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THE SPANISH ASSISTANT

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
James Randolph Campbell

June 2006


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ABSTRACT

The Spanish Assistant is an electronic resource created with Macromedia Flash, Dreamweaver and Hot Potatoes 6, to help students in their quest to learn Spanish faster and easier. This project includes a discussion of the processes used to analyze, develop, design, implement and evaluate the electronic resource. The results of a survey demonstrating the effectiveness of the resource, as well as mean test results for the control group and the experimental group are included.

ACKNOWLEDGMENTS

I would like to express my appreciation to my dear wife for her loving words of encouragement and her patience when it seemed I would never finish. Her strength helped me carry through.

I also express my sincere gratitude to Dr. Randall Wright for his comments and patience in guiding me through this lengthy process.

DEDICATION

To my wonderful children, Kristin, Peter, Stuart,
Clair and Amy. They are the delight of my life.

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CHAPTER ONE

BACKGROUND

Introduction

One of the greatest problems foreign language teachers face is an inability to expose the students to a sufficient amount of real, native language used in daily life by native speakers. However, the advent of the computer has provided the foreign language teacher with scores of opportunities for their students to hear the target language in a real context. Historically, only the computer programmer has had the patience and expertise for creating such programs. Additionally, without the assistance of an experienced foreign language teacher, the program probably would not meet the needs of the foreign language student. Today, there are many resources the teacher can use to create these programs that have a user friendly interface, eliminating the need for teachers to learn difficult code, making it possible for the teacher to create the learning programs.

According to a paper by Becker (2001), teachers commonly use computers to achieve "three types of objectives: information-gathering objectives ... constructivist objectives...and skills-related objectives"

(p. 8). The teacher's philosophy of education is important when determining the specific learning goals for student computer use. Becker (2001) again argued that teachers with a constructivist view of education used computers more frequently, as well as in more challenging ways (p. 11). Computers have become commonplace in the life of most people in the United States. This marvelous access to computer technology provides wondrous opportunities for foreign language learning. We can use the internet as well as other web-based and cd-rom programs to bring foreign cultures, languages and practices into our very home. A constructivist would marvel at the opportunity to create meaning, and consequently, true learning.

Many language learning theories suggest that for a person to be fluent in any language, that person must have a base vocabulary of approximately 2000 words. The goal for a foreign language teacher, then, is to expose the students to as many high frequency words as possible, in a comprehensible context, without overwhelming them. One Spanish teacher, John Underwood (1988), designed a HyperCard program that enabled the students to navigate through a web-based program as they learned Spanish. The students were able to choose from three different

for the average teacher to create programs that will enable the student to learn at their own level and pace.

Even with the new technology available, foreign language instruction has not implemented the technology in ways that reach beyond the average memorize and repeat method. Perhaps because languages lend themselves nicely to this method of instruction, new approaches have not been studied. Many teachers do not use the computer to its full potential out of fear of technology. There is a lot that teachers are required to do in their busy day, and many come home physically exhausted, desiring only to take a break from their rigorous routine. There is, however, a great need for software that will allow students to use their multiple intelligences to construct their own meaning. Today's teenagers use computers on a daily basis as sources of entertainment, as well as tools to accomplish many learning related tasks.

Statement of the Problem

The basis for my project comes from my personal experiences as a Spanish teacher in a high school setting.

The most difficult obstacle any foreign language learner faces is the strenuous task of memorizing a massive amount of vocabulary words in a relatively short time. Watching

my own children as they learned to speak has shown me that it takes time to achieve fluency. Technology can assist the learner in this most arduous task of language acquisition.

Purpose of the Project

Due to the lack of developed programs designed to help students learn Spanish, I developed a supplementary compact disk that will help students learn Spanish more quickly. The supplemental activities found on the project include flashcards that provide the student an opportunity to review the vocabulary items. Also, there are stories that were created that use all the vocabulary items in a unique, interesting story. Other programs allow the student to demonstrate mastery of the vocabulary as well as the grammatical structures taught in the classroom.

Significance of the Project

The project was significant because it provided another resource students could utilize as they studied Spanish. It gave students another opportunity to create meaning as they manipulated the language on the computer.

For example, in one of the activities they were asked to draw pictures of the story they read. This provided a way for the students to express their own comprehension in a

way that was meaningful to them. This project would also be useful for other teachers that are looking for additional ways to provide students with comprehensible input, and an opportunity to manipulate the language.

Limitations

A number of limitations were noticed while developing this project. These limitations are as follows;

1. The author's drawings lack the flare of professional artists.
2. Some students and users may not have access to computers with the appropriate plug-ins and product updates to be able to view the program.
3. This compact disk does not teach all the grammatical structures of the language.
4. Because the focus of this project is an assistant for students, it requires the teacher to present many of the vocabulary words in class. Only the essential vocabulary items pertaining to the story are there for study.
5. The flash cards cannot be shuffled or deleted from the list.

6. Some students may not be able to hear the audio tracks because their computers do not have speakers.
7. The Hot Potatoes program does not allow for a lot of student-created work. The designer has to input all the possible correct answers; therefore the author has to guess what the students will say, and how they will say it.

Definition of Terms

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

- | | |
|-------------------------|--|
| 1. TPR | Total Physical Response |
| 2. HyperCard | A program created by Apple Macintosh. |
| 3. ADDIE | ADDIE is an instructional design process which stands for analysis, development, design, implementation, and evaluation. |
| 4. Formative evaluation | Testing done during the development process to help ensure the creation of a reliable product. |

5. Summative evaluation Testing performed at the end of the development process, after distribution, to determine the usefulness of the product.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

The literature review is broken into three sections that pertain directly to the Spanish Assistant project. These sections are Student Centered Learning; Vocabulary Acquisition; and Web Site Design.

Student Centered Learning

When teachers undertake to remove the responsibility for learning from the students and place that responsibility on their shoulders, they are undermining their profession. If they do not give the students that accountability, the amount of learning that actually happens will be significantly lower than if students are allowed to create meaning and context for themselves. By requiring coverage of a large amount of material, teachers often achieve the short term goal, getting the students through their class, but fail in the long term, not enabling students to make the learning meaningful (Brooks & Brooks, 1999). In order for teaching and learning to be effective, teachers need to provide ways for students to be actively involved in the learning process, as well as grant them ownership. Frequently, the selected topics are

interesting to the students. However, the problems come when the recommended teaching methods are not important or interesting to the students (Brooks & Brooks, 1999).

It is vitally important that students be allowed to create meaning. The teachers' principle responsibility is to create an environment where students can accept responsibility for the learning process. Learning is an individual responsibility, only facilitated by the teacher (Brooks & Brooks, 1999). The question, therefore, is how to give students ownership, particularly when they have been trained through their entire career that rote memorization is enough effort.

From my own experience with my own children, the rewards of a behaviorist teaching method seem to be more readily understood by children entering school. Also, in the early school years, the teacher must be the all-knowing sage, and tell students what they need to know, and how to accomplish the learning tasks. However, there comes a point in a child's development where he or she must be given opportunities to learn, grow and mature in a more controlled setting such as the classroom. By denying the students the opportunity to explore, we are creating citizens that will neither know how to conduct themselves

in a civilized society, nor care that they are not functioning well.

Students are striving for independence. They seem to thrive in an abyss that seems un-navigable to most adults, just as most adults thrive in a society youth view as foreign and unfriendly. "The nature of humankind dictates against being acted upon. Almost from birth, children want to do things for themselves, as every parent knows" (Eldredge, 2001 p.94). Teachers that provide learning experiences in the form of problems to be solved are contributing to the students' success and desires for life-long learning. They are molding the student into an independent thinker that will ultimately become a productive member of society.

The teacher's role in this kind of problem-based classroom is to provide reasons for student ownership. "Relevance does not have to be preexisting for the student. Not all students arrive at the classroom door interested in learning...but most students can be helped to construct understandings of the importance...Relevance can emerge through teacher mediation" (Brooks & Brooks, 1999 p. 35). According to Hein (2005), motivation is an essential element in the learning process. Students are ultimately agents unto themselves, who determine whether

they will learn or whether they will rebel. The teacher can only provide encouragement and a view of the whole picture.

This constructivist approach to learning requires more preparation by the teacher than most other methods of teaching. When shifting the responsibility of learning to the student, Hein (2005) outlines some important principles that must be considered before a transfer can occur. To summarize his thoughts, learning is an active process, requiring sensory input and the construction of meaning. As people learn, they are developing systems to teach themselves to learn more efficiently; the task of constructing meaning happens in the mind; learning is influenced by the language used in the learning process; education is a social activity and is directly linked to our interactions with other human beings; it is contextual, based on an entire problem, not individualized, isolated facts; and finally, it takes time, coupled with prior knowledge, however minute it may appear (Section II, para. 2-9).

With these points in mind, we now move to problem selection in a constructivist classroom. First, we need to ensure that the problems are neither too simplistic nor too complex. Consideration of the various different

maturation levels is essential. What will work in one class, may not work in another. According to Papert, the most difficult part of a successful transfer to a constructivist system is finding appropriate tasks that will engage the learner "in the construction of something shareable" (As cited in Grob and Wolff, 1991).

