvement were given. One participant stated that although she understood the instructions on the concept pages, they were not detailed enough so she found herself making assumptions that a basic level student may not be able to make. The student/tutor participant felt that the use of games was a good idea

because students could have fun while they learned. She also said the links were not difficult to use.

Once the participants had completed testing the website and gave feedback, the suggested revisions and improvements were made. It was at this time that the instructor for the class tested the website. He believed the interactive web site would effectively assist his students with reading and concept acquisition. He especially liked the *Writing Exercises* template because it not only allows students the opportunity to apply what they learned, but its format is similar to the test he created as well. As a last note, he especially liked the left navigation bar repeating on every page, and a link to either the *Practice Exercises* or the *Writing Exercises* on each page of the website. He felt this gave the students a great deal of flexibility.

When the web site is implemented, adult learners will be observed and interviewed to ascertain whether or not it is meeting their needs and if it is user-friendly. As this is an iterative project, revisions and improvements will be made according to student feedback.

Summary

The purpose of this interactive web site is to allow Basic Skills students who are enrolled in the English 10A Beginning Word Knowledge and Reading Skills class access to resources containing information, computer exercises, and a program template, which cover the concepts Synonyms, Homonyms, and Antonyms. A user-centered approach that included analysis, design, development, implementation, and evaluation was applied. Several instructional design models were examined to determine the appropriate model to be used as it pertained to the instructional intervention. The Hannafin and Peck design model was appropriate for this project based on its simplistic application and the evaluation and revision process that was ongoing throughout all three phases. Based on research and user feedback, the web site was revised and improved in order to effectively assist adult learners in improving their reading and concept acquisition skills.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Introduction

Adult learners who are enrolled in the English 10A Beginning Word Knowledge and Reading Skills class struggle with reading and concept acquisition. This, along with the lack of resources, continues to influence the high number of students who fail the first test and are discouraged from continuing the course. This project was designed to assist adult learners with reading and concept acquisition in Basic Skills reading through the use of an effective interactive web site. The planning, designing, and developing of the web site was achieved using an instructional design process that applied the ADDIE elements to a specific design model. Through this process, adult learners were assessed to determine their needs, goals, and the factors that can directly assist or hinder their learning.

The information gathered was used at every phase of the instructional design process in order to create an effective, engaging, and motivating resource to meet the needs of adult learners. After using the web site, students will be able to improve their reading and concept

acquisition skills, pass their first test, and meet the prerequisites for enrolling in college level English.

Conclusions

This project was a challenging experience. One of the major challenges was the assumptions that were brought to the project relating to students and the creation of the web site. As far as the students were concerned, it was assumed that they were not unique, their learning styles were similar to that of other students, and their needs and goals were general and could be easily met. These assumptions caused the end users, adult learners, to be somewhat overlooked, and placed the focus more on the content of the web site. Unfortunately, this developed into a process of trying to match the end users to the content selected. A user-centered process was then applied which begins with a needs assessment of adult learners. This would not only allow the content to meet the needs of the students, but also enable the creation of the web site to focus on the adult learner's "capabilities so that instruction is appropriate and meaningful" (Deubel, 2003).

The assumptions surrounding the creation of the web site were simple in nature but led to the design of a web

site that would be too complex for this student population. This problem was soon alleviated by examining the many instructional design models available, and determining which would be the most appropriate for the intended instructional intervention. Based on the needs assessment, the Hannafin and Peck instructional design model was chosen. This was due to the fact that the evaluation and revision segments were iterative throughout all three phases of the design process. These segments are vital components as they give continuous encouragement, feedback, and support to adult learners thereby engaging, motivating, and enabling them to gain self-confidence.

It was concluded that by applying an instructional design process valuable time is not wasted. Instead, the end users are accurately assessed, their needs and goals are defined, and the determined content will be specific to this unique student population of adult learners.

Recommendations

The design of this project was determined by the amount of information gathered as it related to the adult learners. This was achieved through the evaluation and application of an instructional design process that was

appropriate for the eventual implementation of the interactive web site.

The process began with a needs assessment of adult learners, but only after assumptions were no longer factored in. Every facet of creating an interactive web site must revolve around the knowledge and factual information about the end users and not assumptions. McCracken and Wolfe (2004) explain, "A website can offer the latest technology and include exciting interactivity and multimedia, but without consideration of the audience of users, the site is doomed to fail" (p. 10). By doing so, the needs and goals of adult learners will be addressed and the selected content of the web site will support the intended learning outcomes.

