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PODCASTING IN MIDDLE SCHOOL SPANISH CLASSES:
A NON-TRADITIONAL APPROACH TO STUDENT
ACHIEVEMENT

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CHAPTER I

THE RESEARCH OBJECTIVE

The history of technology has demonstrated how various forms of electronic media have been effective in education including radio, television, cassette tape, and a variety of digital and Web-based media commonly used today. One of the earliest examples of earlier uses of electronic media was Oregon's Agriculture College (1922) radio station, which was created to keep students abreast of information about class lectures, athletic activities, commencement, and other events. Early uses of electronic media such as radio and television initially served to provide news and entertainment but were later adopted for educational purposes as well. By the end of the 1920s, 39% of American households had a radio and throughout the 1920s the radio was used increasingly as an educational medium (The Ledger, 2004).

According to Cuban, in the 1940s, largely because of a shortage of qualified teachers following World War II, the new medium of television was introduced as an instructional supplement. In response to this shortage, the Ford Foundation expanded instructional television by providing funding to schools and universities. By 1961, the Ford Foundation had contributed over twenty million dollars toward the use of television as an instructional tool. Hagerstown,

Maryland was one of the first locations to introduce supplemental instruction using television (Cuban, 1986).

In 1967 Children's Television Workshop (CTW), a nonprofit organization, was created to develop television programs which would benefit young learners of various ages. Programs such as *Sesame Street*, *Electric Company*, and *321 Contact*, were created to assist children outside the classroom with age appropriate material. For example, *Sesame Street* used colorful puppets to help preschoolers with numbers, shapes, and the alphabet. *Electric Company* used song and dance to help elementary school students understand phonetics, build vocabulary, and develop a sense of numbers. *321 Contact* focused on children aged 8 to 12 with emphasis on the sciences while attempting to bring an awareness of potential futures and activities in the field (Alexander, n.d.).

Sesame Street generated funds not only through television episodes but also through additional revenue from the sale of books, records, and puppets. As a result, *Sesame Street* became less dependent on the organization's financial support and was able to continue production for many decades. Some other CTW programs were not as successful or enduring (Alexander).

The concept of *Sesame Street* was to provide instruction to preschool children at home to increase their potential for learning and to prepare them for success once they entered the classroom. Children who watched *Sesame Street* were reportedly more adequately prepared to learn and developed more knowledge of content areas such as the alphabet, shapes, and numbers

(Fisch, 2005). This concept of teaching outside the classroom has proven to be beneficial in increasing achievement in early learners to the present day.

In 1969, the Clinton Pilot Cassette Center Project was initiated to establish a cassette library. The aim was to increase the achievement of students who were found to learn better by listening than by reading. The tapes were created to accommodate 148 students who were classified as “educationally disadvantaged” (Flugaur, 1971).

There were several key ingredients in each of the library’s 884 tapes. According to the Director’s Report, some of those ingredients were music for warm up time, immediate reinforcement, a teacher’s or student’s voice, material paralleling students’ environment, and so forth. Students reportedly listened to these tapes 8,155 times. When compared to another similar school, results showed that neither school improved in spelling. However, the Clinton group made “significant gains” in reading vocabulary, with more than 90% of the Clinton students making some gains in vocabulary within a 6-month period as compared to only 39% in non-Clinton students (Flugaur, 1971).

Similar to the Clinton Project, in the early 1970s Purdue University made lectures available to its students using cassette tapes. Without the convenience of mobile technology, students were required to go to the undergraduate library to check out cassette tapes (Tally, 2005).

Previously, instructional media, such as radio, television, and cassette tapes had offered opportunities to extend instruction beyond the classroom.

Today modern technologies such as MP3 format have increased the capability to extend instruction, outside the classroom. MP3 format is compact, which provides students more mobility in when and where they learn. Though previous technologies such as television, radio, and cassette tapes were determined to be resourceful and educationally beneficial, they did not provide mobility to students.

Mobile technology has become a prominent force in the everyday lives of today's students. According to the 2010 Pew Internet Report, 79% of students between the ages of 12 and 17 own an MP3 player (Lenhart et al., 2010). This reflects a high percentage of teens who are using mobile devices (mobile phones, MP3 players, and iPods), and the saturation of these devices within the teenage population. This suggests that podcasting, like radio and television in previous years, has the potential to act as an educational vehicle.