Second, we need to take care not to analyze the problem for the students. "When posing problems for students to consider and study, its crucial to avoid isolating the variables *for* the students, to avoid giving them more information than they need or want, and to avoid simplifying the complexity of the problem too early" (Brooks & Brooks, 1999, p. 39). Oversimplification of the problem lowers student interest in the problem because it is viewed as something the teacher deems important to learn. This practice does not offer the students ownership. The skillful use of problem-based learning in the classroom will engage the students in a quest for greater understanding.

In addition to engaging students in the learning process, teachers have learned that they must create student ownership if learning is to be more than rote memorization of massive amounts of irrelevant data. The quest for thoughtful learning begins in the organization

of the classroom. Rüschoff and Ritter (2005) describe some interesting ideas about how learning should be considered.

- Learning must be regarded as an active and collaborative process of knowledge construction;
- Learning is to be regulated by the learners' expectations, goals, existing schemata and intentions;
- Learning is a process of socially negotiated construction of meaning;
- Learning is a process which must be supported by a rich learning environment rooted in real life and authentic situations. (p.224)

One of the great difficulties teachers face is competition in today's world with the computer, television, video games and a myriad of other products that offer instant gratification with their explosive graphics and awesome special effects. Unless teachers can succeed in catching the students' interest, they are doomed to feel failure. Learning has never been easy or instantaneous. How can teachers effectively capture the attention and imagination of the students they teach?

The answer is to generate student interest through the skilful use of "thoughtful questions [that] challenge students to look beyond the apparent to delve into issues deeply and broadly and to form their own understandings of events and phenomena" (Brooks & Brooks, 1999, p.110). According to Murat Hismanoglu (n.d.), "...all language learners use language learning strategies either consciously or unconsciously when processing new information and performing tasks in their language classroom" (Section 7, para. 1). This statement can be expanded to include all learners, in any classroom. When we learn, we all use strategies, whether we are aware of them or not. We draw comparisons with knowledge we already have and use previous knowledge as we struggle to comprehend and assimilate the new information. It is the nature of the questions posed that determines the intensity at which students search for answers (Brooks & Brooks, 1999).

Vocabulary Acquisition

One of the most difficult requirements when learning a foreign language is the mastery of a vocabulary with thousands of words and phrases. Without it, it is impossible to learn a foreign language because a good

vocabulary base is the foundation for successful language learning. This basis is necessary for the student to learn and use the grammatical rules of the language properly. However, using the proper grammatical rules is not the principle reason for learning a foreign language: We want to communicate with others, either professionally, or non-professionally. A strong vocabulary base provides the tools needed to communicate in a clear and understandable way with others.

When teaching a foreign language, teachers typically focus heavily on the grammatical structure. This leads the teacher and the learner to frustration rather than success. Students feel discouraged because they cannot speak the language. Teachers are frustrated because they are unable to help their students reach fluency. There are inherent problems when a teacher focuses on the grammatical structure of a language at the expense of a healthy vocabulary base. "Without vocabulary to put on top of the grammar system, the learners could actually say and write very little despite being able to manipulate complex grammatical structures in exercise drills" (Waring, 2004, Section 1, para. 7).

One of the intrinsic difficulties when teaching grammar rather than vocabulary is student and teacher

boredom. I have yet to find a student that is excited about the prospect of determining a part of speech, unless that student wants to be a language teacher. Teachers need to provide an interesting problem for students to solve or some other interest-catching, active method in order to engage learners in the learning process (Hein, 2005). Taking notes about the different parts of speech is neither interesting, nor engaging. "Therefore, language learning as well as learning in general should be described as an interactive, dynamic process..." (Rüschhoff & Ritter, 2001, Section 3, para. 4).

Another problem that occurs from focusing on the grammar structure of the language is that it gives the student false hope. "...it would be misleading to assume that a few hundred words of General Service vocabulary would be enough. That is because there are limits on what one can do with a certain vocabulary" (Waring, 2002, Section 1, para. 5). This focus on grammatical structure will not produce fluency, although it will produce a greater understanding of the nature of language, including the student's native language.

If concentrating on grammar does not produce fluency in a foreign language, what does? Krashen (1982) theorized that language learning stems from comprehensible

input (As cited in Stepp-Greany, 2003, Section 3, para. 2). My daughter, now seven, seems to verify his theory. I never sat my daughter down and forced grammatical structures on her. Rather, I spoke directly to her and to others around her. By listening to exactly what I was saying my daughter began to create a general vocabulary. After about two years of listening, she began to speak. Those two years were spent creating a vocabulary base she could draw from when speaking. Even though it was only one word at a time, her practice and continued listening developed and improved her language skills as well as her vocabulary base.

Monitor Theory focuses on the importance of comprehensible input. It even prescribes an initial silent period for students to listen to the language, without the stress of needing to produce (Stepp-Greany, 2003). This theory has led to the creation of a Total Physical Response (TPR) method for teaching foreign language. The TPR methodology is based on a natural approach, recommending that listening comprehension should be fully developed before requiring any oral participation (Asher, n.d.).

The basic problem with developing a broad vocabulary base faced by many students is the "forgetting curve"

(Waring, 2004, Section 4, para. 4). This curve is a rate at which we forget things we have learned. The only way to counteract this curve is to repeat the vocabulary numerous times until the word becomes a part of our long-term memory. Even then, we need to reuse the vocabulary in order to recall the term. Failure to recycle the vocabulary leads to a failure to remember.

Because all languages have words that are more frequent than others, one of the most effective ways to move vocabulary words from short-term to long-term memory is by hearing the language in a natural context. A major problem with talking to native speakers is that most of their language is not comprehensible input. To combat this problem, learners must first achieve a working vocabulary. Repetition is the key because the more frequently we hear the same word, the better our chances of understanding the word, its meaning in context and how to use it properly. Additionally, the more frequently we hear the word in context, the greater our chances of understanding native speakers. "We must have a specific plan that will frequently provide students with new interesting comprehensible input" (Ray, & Seely, 2001, p. 106). This comprehensible input seems to engage the student because the input is both understandable and interesting to them.

It consists of real meaning, rather than rote memorization of a few key phrases over and over again.

One of the ways that has been devised to learn the required vocabulary words is through the use of lists. However, there are some problems with lists. Although they permit the student to encounter the vocabulary item again and again, there is no real context. Healey (2000) says that context has an important role in both learning to use new vocabulary, as well as determining how the words are used in speaking and writing.

Additionally, Waring (2004) discusses some problems student face when using lists. First, each word in a list is learned in turn, without being able to change the order. This leads to the "order effect" (Section 1, para. 5). Second, we remember words best in the way they are learned. In a list, the context becomes the other words on the list. Finally we create our own context when we learn. We cannot create a context when using a list.

One option learners have for combating these problems is to create flashcards. Students can shuffle the cards, creating a different order. These cards could be used in drills with the vocabulary. However, flashcards still leave us without a context for learning vocabulary. This is similar to one of the problems with drills. Drills are

so limited that the learner cannot use any creativity of speech (Healey, 2000).

This is not to say that all drills are wrong, or that flashcards have no place in the classroom. To the contrary, if the teacher chooses words that properly fit into a context, the drills will have more success (Healey, 2000). The use of context is necessary to enable learners to remember the vocabulary word.

The computer can be a wonderful tool to aid in the acquisition of a foreign language. It "provides the capabilities for presenting authentic whole texts contextualized by images and other graphics, for trial and error attempts at learning...and for recycling of the material in a myriad of ways" (Stepp-Greany, 2003, Section 4, para. 5). Not only does the computer assist in foreign language acquisition, most students love to sit in front of the computer. Studies have shown that using multiple media to present the instruction creates multiple pathways in the memory. Studies have shown that "where the same content is offered in multiple media, it also builds multiple pathways in memory. More routes to the information make it easier to recall" (Healey, 2000, Section 4, para. 1). As teachers strive to compete with

today's fast paced, thrill-a-minute society, using the computer in the classroom will facilitate their success.

The Design Process

The ADDIE design process is an acronym used to describe the analysis, design, development, implementation and evaluation of instructional systems. This method is conveniently broken into five different stages that allow the designer to create a useful product that will meet the needs of the client.

The analysis phase is "the process of defining what is to be learned" (McGriff, 2000, p. 1). Designers assess the needs of the client; discuss any potential problems with creating the product and analyze tasks to be performed. Learner profile, description of constraints and a problem statement are some of the output that could be expected from this stage of the development process (McGriff, 2000). The benefit of the analysis phase cannot be overlooked. The ADDIE analysis phase provides a major component in assuring quality. It defines the client's needs and ways to measure success (Intulogy, n.d.).

The next step in the ADDIE design process is to design the product. In this phase, sample tasks include writing objectives, developing test items, planning

instruction and identifying resources (McGriff, 2000).

Here it is important to have a good idea of what the learners already know when they begin the course.

Additionally, navigational elements for moving through the product need to be considered here as well as the delivery format of the final product (Intulogy, n.d.).

Development is the most time consuming portion of the ADDIE process because it is "the process of authoring and producing materials" (McGriff, 2000, p. 1). This phase builds on the two previous phases to generate a product that will meet the needs of the client (McGriff, 2000).

"If the team has done solid work during the first two phases of the ADDIE methodology, then the development phase should precede smoothly and quickly" (Intulogy, n.d., p. 1 para. 3).

