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EVALUATION OF THETECHNOLOGY-INTEGRATED FOREIGN LANGUAGE PROGRAM IN APUBLIC RURAL MIDDLE SCHOOL

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Abstract: The purpose of this study was two folds. First, we introduced a technology-integrated foreign language program established at a public, rural middle school in a Southeastern USA, and second, we evaluated the new program focusing on seventh and eighth grade students' foreign language skill acquisition. This study included 44 male and 54 female students between the ages of 11 and 14 years old. Of these, 78 were seventh graders and 20 were eight graders, all from various ethnic groups and socioeconomic backgrounds. To evaluate the effectiveness of the technology-integrated foreign language program, students' foreign language skills were measured using a pretest and posttest administered at different grade levels. The significant differences between the pretest and the posttest scores indicated that both groups exceeded by far the city'spre-determined school minimum requirements to show adequate progress. Consequently, the study results suggested that the technology-integrated foreign language program at the public rural middle school was effective to achieve the city's performance goals established for students' foreign language learning.

Keywords: foreign language learning, technology integration, learning technology, foreign language trilogy

1. Introduction

Parents prefer their children to attend a school where foreign languages are being taught for many reasons. According to Giacchino-Baker and Piller (2006), 97% of parents supported the need for a second language after participating in a Spanish two-way immersion (TWI) program. Parents recognized positive effects of the program not only on their children's bilingual competencies, but also on their preparation for the future (Giacchino-Baker &Piller, 2006). While some schools, public or private, do not offer foreign languages, others offer several of them. Students must sometimes make choices toward the type of school they want to attend. First, they need to discover what foreign language they want to learn. Given the abundance of foreign languages, giving the priority to one must be considered carefully. Many factors can influence a student's choice. An ideal situation is one in which students can experiment with several languages that interest them, before committing to one in particular (Davies, Davies, Hutton, Adnett, & Coe, 2009). Thus, some students can be looking for schools that feature such a program. Knowing this, schools are tempted to implement this type of program to appeal to students. Furthermore, if, in the same geographic area, public schools are competing with private schools, a successful

multilingual program can make the difference in achievement scores on standardized testing by appealing to high achieving students. Believing that mixing low-income students with a bigger population of higher income students was going to serve as a motivational catalyst for all students to perform better, a city school district in a southeastern state developed a foreign language program to be implemented at a public middle school in the rural community. In order to improve students' achievement and consequently become even more attractive, and even to appeal to students from the five surrounding private schools, the foreign language program invested in the integration of technology by installing interactive whiteboards, open educational resources (OERs) repository, digital E-books, and computer workstations in the classrooms.

However, questions remained whether students and their parents are motivated to that end and how they would react to a technology-integrated foreign language course. The foreign language trilogy program implemented at a public rural middle school had been very popular in the area. Many parents considered it as a plus for their children. Consequently, those parents who trusted the success of the program tried to have their children admitted to it. It was also believed that this interest increased parent support and, as a result, positively spilled over on the school's efficiency at large. According to Buckley (2007), while some support exists for the theory that increasing parental engagement in public school builds stronger school communities, the same phenomenon does not apply to private religious schools, as parents are less involved in those establishments. Therefore, generalizing from Buckley's research, parent involvement would be higher at the public middle school than it would be in the surrounding private religious schools. This assumption led to the thought that the public school's performance would grow as the area private religious schools' efficiency would remain at the same levels, thus giving an edge to the public school system. The trilogy program featured foreign languages: French, German, and Spanish. To be admitted to the program, students had to show good grades. A limited number of slots were available for each language. Consequently, students and parents needed to show strong motivation to be part of the program. Bartram (2006) suggested that parents are responsible for the way their children look at foreign languages. It seems fair to say that the apparent popularity of the trilogy program was primarily due to the parents showing a positive attitude toward the program and provoking an equally positive response from their children.

However, it was unknown if the technology-integrated foreign language trilogy program would positively improve students' achievement. No investigation has ever been attempted at the local level to answer this question, albeit there was a growing consensus among the stakeholders on the need of empirical evidence supporting the program. Besides, it seemed reasonable to find out if the apparent success of the trilogy and level one foreign language classes were related to the infusion of technology in the classroom. Otherwise, the resources dedicated to the foreign language program could be diverted to serve a larger base of the student population at the middle school, rather than being targeted at the better performing students. However, given the belief that the better performing students could serve as role-models to the larger students population, and hopefully created a leveling by the top effect, those dedicated resources were hoped to give a good return on investment, as the students detoured from the private schools were hoped to increase the public middle school scores on standardized tests. Thus, the purpose of this study was to evaluate a technology-integrated foreign language program in a public middle school in the rural community located in a southeastern USA.