Foehr, Rideout, and Roberts (2005) report that the average child spends more than six-and-a half-hours each day using some sort of media device to access television, music, and electronic games. The International Society for Technology Education (ISTE), in a 2007 report, states that with such a level of support there "is a need for students to have access to more educational technology outside the classroom."

Recognizing the influx of students dependent on mobile technologies, some colleges and universities have implemented them into the classroom environment. Georgia College and State University began distributing iPods to

students in 2002 (Brookshire, 2007). In 2004, Duke University conducted an experiment known as the First-Year Experience, using iPods in many of its classes. Duke's Academic iPod Project, in cooperation with Apple, provided free iPods to each of Duke's 1650 incoming freshmen. Approximately 150 additional iPods were distributed to staff members, who were subsequently provided with training.

According to Yvonne Belanger, First-Year Experience Program Evaluator, some of the benefits of using the iPods included, reduced dependency on "physical materials," flexibility of location, greater student in-class engagement, and support for individual preference learning (2005). The First-Year Experience Final Evaluation Report, however, concluded that only 60% of the students who were issued iPods used the recording feature for content, while 28% reportedly utilized the music database and the iPod's hard drive capabilities for storage. As a result, the following school year iPods were only distributed in classes, which included the iPod as part of the curriculum (Duke University iPod First-Year Experience Final Evaluation Report, 2005). However, Dr. Peter Lange, Duke Provost and Senior Academic Officer, stated he was generally pleased with the results of the iPod Project and affirmed his commitment to continue incorporating technology in education (Cox, Gale Group, & Matthews, 2005).

Thus, from the perspective of this research, students having access to mobile technology outside of school hours equates to the potential of students having continued instruction outside the classroom. The availability of additional

instruction can be viewed as a resource tool for helping students with homework and to reinforce classroom instruction. Mobile technology affords students the opportunity to conveniently review content material and to assist with homework assignments. Incorporating mobile technology may motivate students to complete assignments. The trend toward student ownership and use of mobile technologies suggests a need for educators to recognize not only the potential of mobile technologies in education, but also to increase their level of commitment to leverage the use of technology.

Statement of the Problem

Technology is ubiquitous and students consistently and seamlessly demonstrate a high level of comfort using new, innovative technologies (Dale, 2007). Research indicates that over 70% of students own and use mobile devices (Lenhart, Purcell, Smith, & Zickuhr, 2010). However, in most instances, these devices are not commonly used for educational purposes.

The twenty-first century affords students and educators technologies that have the potential to affect pedagogical practices and outcomes. These devices can be used to enhance instruction not only in the classroom but also outside the classroom. Consequently, as mobile technologies become increasingly varied in capabilities, availability, and affordability, their potential to benefit educational outcomes is worthy of further examination.

Research indicates that technology can enhance teacher and student engagement in the classroom (North Central Regional Educational Laboratory, 2005). A study conducted by researchers Jones, McClure, and Yonezawa suggests that, “High levels of personalization are associated with higher levels of academic achievement” as demonstrated through achievement test scores (2010, p. 1). Additionally, in a 2008 study conducted by France and Ribchester at the University of Chester in the UK, professors created podcasts to provide feedback to students concerning their homework assignments. An email note from the instructor alerted students when comments became available. Students expressed a preference for receiving podcasts rather than written comments. They explained that podcasts were more personal, and they appreciated the “sense of immediacy” of the tutor’s voice. “Feedback via the podcasts reached students quicker, and they liked the flexibility of listening to podcasts where and when they wanted to” (Edirisingha, Fothergill, & Hawkrige, 2009).

However, while the literature demonstrates that colleges and universities are using new technologies outside the classroom, data are lacking to indicate whether these mobile technologies increase achievement. Additionally, there is insufficient research addressing how new technologies can influence achievement in the public school environment.

Therefore, the purpose of this study is to examine whether podcasting, in conjunction with mobile MP3 technology used outside the classroom, will affect student achievement. Additionally, data will be collected, and analyzed with

regard to gender, selected family demographics, and learning styles. This will allow the researcher to determine whether these variables affect students' test scores when podcasting has been included as an instructional activity.