The next section is implementation. This is the time when the client actually sees the product. "The purpose of this phase is the effective and efficient delivery" of the product (McGriff, 2000, p. 2 para. 6). This phase has a lot of project management and logistical issues (Intulogy, n.d.).

The final phase is the evaluation phase. The purpose of this phase is to study the effectiveness of the product. The evaluation phase is generally divided into

two stages, formative evaluation and summative evaluation (McGriff, 2000). "Formative evaluation is ongoing during and between phases" (McGriff, 2000, p. 2 para. 8).

Formative evaluation helps improve the product before the final version. Summative evaluation generally happens after the product has been released. It assesses the overall usefulness of the product (McGriff, 2000).

Web Site Design

There are many factors to consider when designing an effective web site. I have chosen to focus on three of those factors, appearance, usability, and user satisfaction. The importance of the web site's appearance cannot be over emphasized. If a web site does not appeal to the user, it will not be visited. Furthermore, a site's usability, if it is poor, results in few initial visits, and even fewer return visits. However, if a site is easily understood, and logical in its format, this site will have many return visitors. Both of the aforementioned characteristics of good web site design contribute to the third component, user satisfaction.

When designing the web site, it is important to understand the expectations of the user. Even though the users may not consciously know that they have expectations

regarding the appearance, there have been thousands of precedents on thousands of web sites that they visited prior to visiting this site. Using familiar fonts is an important aspect of good web site design ("Library website design and database access," 2004). Familiarity is comforting as well as useful. A web site that is difficult to navigate due to a new, unknown appearance will not be very successful. Pearson and von Schaik (2003) reported that in a study they conducted, blue links were found considerably faster than red. There could be a number of reasons for this result. First, it could be postulated that because there are more blue receptors on the outside area of the eye, it is easier to pick up a blue link when scanning the screen. Or, it could be that due to the previous experience of the user, most links being blue, he or she looked expressly for a blue link and ignored the other colors.

Nielson (1999), when discussing the design of the internet, said that he would recommend a different link color if we were creating the internet from the beginning. However, because the web is already up and running, we are better off with the old standard link colors.

In addition to link color, there are other aspects of web site design to bear in mind during the analysis and

design phase. Well thought out and designed web sites all have something in common, good navigational tools that give the visitor a clear, quick and consistent process to move about within the site

(www.csus.edu/uccs/training/online/design/d_principles.htm). Some other considerations for the page layout include keeping lines and paragraphs short, using wider margins to make the site easier to read, a common look for all pages on the site and darker or brighter contrast for small areas.

The above listed items make a great list of things to do to make the web site user friendly. There are some things that should not be done when designing web sites. Some aspects make the user leave the site faster than others. For example, large graphics that take forever to download make the site unusable. Long pages without relevant graphics, or lots of white space, create confusion and send the user to other sites. A background that does not present a sharp enough contrast from the text causes the reader to work too hard to view the text, and he or she quickly leaves.

Web design contributes greatly to usability, and both create a positive user experience, leading to greater satisfaction. Seemingly simple design decisions, like

font size and style have a large impact on the users' experience (Becker & Berkemeyer, 2002).

Just as there are aspects in our jobs that create satisfaction, there are features in web design that create user satisfaction or dissatisfaction with the site. It is the goal of the web site designer to create visitor satisfaction. Some aspects, such as content, cannot be easily controlled. An insurance web site would not be successful if it only told sports scores. It is assumed that the user goes to the site to view the product that is being sold there. However, there are some organizational features that are controlled by the web site designer (Zhang et al., 1999). An effective use of design protocol, as well as logical layout will lead to a high level of user satisfaction, as well as return visits.

Summary

Language learning needs to make a more concerted effort to shift from the instructor led, drill and kill method to a student led, constructivist approach to learning. The students are capable of bearing the responsibility to learn, even though the transition will be difficult. Teachers will need to create more web-based products, and photocopy less, thus increasing the demand

on the teachers' time. However, the benefits greatly outweigh the work: satisfied teachers and excited students. The teachers' principle focus should be the creation of learning opportunities and guiding students as they discover on their own.

Computers provide an interesting medium for the accomplishment of this goal. Students are already interested in computers. This fact alone should be a convincing argument for the implementation of technology that will facilitate language learning. The computer provides opportunities to gather information from far away places that would not be accessible any other way.

Also, many software companies have created computer programs that are very user friendly. The need to learn and write thousands of lines of computer code is no longer necessary. Most computer programs have templates, or drag and drop methods where the code is automatically written. The time invested is well worth the dividends.

The computer can also facilitate vocabulary acquisition. Students can use the computer as they progress at their own speed. The computer makes it simple to create multiple versions of the same program and adapt those versions to the different learning levels. Also, contextualization is much easier with the availability of

pictures from the internet that match the vocabulary item
to be learned.

CHAPTER THREE

PROJECT DESIGN PROCESSES

Introduction

The following chapter discusses the process I used to create the Spanish Assistant program. It focuses on the ADDIE process, as well as difficulties I encountered and successes I experienced as I was creating this product.

Analysis

I sat there, lamenting the dire situation my class was facing. They were not showing signs of much progress in their quest to learn Spanish. I believed as did Waring (2004), that focusing on the grammatical structures did not create fluency. I discussed my perceptions with other members of the foreign language department, but was unable to discover a solution that I felt comfortable implementing in the classroom. It was all more of the same; more worksheets, drills and tests. Nothing seemed to be enough to catch their interest, nor did it catch mine. It was not until I discussed my frustrations with another teacher from a different discipline that a plan began to form in my mind. We discussed the possibility of creating a web site that would provide much needed

assistance for my students as they struggled to master Spanish. With this idea in mind, I began planning aspects of the web site.

I started by creating a focus group, mainly my department, but also other teachers, particularly English teachers and teachers of English as a foreign language. There were approximately seven people in the focus group. We discussed the needs of the average foreign language learner, as well as the advanced and low performing students. From those discussions I created a list of three important considerations I needed to keep in mind when creating this web site.

First I determined that the students needed more opportunity to hear and manipulate the language in an understandable, natural, friendly setting. The students needed a good vocabulary base before any grammar would make sense. Secondly, the students required more practice with the general vocabulary words than I was currently able to provide them with. They needed a resource they could access from home. Finally, I determined that the students could not be abandoned as they learned Spanish. The Spanish Assistant needed to be a resource students used as they attended class. They also accessed the site when they missed a day in class.

This resource focuses on the National Foreign Language standards. It specifically helps them understand Spanish, standard 1.1 (Appendix D), as well as understanding the nature of language as they study Spanish, standard 4.2 (Appendix D). Additionally, The Spanish Assistant helps the students make connections with other language, standard 3 (Appendix D). The use of a standards based program ensures that the students are all given an equal educational experience that can be measured against norms considered essential to student learning.

Design

Experience has shown me that I would have been much better off to create a complete design that would enable students to pass the required tests, and keep that design.

However, that is not what I did. Before the analysis was completed, I quickly moved through the design phase, and focused my efforts on the development of the Spanish Assistant.

The first time I created the web site, I spent many wasted hours creating a web site that did not meet the needs of the students. It did, however, meet my needs as a teacher. The web site was "cool-looking", but functionality and ease-of-use were missing. The web site

background was too bright, creating discomfort after about ten minutes of use, and created too much contrast. Due to this error on my part, I had to go back and start over.

When designing programs that deal with foreign language acquisition, it is important to consider two important learning factors. First, a sound understanding of multiple intelligences is necessary. By understanding clearly the impact of these intelligences, an Instructional Designer can cater key aspects of the program to the different intelligences and therefore create software that will assist learners in a multitude of different ways.

Additionally, one must consider the different learning styles. This will lead to a greater ability to meet the different needs of different students. With this understanding, an Instructional Designer will be able to create aspects in the software that will entice all learners. These two aspects will provide a sound foundation for the designer to use when creating software, thus producing software that has a real, achievable goal, as well as impact a greater number of learners.

Fortunately, I did not repeat the same mistake twice. I began the second time by doing a bit of research. I found articles that gave me focus as I determined the

specific activities and methods I would include in my project. I relied heavily on the formative evaluation of the project because it allowed me to continually revise the product as I created it. This formative evaluation process has proven very useful. I started with something that had a lot of problems, and I ended with something that I can use regularly. The basic idea behind the Rapid Prototype Design Model is that during the ADDIE process there is constant reflection and analyzing of the needs the users have, as well as the goals set for the development of the product. Finally I settled on a design that pleased me as well as my students. There are nine activities I created that will help the students interact with the language as they learn. These activities are discussed in the development section that follows.

Development

Of the nine different activities students can choose from in The Spanish Assistant, four were created using Macromedia Flash, four used Hot Potatoes 6 and one used Macromedia Dreamweaver. The first activity is a simple flashcard program.