The abilities of the adult learners will also be ascertained through the assessment process. This is an essential component of the overall design process to insure the web site's use and guide its functionality. Although it is not conceivable that a web site can be created that will address the abilities of every end user, by applying a user-centered design process an effective and viable web site can be created that will give users access to the resources necessary to meet their goals and acquire the desired learning.

Summary

At the heart of any instructional intervention is the target audience. In this case, the target audience is adult learners who have been placed, through Assessment testing, in the Basic Skills 10A Beginning Word Knowledge and Reading Skills class. These students not only struggle with reading and concept acquisition, but must overcome other challenges in order to have a positive learning experience as well.

It is clear that these challenges must be taken into consideration as part of the instructional design process, but the key elements are the needs, goals, and abilities of the end user. Based on the culmination of these elements, additional challenges adult learners face, and the application of an appropriate instructional design model the ultimate goal of an effective interactive web site to assist adult learners with reading and concept acquisition will be achieved.

APPENDIX A
CD OF PROJECT

APPENDIX B
ASSESSMENT TEST SCORE

Victor Valley Community College
18422 Bear Valley Rd
Victorville, CA 92392
January 4, 2005

Name: [REDACTED]
ID: [REDACTED] Birthdate: [REDACTED]

Major: Theatre Arts

Test Results:	Test Date	Test Name	Score	Percentile
	01/04/2005	CPT: Reading Comp.	27	0
	01/04/2005	CPT: Sentence Skills	55	17
	01/04/2005	CPT: Arithmetic	20	1

Test Results:	Test Date	Test Name	Correct #	%	Attempt #	%	Accuracy
	01/04/2005	Reading Adjusted Scr	29				
	01/04/2005	Writing Adjusted Scr	84				
	01/04/2005	Arithmetic Adj Scr	22				

Course Placements:

MATH: BSKL 12A Basic Math Skills (Must attend Basic Skills Orientation)
READING: BSKL 10A Basic Reading Skills (Must attend Basic Skills Orientation)
WRITING: BSKL 10B Basic Writing Skills (Must attend Basic Skills Orientation)

[REDACTED]

APPENDIX C
ANALYSIS OUTLINE

- Who is to be taught?
 - ❖ Students in Basic Skills English 10A Reading
 - What are your current resources for learning these concepts?
 - Packet with explanation and definition of concepts
 - Computer program exercises
 - In what way would you like to receive extra help to learn?
 - Access to on-line materials, computer exercises, and an available sentence writing tool
 - How much prior knowledge do you have of these concepts?
 - Little to none
 - Assessment test scores placed students at the basic skill level in English reading comprehension
 - What do students fear or what inhibitions do students have when it comes to learning these concepts?
 - Inability to learn the required material and pass tests due to lack of resources

- What is to be taught?
 - What resources do you wish to access when further information is needed?
 - Computer exercises
 - Program where practice sentences can be written
 - Do you have access to technology and software?
 - Computers
 - Internet
 - Microsoft Word

- How will learning (success) be measured?
 - What is your goal in this program?
 - Students will be able to access a technology based system that has been

designed and organized in a useful manner and meaningful way to deliver concept information, computer exercises, and program template covering synonyms, homonyms, and antonyms.

- Would students take the time to respond to a three question electronic survey after having accessed and used the electronic delivery system?
- List the different problems you encountered in accessing the information.
- After having used this system would students be better able to pass their tests?
 - Previous semester's test scores would be compared to current semester test scores after using the electronic delivery system.

- How will the material be taught?
 - What kind of resources do students have to access information about synonyms, homonyms, and antonyms?
 - Computers in an open-lab
 - Internet access
 - What is your goal as it pertains to these concepts?
 - Better comprehension
 - Increased knowledge enabling students to pass concept knowledge tests
 - What type of delivery method/s will be used?
 - Hands-on in Basic Skills lab
 - Staff assistance

APPENDIX D
CONTENT STRUCTURE OUTLINE

Repeating navigation bar on left

- i) Home page
 - (1) Welcome/Introduction
- ii) Synonyms page
 - (1) Definition of concept
 - (2) Example words and sentences of concept
 - (3) Link to Writing Exercises page
 - (4) Link to Practice Exercises page
- iii) Homonyms page
 - (1) Definition of concept
 - (2) Example words and sentences of concept
 - (3) Link to Writing Exercises page
 - (4) Link to Practice Exercises page
- iv) Antonyms page
 - (1) Definition of concept
 - (2) Example words and sentences of concept
 - (3) Link to Writing Exercises page
 - (4) Link to Practice Exercises page
- v) Writing Exercises Page
 - (1) Link to template created in Word
 - (2) Section for student's to type concept definitions

Section for student's to type sentences using concepts correctly

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