Podcasting

. . . a digitally recorded sound (or sometimes sound with vision) file. These files can be created using free software programs such as Audacity and Lame Encoder. The term podcasting comes from Apple's iPod, a small, very portable, player with a huge memory into which thousands of podcasts can be downloaded. Podcasting is strictly speaking the process of rendering files accessible to listeners, usually via the Internet or a computer network from which they can be downloaded into an iPod or similar MP3 or MP4 player (Edirisingha, et al., 2009, p.1).

Podcasts begin as written information pertaining to content material. They can be created by teachers and/or students, either from classroom discussions or individual or group research projects. Often students prefer to write their podcasts in the form of a script in order to rehearse their lines. After creating the podcast scripts, students review them for accuracy of content. Once the teacher is comfortable with the podcasts, free recording software programs are available, which allow students to include enhancing features such as sound effects. Once

the podcasts are complete, they can be uploaded to students' MP3 players and taken home by them for additional instructional reinforcement.

The Clinton Pilot Cassette Center Project, previously mentioned, functioned similar to podcasting, with teachers creating recordings, and in other instances, with both teachers and students working together to create them. Tape recorders were made available to fifth and sixth graders to check out and take home, allowing students to replay the recordings as needed. After an 8-week study, test scores from the Clinton group were compared to a Title 1 school, which did not have access to the recordings. Neither school made gains in spelling; however, the Clinton group scored significantly higher in reading.

Inspired by Duke's 2004 First-Year Experience Project, Drexel University implemented a podcasting program. Free iPods were distributed to between 30 and 50 students admitted to its School of Education. Its director, William Lynch, explained, "If they are carrying it [iPod] and using it for a variety of purposes, they will likely use it for education" (Veres, 2005, p. 1).

In 2006, Arizona State University's (ASU) Applied Learning Technology Institute (ALTI) surveyed its students to obtain their reactions to podcasting class lectures and course material. With a student population of over 60,000, approximately 10,000 students responded. Sixty percent of those surveyed stated that they would like to receive more podcasts, 55% said they would revisit lectures, while more than 40% percent said they would use podcasting to access additional information (DiGangi & Jannasch-Pennell, 2006).

The University of Washington instituted a pilot podcasting program and made courses available to students. Lectures which were previously recorded in an analog format, were later coded with digital technology for podcasting. Within a few months, the number of courses using podcasts made available to students expanded rapidly, and a pilot study was conducted (Aldrich, Batzel, & Bell, 2005).

The pilot program began with 3 courses in the fall of 2005 and increased to 20 courses in the spring of 2006. Reportedly, students listened to the podcasts in excess of 50,000 times. Because of students' positive response to the podcasting program, the university's Odegaard Media Center later informed them that the media center would be discontinuing its analog services. Lectures would then only be accessible through podcasting (Aldrich et al, 2005).

Podcasting has been described as an "anytime", "anywhere" educational resource (Bell, Cockburn, Green, & Wingkvist, 2007). While podcasting is not limited to mobile technology, one of the attractive potentials is the mobility. Students can access podcasts at home or while riding the bus, with the aid of a mobile, MP3 player. The researchers report that students are excited about using mobile technologies, and podcasting offers the opportunity to guide and extend that enthusiasm to the learning environment (Reiners, Renner, & Schreiber, 2005, p. 4).

Despite the potential of podcasting as described, some educators question whether this technology is a promising tool for the twenty-first century learner.

Godwin-Jones casts doubt, stating that podcasting, “Allows for new and different ways of doing familiar tasks, and in the process, may threaten traditional industries.” However, he further notes, “Both [Skype and Podcasting] technologies offer intriguing opportunities for language professionals and learners, as they provide additional channels for oral communication” (Godwin-Jones, 2005, p.9).

Others question whether podcasting encourages students not to attend regularly scheduled classes (Hew, 2009). However, research studies have shown that class attendance does not decline because of podcasting lectures. One study, conducted by Borgey, Cizadlo, & Kalnbach (2006), found that approximately 150 students surveyed reported that podcasting did not influence their class attendance. In a 2008 study conducted by Hove and Corcoran, the researchers noted, “Having recorded lectures did not reveal significant differences in attendance rate.” They further added, “The supplemental format was particularly useful for students with lower attendance, whereas among students with higher attendance, class format was not influential in determining course grades” (McGarr, 2009, p. 309).