The Spanish Assistant is broken down into ten chapters, with supporting activities and vocabulary items

for each chapter. Image 1 in appendix B shows a sample of the first activity students can use. This is an electronic version of simple flash cards. Sides A and B are shown in the image. There is a Spanish word on side A, with the corresponding picture on side B (Image 2, Appendix B). Below the flashcard itself are navigational buttons. These were added to improve user interaction, which helps decrease user boredom. They can hear the word pronounced for them, or navigate to the next card. Two facts made these flashcards different than the standard cards. First, there is an audio option, allowing the student to hear the word pronounced naturally. Second, the reverse side is a graphic illustration of the meaning of the word. This eliminates steps in the translation process because students have a ready image of the meaning. They do not have to translate from Spanish to English and then to a picture.

The next activity students can choose from is reading a story in Spanish (Image 3 Appendix B). This activity was created using Macromedia Dreamweaver, an html editor. This activity is a very simple activity where the students read the story. This story uses all the vocabulary words they reviewed from the flash cards discussed in the previous activity.

The third activity is an illustrated story as shown in image 4 (Appendix B). It is the same story they read to themselves in exercise two, but it is illustrated and narrated for them. The text is provided for those students without audio capabilities, and for them to follow along as the story is read to them.

The first three activities were focused on creating a base for the students to work from. They needed to review the vocabulary, read the story and become familiar with the context prior to attempting the other activities. The remaining six activities were all created to provide various exercises for the students to use as they reviewed and learned Spanish.

The fourth activity is another flash program where they draw the story as they remember it, including as many details as possible (Image 5, Appendix B). They are not able to color the drawing, unfortunately, but they have free use of the entire screen to represent their own version of the story. This provides some student ownership of the learning process. It gives them a problem they can solve through an active process. They are able to demonstrate their comprehension through their artistic abilities.

The next couple of exercises are: a simple true or false exercise, a fill in-the-blank activity and a short answer section. These exercises were created using the Hot Potatoes 6 program. The learning curve for the Hot Potatoes program was very shallow. The creators of the program wrote a very useful help section, with examples and images that guide the user very nicely.

The true or false exercise (Image 7, Appendix B) helps students determine their level of understanding and their ability to comprehend Spanish after reading and listening to the story. This activity focuses on overall understanding and mastery rather than grammatical rules. It also uses a natural language approach. All the questions are written in a natural way. The students can see the vocabulary items in a different context. Also, these are not formative quizzes. The students can practice until they feel mastery of the material. The program automatically shuffles the questions and answers whenever it is initiated.

The fill-in-the-blank activity builds (Image 8, Appendix B) on the true or false exercise by requiring a greater understanding of the vocabulary the story focuses on, as well as a greater understanding of the context.

Students need to use context clues to answer the questions.

The Short Answer activity (Image 9, Appendix B) is much more subjective than the true or false or the fill in the blank. This was a difficult activity to write due to its subjective nature. There is no translation portion of these exercises. I created these activities to focus students on comprehension in general, not word for word translation. These three activities vary greatly in difficulty from the very simple to the rather complex. In spite of the intricacy, it is another way to review the vocabulary in a new context. The students can, in a limited sense, create their own context as they answer the questions. These exercises provide a dynamic, interesting way for students to view the language. More opportunities to view the vocabulary in a natural context helps eliminate the forgetting curve mentioned by Waring (2004).

There is a hierarchical order for the various activities and their completion. It is important that students first become familiar with the vocabulary words before they read the story, or watch the video that uses the vocabulary in the story. These exercises are intended to increase in difficulty and interactivity as the student

progresses, culminating student ownership of the learning process.

The next activity for the students is called a free write (Image 6, Appendix B). After familiarizing themselves with the story, the students can then write the story in their own words. This is a powerful tool that fosters student ownership. Students need to actually understand what is happening in the story, and be able to write that down using the appropriate vocabulary, thus strengthening their vocabulary base. As Healey (2000) mentioned, carefully chosen words that fit into a real context will have more success. The students understand the context, and are required to produce language at their level.

The final exercise is changing perspectives from first person to second person, or from second person to first person plural, and so on (Image 10, Appendix B). This kind of language manipulation is the most difficult. I created this activity with the Hot Potatoes 6 program. It requires the student to understand some grammatical structures, but only after they have learned a sufficient amount of vocabulary. This exercise presents language in a complete textual context. The students are using whole language, structured with images, as they learn.

Implementation

Following the ADDIE design plan helped me, particularly in the implementation process. I began this project with the belief that I would use the resulting resource as a web site the students could access as they learned. However, as I tried this method of implementation, I found that it was lacking effectiveness. Some students would race ahead, finishing everything, and then come to class bored with what we were learning because they had already mastered the vocabulary. Others did not even look at the web site, although they were struggling more. This implementation method did not give me the structure I needed as a teacher.

Finally, after numerous trials and failures, I decided on an implementation method that met my needs. I made this decision after I gave the web site to a class of students. I was testing whether the web site was effective and discovered a delivery technique that worked for me and the class. I scheduled time for the class to use the computer lab and work with The Spanish Assistant. Initially the room was chaos. The students did not have enough direction and I did not have a proven method for using The Spanish Assistant. It was not until the third

day in the computer lab that I determined how I would use The Spanish Assistant.

I taught the vocabulary in class every other day, spending Tuesdays and Thursdays in the computer lab. I instructed the students what exercises and activities to complete in that day, requiring them to show their results to me before they could go on to other activities. Because the students could complete the activities as many times as they desired, I required a level of one hundred percent correct in order to proceed. The results were amazing. The students appeared eager to come to class, I even heard students remark that they were finally beginning to understand Spanish, and enjoy learning and using it.

After this experience with The Spanish Assistant, I decided that a web site would not suffice because there was a lack of structure that would not allow it to be used as a resource. I needed to publish The Spanish Assistant on a compact disc, and make it available as a classroom tool so that I could ensure that the resource was actually used and useful.

Evaluation

In agreement with the ADDIE method, the evaluation was a constant process that involved formative and summative phases. The formative evaluation process included feedback from the alpha testing group consisting of teachers that taught Spanish. This test group used the web site and tested it for functionality. They were looking for specific problems, such as missing or bad hyperlinks, pages that did not load properly, or any other operational problem. Their purpose was to focus on developing a better product.

Another portion of the formative evaluation process was completed by the students after using the prototype of the resource. The students completed a survey (Table 1, Appendix C) that focused on the users' perceptions about usefulness of the web site, as well as user satisfaction and their overall reaction to the web site.

While I observed the students use the resource, I heard some remark that they were beginning to understand Spanish, and that it was a pleasant experience to learn Spanish in this way. What was the difference? They were more engaged in the learning process, and actually gained ownership; it meant something to them, as evidenced by their responses to question number eight, I enjoyed using

the resource (appendix H). It was answered either strongly agree or agree by twenty-six of the thirty-one participants, while four were neutral and one disagreed (table 1, Appendix C). Question eleven (appendix H) makes a statement about the effect it had on their ability to learn vocabulary items. Twenty-seven of the thirty-one participants responded either strongly agree, or agree, while four were neutral. Finally, in response to statement one, my experience using The Spanish Assistant was pleasant, twenty-nine of the thirty-one participants responded either strongly agree or agree, whereas only two answered neutral (appendix H).

The purpose of the summative phase was to determine if the product was successful in its claim to assist students in their quest to learn Spanish. For this process, I administered a vocabulary test to two different classes, one being the control group and the other the experimental group. The tests were exactly the same for both classes. The quizzes consisted of Spanish words the students needed to translate to English. The experimental group's grand mean was 95% correct. The control group's grand mean was 79% correct. The experimental group scored significantly higher on the vocabulary quiz than the control group (Table 2, Appendix C).

Summary

The Spanish Assistant was to be used as a companion, in addition to regular classroom instruction. When it was used in this way, the students experienced more success in their language acquisition efforts. I was able to create a product that better met the needs of my students, while, according to the survey, providing them with a sense of satisfaction as they used the resource. It was important to create a hierarchy of levels for the student to navigate through. By designing steps that must be completed before moving on, the resource helped the students create a strong vocabulary base in a real, understandable and meaningful context. After strengthening the base, the students moved on to language manipulation activities. These activities did not introduce new vocabulary words, nor were they translatable to English. They were intended to improve comprehension and strengthen minimal grammatical structure. Finally, the top level of the hierarchy focused on both vocabulary as well as grammar structures, although grammar was significantly less important than vocabulary acquisition.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Introduction

While The Spanish Assistant appears to be very helpful for the learners, it could also prove useful for teachers, particularly beginning teachers that are struggling for ideas about how to improve student engagement in the learning process. Many of the teachers I showed this project to replied with an interest in using technology to enhance their abilities in the classroom. They also seemed to show interest in the possibility of using technology to encourage students to take ownership of the learning process.

I cannot stress enough the importance of the ADDIE process. It is essential for the success of any project. This process has been helpful in more areas than just the creation of this project. I have used this process in my professional life as I made lesson plans. I would sit down, analyze the needs of the students I was teaching, design instructional tasks to assist them in their efforts to learn Spanish, develop the lesson plan, implement it in the classroom and evaluate at the end of the class aspects of the plan that went well, as well as aspects that needed

to be improved. As a result of this process, I have become a better teacher. Unfortunately, I did not learn about this process until after I enrolled in a Masters program. It would be interesting to see what would happen if new teachers were given this knowledge to help them with their lesson plans and their teaching methods.