2. Foreign Language Learning in Middle School

Globalization is a sine qua non condition for the learning of foreign languages, and now that globalization is a fact, the learning of foreign languages for better communication and better understanding among the people of the planet we all live on is becoming a must (Kartal&Uzun, 2010). The fast expansion and adoption of technology

by an increasing number of nations and their people lead to an inevitable interweaving of their cultures. In such a context, the acceptance of multiculturalism is of growing importance if those many cultures want to live together peacefully. In order to live peacefully, people need to be able to understand each other with the purpose to facilitate the development of mutual acceptance and respect. The very first step in the process implies the basic principle of communication, which one is done through language. However, this is not as easy as it might seem. Denmark is an example. The Danish government's attitude towards education has been one of pushing for national identity at the expense of multiculturalism, putting more emphasis on the Danish language and culture, while ignoring minority languages, cultures and religions (Timm, 2009). Timm amplified that such a policy had consequences for children from other cultures attending Danish schools, who felt that their sense of identity and self-esteem was diminishing when the language they spoke at home was rejected at school. As a consequence, some of the parents believed that dropout and crime among young immigrants were directly related to the rejection of the minority maternal language in school (Timm, 2009). She stated that the position of the Danish government put them at odds with the policy and the philosophy of the European Union, of which one they are a member, because the European government wanted to promote multiculturalism rather than national identity. A philosophical approach to foreign languages is defended by Young (2001) who did not see the main reasons for studying a foreign language as practical ones, but as a humanistic enterprise, a way to deepen the understanding of what it means to be human (Young, 2001). One of the most common remarks that foreign language teachers hear is: "Why do they say it that way?", which in fact means: "Why don't they say it our way?". Such reflections show how people are shaped and therefore limited by their own language, itself a mirror of their culture (Young, 2001).

To better understand Young's argument, one can read Lederer's bestseller Anguished English (1989). The writer took both a critical and amused look at the limitations of the English language. In other words, learning a foreign language is not only about learning its linguistic intricacies, but also about viewing things from another person's viewpoint. With a similar philosophy, opposite of the Danish monoculturalist attitude, an English-Spanish two-way immersion (TWI) program has been making waves in San Bernardino, California. Giacchino-Baker and Piller (2006) researched the parents' motivation towards this English-Spanish two-way immersion program, and they found that in California schools and parents have been teaming up to support educational models promoting bilingualism and social justice. Those schools had dual language programs in which the curriculum was being taught in two languages. Students learned academic and social skills in their mother tongue and an additional language. A number of English-first language students were mixed with a roughly equal number of heritage-language students. GiacchinoBaker and Piller (2006) explained that all participating students reached the 50th percentile or higher in both their native language and a second language in all subjects and maintained that achievement through the end of schooling. Given those results, parents of both Spanish and English-students who participated in such programs overwhelmingly supported it, with 97% of them perceiving learning a second language as important and agreeing that all schools should teach a second language. Parents recognized TWI programs to have a positive effect not only on their children's bilingual competencies, but also on their preparation for the future (Giacchino-Baker &Piller).

Several specifically educational arguments are in favor of learning foreign languages. Jonsson (2002) said that students learning another language are better able to process information in other subjects. For example, Georgia students who took at least three years of foreign language at the high school level scored higher on the verbal portion of the SAT than those who did not. Patten (1999) suggested that children who receive second language

instruction perform better on cognitive and verbal tests than those who do not speak another language, and the addition of another language also give them an increased capacity to communicate with more people, and consequently an advantage in the workforce. In the same vein, Stewart (2005) tied the learning of foreign languages to better achievement in math and reading. She argued it is well documented that foreign languages drastically improve cognitive abilities, consequently setting the pace for better accomplishments in math and reading. According to Stewart, increased cognitive skills, higher achievement in other academic areas, and higher standardized test scores are additional benefits of learning a foreign language. She made the point that in many countries where students outperform American students in reading and math, foreign language study is introduced at an early age. She stated that because the No Child Left Behind Act was specifically designed to accomplish better achievement in math and reading, it was not a coincidence if the same document recognized foreign language as a core subject.