Although the studies cited earlier demonstrate a significant body of research about the instructional uses of podcasting at colleges and universities, similar podcasting research studies are lacking at the public school level. Yet, there is reason to believe that the potential benefits of podcasting can also be successfully applied in public school settings.

Purpose of the Study

Students have access to many technologies, which have not been extensively researched, for their potential use in educational environments. Therefore, the purpose of this study is to examine whether the application of podcasting outside the classroom can influence student achievement. The role of gender, selected family demographics, and learning styles will also be taken into consideration, since these variables may also influence student achievement.

Podcasting, specifically when combined with mobile MP3 technology, allows students to review classroom content, whenever and wherever. A podcast can be described as a recording, and for this research, recordings of Spanish instruction. MP3 technology converts these recordings into a digitally compressed format. Once created, the podcasts can be saved on a computer and uploaded to mobile MP3 players. The mobility of the MP3 players is an appealing characteristic of podcasting. With content uploaded to MP3 players, students can access the podcasts while completing homework assignments outside the classroom. Students can elect to repeat all or portions of the podcasts as needed.

However, although students are able to access content material using MP3 players, it is unclear whether podcasting will prove to be an efficient, educational medium. Therefore, this research will examine whether mobile podcasting, using

MP3 players, will affect student achievement, taking into consideration, demographics, gender, and learning styles.

In order to determine whether there is any correlation between learning styles and student achievement, this study will compare posttest scores from two unit chapters in Beginning Spanish Level II classes. The comparison will examine the scores of students who had access to podcasts to those who did not. The purpose is to determine whether podcasting is well suited as a means for delivering content to the twenty-first century learner outside the traditional classroom setting.

Family demographics are relevant to this research considering 22.6% of the school's population come from homes where Spanish is spoken. Since this study will be conducted in middle school Spanish classes, this research will determine if students who come from homes where Spanish is spoken have any advantage over students who do not. Therefore, the following questions articulate the focus of this research:

Research Questions

1. How does podcasting affect student achievement in middle school Beginning Spanish Level II classes?
2. What are the correlations between a student's background characteristics (Spanish spoken in the home, Spanish as first language, and

gender) and achievement in middle school Beginning Spanish Level II classes where podcasting is introduced?

3. What is the correlation between learning style as measured by the Brown and Cooper Learning Styles Inventory and test performance for students using podcasts in middle school Beginning Spanish Level II classes?

Significance of the Study

This study will contribute not only to the existing body of literature on the use of mobile podcasting as it relates to achievement, gender, student demographics, and learning styles, but it will also focus on its application to the public school sector. The results of this study provide insight into the effectiveness of podcasting in the context of middle school foreign language instruction and may be considered as a basis for future research. Though this research focused primarily on the efficacy of podcasting in middle school Beginning Spanish Level II classes, it is not the intention of this researcher to suggest podcasting should be limited to foreign language learning. Foreign language classes served as a vehicle for this research to examine the correlation of podcasting and student achievement; however, the general concept of podcasting can be incorporated in other content areas as well.

Types of Research Variables

There are three types of variables for this research: dependent, independent, and covariate. The dependent variables are the posttest scores for Chapters 8 and 10 of the Beginning Spanish Level II *Paso A Paso* textbook Prentice Hall; the primary independent variable is the group of students (those podcasting versus those not podcasting); and the covariate is the pretest scores for Chapters 8 and 10. The covariate will be used to statistically control for any differences that may exist in the levels of student achievement prior to the start of the study. Additionally, other independent variables which might impact student achievement are included: student learning styles, gender, and family demographics. All data pertaining to each variable will be collected and included as part of the data analysis.

Definition of Terms

The definitions below are provided to ensure clarity and use throughout this dissertation:

1. Multimedia-“Multimedia is in essence a presentation of information that incorporates multiple media such as text, audio, graphics, and animation. The representations can be redundant, incorporating the same content, or complementary, offering additional information. Multimedia need not be computerized, but computers offer some of the most seamless multimedia presentations. Moreover, digital