When I began this project, I was unfamiliar with the ADDIE process. As a result, I spent many frustrating hours designing a product that ultimately would not function as I hoped. It was not as useful for the students because they were not motivated enough to use the resource outside of the classroom. As I learned about the ADDIE process, I discovered what I had done wrong. I began anew with an analysis of the problem, rather than jumping immediately into the design phase. My next attempt was much smoother, and the resulting product was useful in the classroom.

Conclusions

The conclusions extracted from the project are as follows.

1. The Spanish Assistant was able to strengthen the students' vocabulary base. This was important

because in order to develop fluency in a foreign language there must be a strong vocabulary base.

2. Computers can be used effectively to teach foreign language learners. Computer assisted foreign language learning opens the door to thousands of opportunities for the student and the teacher. By simply accessing the internet, a teacher can provide students with a copious amount of real language for the students to use as they learn.
3. When students use technology enhanced programs in the learning process, they show more motivation. Standard 5 (appendix D) focuses on the community. A student that is excited and motivated to learn Spanish will have a greater desire to use Spanish beyond the classroom.

Recommendations

For the next version of The Spanish Assistant, I would include some of the following elements.

1. I would include a recording device so the students would be able to record their own voice as they practice pronunciation of the vocabulary.

2. The inclusion of links, to email results to the teacher, would be nice for the students as well as the teacher.
3. As much as possible, more professional-looking graphics, particularly for the illustrated story section, would help hold the students' attention.
4. Along with more professional graphics, the inclusion of better animation techniques would also hold the learners' interest.
5. Finally, the inclusion of a list of symbols pertaining to Spanish, such as accent marks, would be included to allow the learner to answer questions using proper grammar.

Summary

Although there are some areas of The Spanish Assistant that I would change in future versions, this product does provide ways to improve the learners' abilities to learn Spanish. It provides real, comprehensible language input at a level the students understand and are able to work with. The design process is essential for the successful creation of any instructional product. Students that are allowed to

create their own meaning as they learn show greater motivation. Perhaps the reason is that they see how learning is important to their lives.