More basic reasons exist for the advantages of studying foreign languages, especially in the business world. Maratier-Declety (2001) discussed the relevancy to study French. She argued that French could be part of anyone's general education development, opening the mind to others' behavior and relationships, and leading to cultural diversity. Being satisfied with a single means of expression (one language) leads to intellectual impoverishment and stagnation. She added that when it comes to business, if one wanted to sell well, one had to use the language of the consumer. Being more specific about the economic benefits of learning French, she explains the role and importance of the French-speaking economic zone that extends way beyond the borders of metropolitan France, for a total of 52 countries, made up of 450 million inhabitants, which is a powerful market force. She then goes into more specific details about which French-speaking countries and French market zones appear to gain influence in the world economy, reasserting that linguistic affinities make business relationships direct and easier stagnation. The rationale developed by Maratier-Declety could be extended to the use of other languages than French. According to Galuszka (2006), a new trend has been the cultural appeal of a language and the ability that the students want to have to learn about foreign cultures and events on their own. It directly relates with the new technological phenomenon that has been observed lately throughout the events happening in Tunisia, Egypt, Bahrain, Libya, Yemen, Syria, and other Middle-Eastern countries. The use of the Internet and its related technology (eg, Twitter, S.M.S.) which put people in direct and instant contact, relays "raw-type" news without any middle-man, as it happens, leaving interpretation to the beholder. Finally, Met (2004) summarized possible motivations to learn foreign languages: expanding business opportunities overseas, national security matters, cognitive and academic benefits, such as mental flexibility, divergent thinking, metalinguistic awareness, and increased verbal intelligence.

3. Technology use in Foreign Language Classes

When researching the effect of computer-assisted language learning (CALL) on pre-service English teachers teaching English as a second language, Kilickaya (2009) found that half of the student teachers tried to use CALL tools during their practice teaching. However, they reported to have been confronted to issues such as lack of equipment, low quality software, need for more support and training, sometimes negative attitudes from both teachers and learners, and lack of commitment.Lai (2010) argued that when students were asked if they preferred their essays to be evaluated by peers or computer-based programs, they chose peer review over concerns that CALL brought up issues of social learning, feedback strategies, computer anxiety and cultural impact.On the other hand, Genç and Aydin (2010) confirmed that the motivational aspect of CALL was reinforced by the students' initial interest with technology, which in terms strengthened their learning ability for learning the

language itself. Their research confirmed a relationship between the motivation to learn a foreign language and the integration of technology in the learning process.Yuehchiu (2010) argued that if CALL was generally seen as a positive tool by learners, it had serious shortcomings that could not make it a replacement for a teacher. He agreed that such a tool could help students learn a foreign language, especially, contrary to Lai (2010), when with editing essays and improving writing skills. Yet, Genç and Aydin (2010) agreed with Yuehchiu (2010) that the use of technology is a positive motivational factor among students to learn foreign languages.

As to using technology in the foreign language classroom, Çakir (2006) defined the roles of the teacher as a controller, assessor, organizer, prompter, and participant. He described the practical techniques to be used when viewing video in the classroom, such as active viewing, freeze framing and prediction, silent viewing, sound on and vision off, repetition and role-play, reproduction, dubbing, and follow-up activities. He also discussed other advantages of viewing videos in the classroom, such as the ability to contextualize, see paralinguistic features (facial expression, hand gestures, and intonation), and setting (formal or informal).Portable computing devices such as laptops, tablet computers, and smart phones allow for another possible use of technology in the foreign language classroom. Oliver and Corn (2008) studied the use of technology by students at a private middle school before and after the implementation of a one-to-one tablet computer program. They discovered that such programs had been found to have a positive impact on students' behaviors and attitudes, and attendance. Also, they found that after two years in the laptop program, students' achievement had been equal to four extra months of instruction for science and two additional months for math and visual/performing arts over a period of two years. Oliver and Corn (2008) further asserted that students expressed more satisfaction with the use of technology and reported more exposure to technology-supported classroom activities. This last point was not true for all subject areas, and the difference was explained by the attitudes towards technology among the teachers. They concluded there was a need for more support for the teacher, possibly in the form of increased professional development. In addition, students reported much improved technology skills. The researchers observed that student-centered activities did not increase. Instead, teacher-centered activities remained the norm. Cooperative learning activities did not increase in the classroom, but spontaneous cooperation started to occur among students themselves. They acknowledge that those middle school students are from affluent families and thus were already well-equipped with technology at home. Drastic improvement in computer skills might not show as much as it would in a school with a lower socio-economic level. Finally, the most influential factor seemed to be the adoption of the technology by the teachers.