APPENDIX A
CD OF PROJECT

APPENDIX B
SAMPLE IMAGES

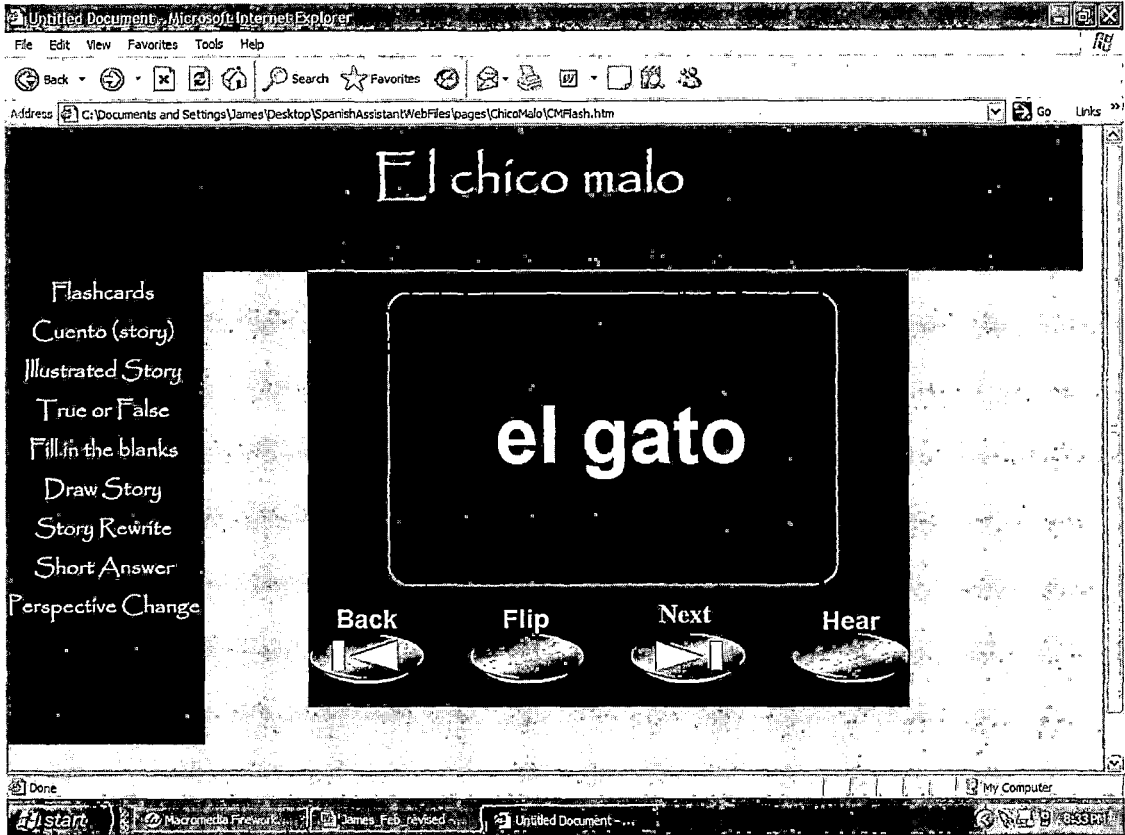


Image 1: Flashcard picture side A



Image 2: Flashcard picture side B

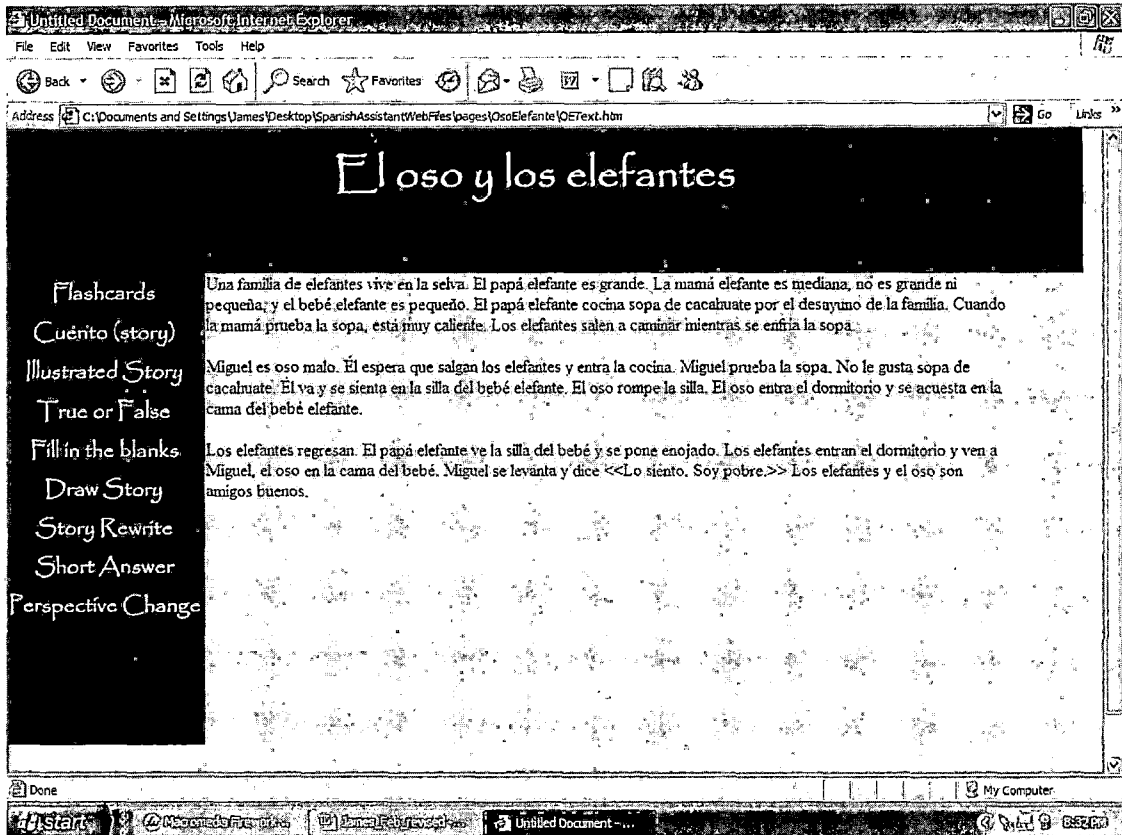


Image 3: Reading exercise



Image 4: Screenshot of illustrated story with text

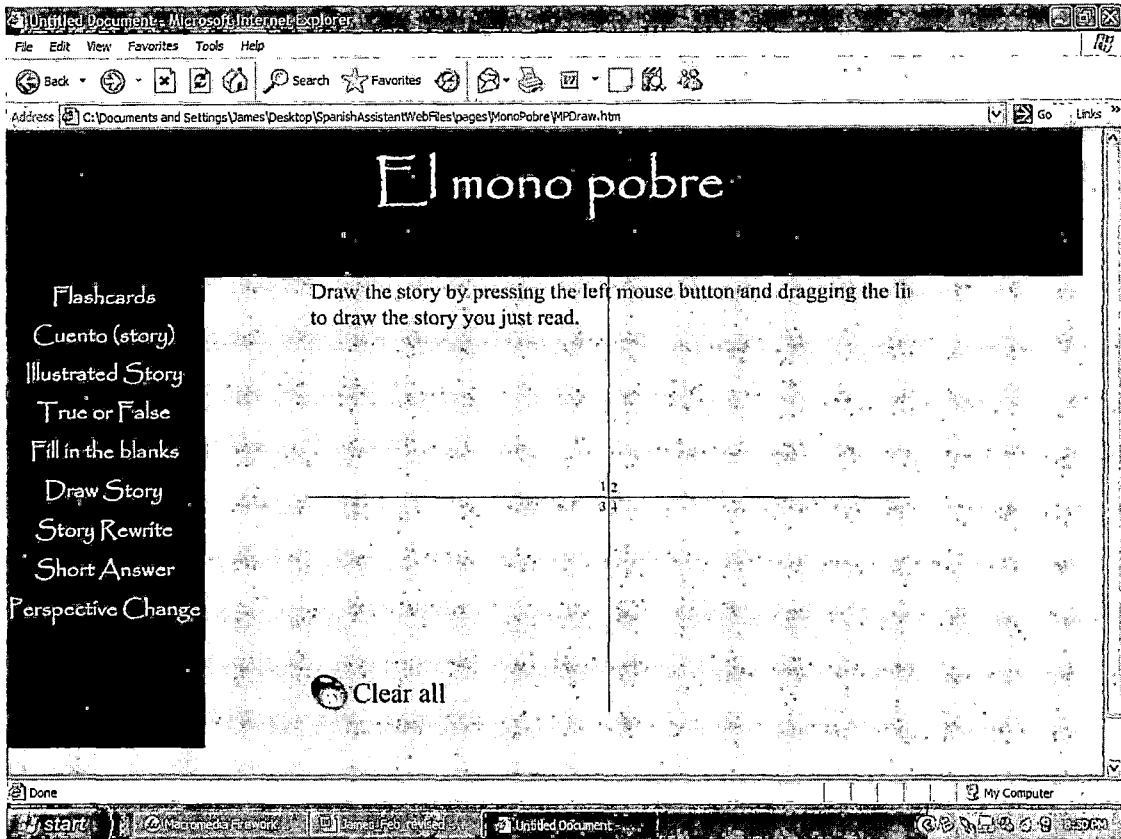


Image 5: Free draw activity

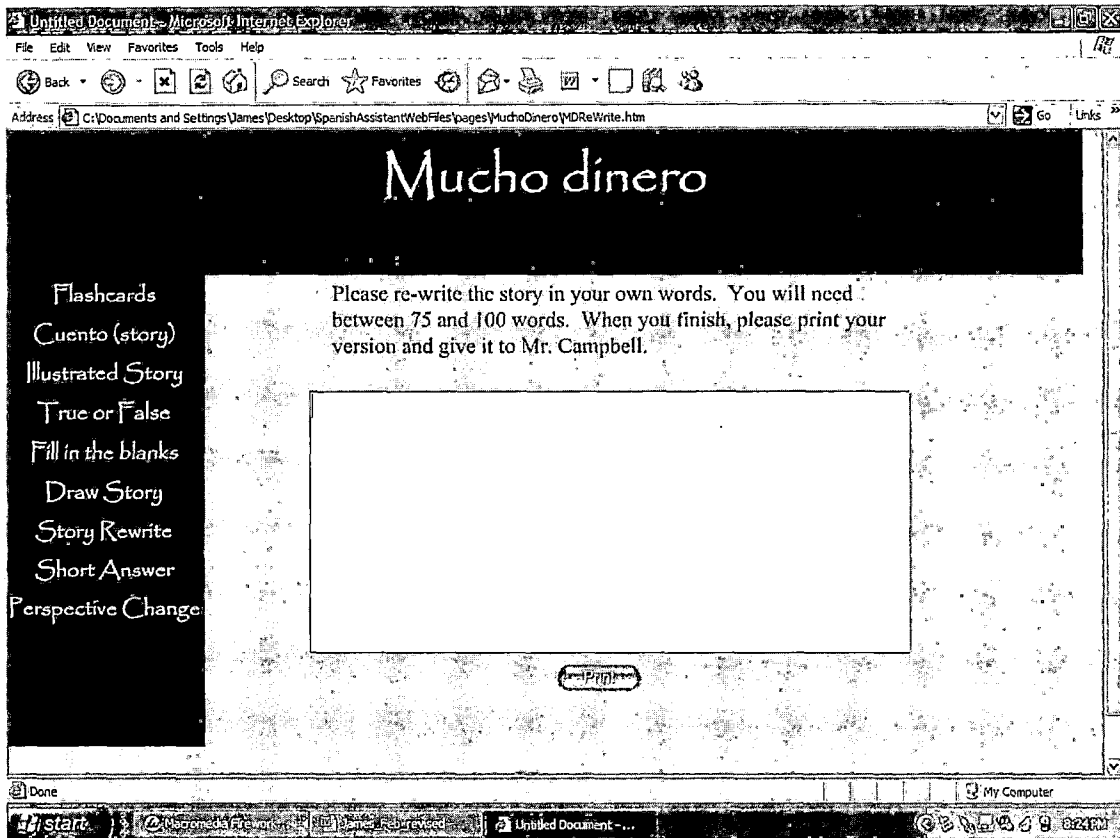


Image 6: Rewrite exercise

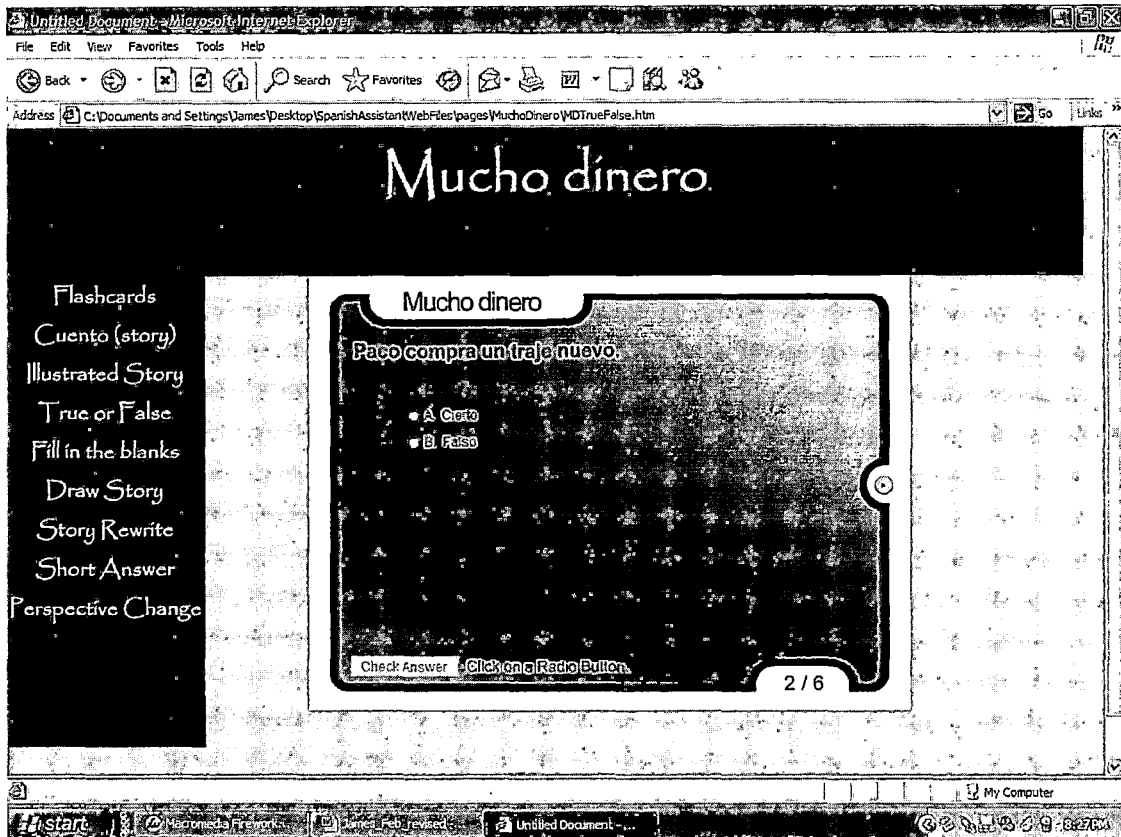


Image 7: True/false exercise

Mucho dinero - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Stop Refresh Home Search Favorites Print Mail Stop

Address C:\Documents and Settings\James\Desktop\SpanishAssistant\WebFiles\pages\MuchoDinero\WDFillBlank.htm Go Links

Mucho dinero

Gap-fill exercise

Fill in all the gaps, then press "Check" to check your answers. Use the "Hint" button to get a free letter if an answer is giving you trouble. Note that you will lose points if you ask for hints!

María es una pobre. Paco es muy pobre . Paco y María quieren ir al de Homecoming. María no mucho dinero, y no tiene un vestido para el baile. Paco un traje nuevo para el baile.

Un día, María y Paco por la . Ven un montón de en la calle. Paco el dinero. Hay trescientos (300) dólares. Los dos a la tienda de ropa. María está feliz y a la sección para chicas. Ella se una nueva. También ella se prueba una blusa y unos . Le da la ropa al .

Paco a la sección para chicos. El dependiente a Paco encontrar un nuevo. Los pantalones del traje son negros. Paco también una camisa blanca.

Paco y María miran la . Ellos le la cuenta al dependiente. Paco le el dinero al dependiente. Ellos la ropa nueva y van al baile. Ellos tienen un buen tiempo en el de Homecoming.

Done My Computer

Start Nacionmedia Firework... James_Feb_revisat... Mucho dinero - Micros...

Image 8: Fill in the blank exercise

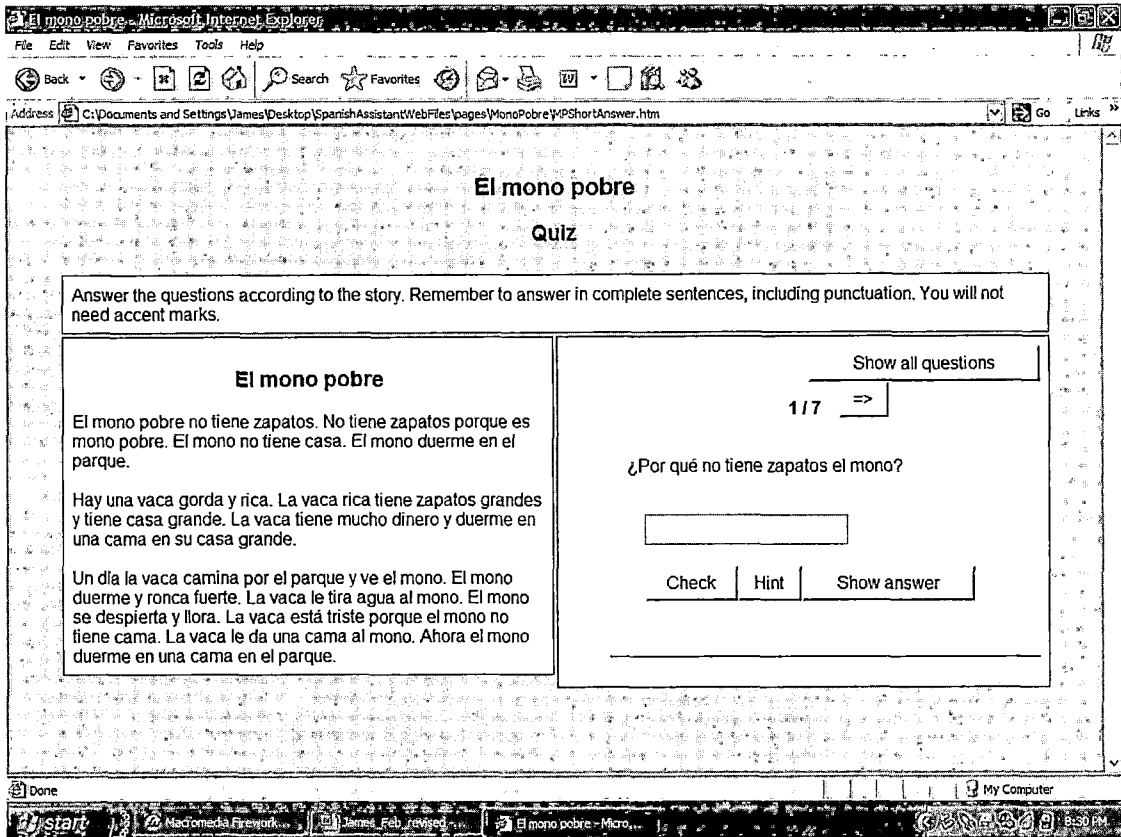


Image 9: Short answer exercise

La nave espacial - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Stop Search Favorites Home Print Mail

Address C:\Documents and Settings\James\Desktop\SpanishAssistant\WebFiles\pages\WaveEspacial\VEerspectiveChange.htm Go Links

La nave espacial

Gap-fill exercise

Read the story below, then change the story to first person plural (we) by choosing the correct word from the menu provided. Fill in all the gaps, then press "Check" to check your answers. Use the "Hint" button to get a free letter if an answer is giving you trouble. Note that you will lose points if you ask for hints!

La nave espacial

José tiene hambre. Él se sube al nave espacial y va a la luna. Cuando aterriza en la luna, José camina al restaurante. Él pide pan tostado y una hamburguesa con mostaza. La camarera le dice que no hay hamburguesa en el restaurante. José quiere una hamburguesa con mostaza. Él regresa a su cohete, despega y vuela a Saturno. José mira el menú. ¡Hay una hamburguesa con mostaza en el menú! José le gusta la comida de Saturno. Él pone el menú en su bolsillo y vuela a su casa. José regresa muchas veces al restaurante en Saturno y come muchas hamburguesas con mostaza.

_____ hambre. _____

_____ al nave espacial y _____ a la luna. Cuando _____ en la luna, _____ al restaurante. _____ pan tostado y una hamburguesa con mostaza. La camarera le dice que no hay hamburguesa en el restaurante. _____ una hamburguesa con mostaza. _____ a _____ cohete, _____ y _____ a Saturno. _____ el menú. ¡Hay una hamburguesa con mostaza en el menú! _____ gusta la comida de Saturno. _____ el menú en _____ bolsillo y _____ a _____ casa. _____

Done My Computer

start Macromedia Firework... James_Feb_revised... La nave espacial - Mic... 8:23 PM