Mobile devices also allow for the use of podcasting outside of the classroom. Kavaliauskienė and Anusienė (2009) researched the use of podcasts for listening assignments and concluded that downloading such assignments on a portable device had many benefits for students. Among those benefits were convenience, cooperative learning opportunities, motivation, and absence of intimidation coming from possible fear of failing in front of peers. A follow-up session in the classroom with a foreign language instructor let everyone check their own understanding and progress. Nonetheless, the researchers warned that a blend of learning methodologies had to be used, because not all learners enjoy digital technology. There was a need for a mix of e-learning and face-to-face sessions. Teachers may experience fear of digital technology as well. Gray, Pilkington, Hagger-Vaughan, and Tomkins (2007) reported a case study in England made on four teachers implementing information and communication technology (ICT) in their classrooms, primarily using interactive whiteboards. They stated that changes were made at a slow pace and carefully by the teachers, due to the huge amount of time needed to make even very small changes in their teaching habits. They argued technology had to be used as a tool to organically change

teachers instead of an instrument imposed upon them to force transformation. They also asserted that the four teachers observed did not like to share activities in order to gain time, but preferred to create and use their own activities.

They seemed to regard new technology as a means to contribute to and improve their teaching rather than an end in itself. Nonetheless, the researchers suggest that mass training programs to form teachers appear to be an efficient mode to carry on professional development. Another type of technology to be used in the foreign language classroom is text-to-speech (TTS) software. Rughooputh and Santally (2009) researched its integration into teaching. They discussed the challenges surrounding the instructional design of text-to-speech course delivery. They also discussed the pros and cons of such instructional strategy. Distance learning, also a possible factor in school attendance, was cited as a pioneer in text-to-speech adoption, although its one-size-fits-all approach was criticized. Indeed, if one advantage of text to speech delivery is a uniform delivery across the spectrum of learners, therefore diminishing the negative impact of a less skilled teacher on his audience, it is also its Achilles' heel, because it might not address a variety of learning styles. The research team at The University of Mauritius demonstrated that it is possible to personalize text- to-speech lectures to address many different types of learners, depending on what the lecturer integrated in the design of the lectures. In a time of budget cuts, such technology helped to save money. This last point was reinforced by the availability of open-source software that can be coupled with PowerPoint presentations and even T.V. streaming within the text-to-speech course design. Even though disadvantages to this instructional technology method exist, Rughooputh and Santally (2009) believed that the advantages far outweigh the disadvantages, as shown in the case of the University of Mauritius.Husni and Jamaludin (2009) also discussed the use of text-to-speech software, but in the context of helping children with dyslexia. They argue that the main problem with text-to-speech technology is the lack of immediate intervention, which is the key in teaching children to read. However, automatic speech recognition (ASR) technology could be the answer to this problem, because it does provide immediate feedback to the students as they are reading. Since pronunciation performance is also provided (Husni&Jamaludin, 2009), ASR could be used in a foreign language learning. Another advantage of automatic speech recognition is its suitability to being used in a big classroom with many students, thus helping with solving potential overcrowded classes. Motivation could be enhanced among students due to the accompanying excitement and fun brought on by the software, such as using animated characters, and colorful presentations. Husni and Jamaludin (2009) concluded that automatic speech recognition technology could enhance the learning experience for the children. A good learning experience is likely to have effects on attendance.

Video games are also a part of modern courses. Children are likely to enjoy a class in which one they can play while learning, thus having a positive effect on attendance. Schmidt and Vandewater (2008) stated that content is key. Educational T.V. appears to have a positive impact on learning, while entertainment shows do the opposite. They examined the impact of video games and stated that studies demonstrated the positive effect of video games on a variety of visual spatial skills (Schmidt &Vandewater). This applied to adults as well as to children.YouTube is the place many students go to when looking for video on any topic. Terantino (2011) examined the possible uses of this Web site, such as creating, watching, and sharing videos for the purpose of learning a foreign language. Referring to the appeal of the Internet to American teens and young adults, the author argued that foreign language instructors need to modify their instructional methods and activities to match the interest of those students (Terantino, 2011). Among those interests, he cited the ability to quickly access information, the need for multitasking, the appeal of graphics over text, the availability of hands-on activities, the access to