Image 10: Perspective change exercise

APPENDIX C

TABLES

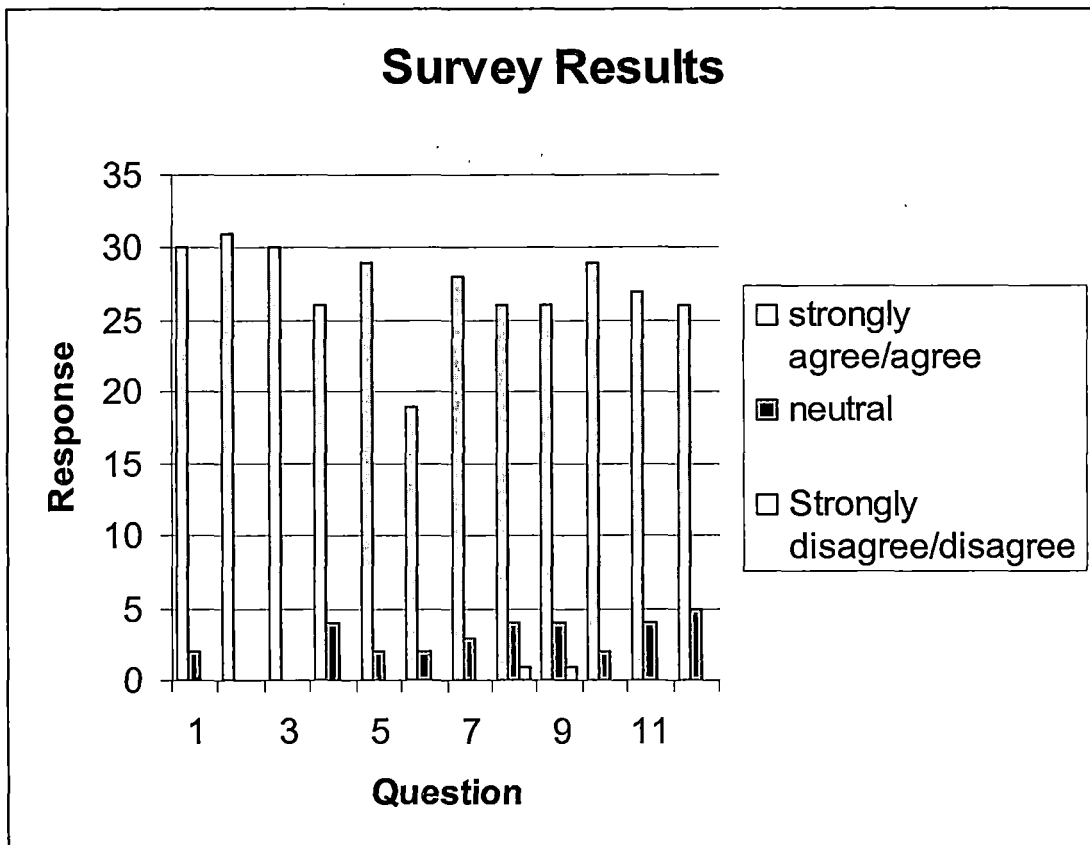


Table 1: Survey Results

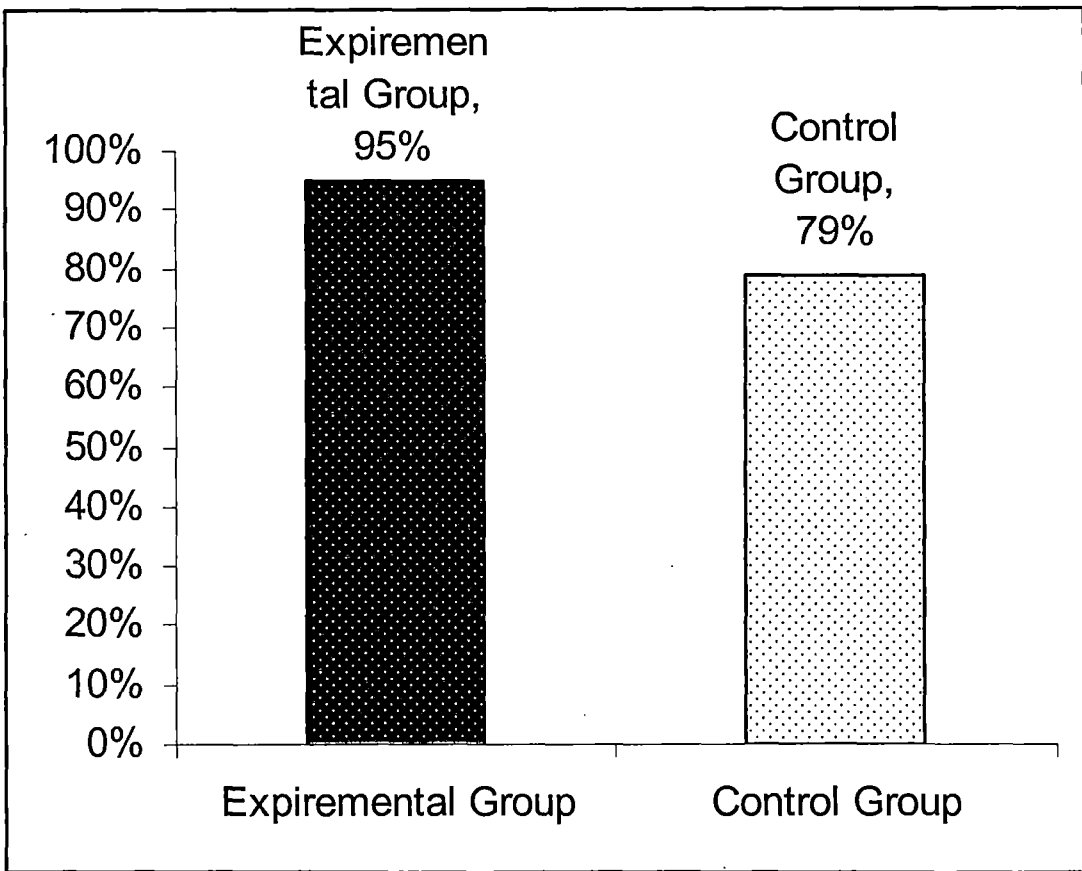


Table 2: Quiz Results

APPENDIX D
NATIONAL STANDARDS

Standards for Foreign Language Learning

1. Communication: Communicate in languages other than English

Standard 1.1:

Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.

Standard 1.2:

Students understand and interpret written and spoken language on a variety of topics.

Standard 1.3:

Students present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.

2. Cultures: Gain knowledge and understanding of other cultures

Standard 2.1:

Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied.

Standard 2.2:

Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.

3. Connections: Connect with other disciplines and acquire information

Standard 3.1:

Students reinforce and further their knowledge of other disciplines through the foreign language.

Standard 3.2:

Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures.

4. Comparisons: Develop insight into the nature of language and culture

Standard 4.1:

Students demonstrate understanding of the nature of language through comparisons of the language studied and their own.

Standard 4.2:

Students demonstrate understanding of the concept of culture through comparisons of the cultures studied and their own.

5. Communities: Participate in multilingual communities at home and around the world

Standard 5.1:

Students use the language both within and beyond the school setting.

Standard 5.2:

Students show evidence of becoming life-long learners by using the language for personal enjoyment and enrichment.

APPENDIX E

IRB



**CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO**

5500 University Parkway, San Bernardino, CA 92407-2397

**Institutional Review Board (IRB)
California State University, San Bernardino
Ph: (909) 537-5027 Fax: (909) 537-7028**

December 15, 2005

Mr. James Campbell
c/o: Prof. Eun-Ok Baek
Department of Science, Math, and Technology
California State University
5500 University Parkway
San Bernardino, California 92407

**CSUSB
INSTITUTIONAL
REVIEW BOARD
Full Board Review
IRB# 05020
Status
APPROVED**

Dear Mr. Campbell:

Your application to use human subjects, titled, "The Spanish Assistant" has been reviewed and approved by the Institutional Review Board (IRB). Your informed consent document is attached. This consent document has been stamped and signed by the IRB chairperson. All subsequent copies used must be this officially approved version. A change in your informed consent requires resubmission of your protocol as amended.

You are required to notify the IRB if any substantive changes are made in your research prospectus/protocol, if any unanticipated adverse events are experienced by subjects during your research, and when your project has ended.

Your project is approved for one year from the letter approval date listed above. If your project lasts longer than one year, you (the investigator/researcher) are required to notify the IRB by email or correspondence of *Notice of Project Ending* or submit a *Request for Renewal* at the end of your approval end date. Failure to notify the IRB of the above may result in disciplinary action. You are required to keep copies of the informed consent forms and data for at least three years.

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

Best of luck with your research.

Sincerely,

Joseph Lovett, Chair
Institutional Review Board

JL/mg

cc: Prof. Eun-Ok Baek, Department of Science, Math, and Technology

APPENDIX F
CHILD ASSENT



**CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO**

5500 University Parkway, San Bernardino, CA 92407-2397

Child Assent

I would like you to take part in a research project. The purpose of this research is to see if a web site will be helpful in teaching you Spanish. James Campbell is running this project under the direction of Dr. / Professor Eun-Ok Baek, PROFESSOR OF Instructional Design and Technology. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

You will use a web site during class time, and then complete a survey. This website is intended to help you learn Spanish. After using the web site, from January 20, 2006 to February 20, 2006, you will complete a survey. The survey should take about 5 to 10 minutes to complete. All of your answers will be confidential. Your name will not be on your survey. All information will be collected as a group. You can see the group results after February 28, 2006 at the Serrano High School room 435.

You are not required to participate in this study. Your grade will not be lowered if you do not participate. It is possible that by using the site, you will learn Spanish better and faster. You do not have to answer any questions on the survey, and you may withdraw at any time during this study without penalty. We ask you not to discuss this study with other students or participants.

If you have any questions or concerns about this study, please feel free to contact Dr Eun-Ok Baek at 909-537-9000 ext 75454. By placing a check mark in the box below, I agree to participate in the study.

Place a check mark here

Today's date: _____

Signature: _____
Participant

Date: _____

CALIFORNIA STATE UNIVERSITY SAN BERNARDINO
INSTITUTIONAL REVIEW BOARD COMMITTEE

APPROVED 12/15/05 VOID AFTER 12/14/06
IRB# 05020 CHAIR

APPENDIX G
PARENTAL INFORMED CONSENT



**CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO**

5500 University Parkway, San Bernardino, CA 92407-2397

PARENTAL INFORMED CONSENT

The study in which your child is being asked to participate in is designed to investigate the effectiveness of a supplemental website for studying Spanish. This study is being conducted by James Campbell under the supervision of Dr./Professor Eun-Ok Baek, PROFESSOR OF Instructional Design and Technology. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

In this study your child will be asked to use a website in his or her study of Spanish, then complete a survey. This website is designed to aid and facilitate your child's learning of Spanish. Following the use of the web site, from January 20, 2006 to February 20, 2006, your child will be asked to complete a survey. The survey should take about 5 to 10 minutes to complete. All of your child's responses will be held in the strictest of confidence by the researchers. Your child's name will not be reported with their responses. All data will be reported in group form only. You or your child may receive the group results of this study upon completion February 28, 2006 at the following location Serrano High School room 435.

Your child's participation in this study is totally voluntary. He or she is free not to answer any questions and withdraw at any time during this study without penalty. We ask that your child not discuss this study with other students or participants. It is expected that your child's participation in this study will increase his or her ability to learn Spanish.

If you have any questions or concerns about this study, please feel free to contact me Dr. Eun-Ok Baek at 909-537-9000 ext 75454. 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 allow my child to participate.

Place a check mark here

Today's date: _____

Signature: _____
Parent/Guardian

Date: _____

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
INSTITUTIONAL REVIEW BOARD COMMITTEE
APPROVED 12/15/05 VOID AFTER 12/14/06
IRB# 05020 CHAIR Joseph Smith by u

APPENDIX H
SURVEY

Answer the statements based on your experience using the Spanish Assistant computer program. Answer the statements by circling the statement that best describes your feelings.

1. My experience using the Spanish Assistant was pleasant.
Strongly agree agree neutral disagree strongly disagree
2. The available instructions were logical.
Strongly agree agree neutral disagree strongly disagree
3. The instructions were easily understood.
Strongly agree agree neutral disagree strongly disagree
4. I felt success while using the resource.
Strongly agree agree neutral disagree strongly disagree
5. The graphics helped me understand the story.
Strongly agree agree neutral disagree strongly disagree
6. The activities helped me learn the vocabulary.
Strongly agree agree neutral disagree strongly disagree
7. The navigation between activities was easy.
Strongly agree agree neutral disagree strongly disagree
8. I enjoyed using the resource.
Strongly agree agree neutral disagree strongly disagree
9. The resource held my interest.
Strongly agree agree neutral disagree strongly disagree
10. The page design was easy to understand.
Strongly agree agree neutral disagree strongly disagree
11. I learned the vocabulary faster with Spanish Assistant.
Strongly agree agree neutral disagree strongly disagree
12. I could easily go between pages.
Strongly agree agree neutral disagree strongly disagree

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