information, the opportunity to be socially networked, the fun of playing games, and the possibility of rewards. He further asserted that there is a disconnection between what the teachers provide and what the students want. He suggests instructional practices, including YouTube, to help bridge the gap between instructors and students; therefore, meaningfully engaging the students in the learning of the targeted foreign language. The ultimate purpose is to make the students learn without even realizing that they are learning. Terantino (2011) linked to YouTube videos that provide good examples of subjectcontent and culture-based videos for a variety of foreign languages. He went on explaining that students can create their own videos while collaborating on a common project. Finally he addressed possible concerns including privacy, content-appropriateness, and Internet connection speed and suggested ways to deal with those concerns. Another use of educational technology was presented by Elola and Oskoz (2010) in their research on collaborative learning in the foreign language classroom. They examined the use of social Web technology in the foreign language classroom, and they observed that it allowed expansion of classroom boundaries while creating a less teacher-dependant learning group. This new learning community was able to override the distance from the instructor and the textbook by exploring topics that surface from the class interests and interactions.

Those interactions led to developing problem-solving skills in a group setting, learning vocabulary and grammatical feature that were not in the regular classroom environment, and constructing or reconstructing content knowledge (Elola&Oskoz, 2010).Another way to override distance is to use videoconferencing. Wen, Ling Ling, and Marek (2011) studied the relationship between three learning variables: ability, motivation, and confidence. They found that enjoyment was the most important factor to raise all three variables. They concluded that instructors should to make student-centered activities, such as videoconferencing, a major component of their instruction. Confidence, motivation, and ability were improved by a positive experience in communicating in the target language with native speakers. According to the researchers, the ability of videoconferencing technology to emphasize synchronous interaction and active communication should be made as recurrent as possible, rather than being the exception. The study showed that videoconferencing should be a common part of instructional design in foreign language classes, because the authenticity of the resulting interaction gave students more confidence in their own skills and learning, inspiring them to global connections between cultures. Eskrootchi and Oskrochil (2010) found that a mix of experience, interpretation, and structured interaction worked best with the use of computer-based simulation while working with peers in a project-based learning (PBL) environment, allowing the students to start by learning through simple simulations before taking on more advanced ones. They compared the progression made by the students in a science PBL class with that of students learning a new foreign language by accumulating the bases of vocabulary and grammar before building more sophisticated sentences as the simulations become more intricate.Their research also suggested that female students, along with those students who are at-risk students in traditional practices of teaching, could gain from technological innovations.

4. Method

The nature of the study was an evaluation study as students' achievement scores were collected to monitor the progress of their foreign language learning in a technology-integrated foreign language program. The study was conducted with six classes of seventh grade students enrolled in the foreign language trilogy program and two classes of eight grade students enrolled in the French Level One course ata public, rural middle school in a Southeastern USA during an academic year. The students' progress was evaluated through the administration of a pretest and a posttest conducted before and after the one year trilogy program. The foreign language trilogy was a program in which one selected high performing seventh grade students rotated between three twelve-week

sessions of French, German, and Spanish during a school year. At the end of the school year, students had the opportunity to decide which one of those three languages they wanted to go on with at the eighth grade level. Then, depending on their grade and the number of spots available in each of those courses, they were placed in a level one foreign language course once they reached eighth grade. In an effort to control the possible interference of history and maturation in a pretest-posttest comparison, several classes were tested, therefore reducing the threat to study validity. For instance, a threat to internal validity was the possibility of the second and third sets of seventh grade foreign language trilogy students being impacted by the instruction already received in German or Spanish once they entered the French course. Nonetheless, because those are different languages, the interference - if any - was expected to be minimal.Due to the similarity of the groups tested, the results can only be transferable to similar groups of students in order to maintain external validity. Indeed, the students in the foreign language trilogy program were selected based on their high grades. Consequently, the results are applicable only to high achievers. The target middle school was located in a multiethnic community, mostly made of African American, Caucasian, and Hispanic families. The school serves seventh and eighth grade students. For the school year 2009-2010, 794 students were enrolled: 272 African-Americans, 248 Caucasians, 202 Hispanics, and 72 others. The socio-economic status of those students varies widely between low and high income families. However, because the middle school is a title I School, the average family income remains closer to the low income range.This study encompassed approximately 44 male and 54 female students between the ages of 11 and 14 years old. Seventy-eight students were seventh graders while twenty were eighth graders. The approximate ethnicity by grade level is shown in Table 1.

Table 1: Student Repartition by Ethnicity

	Caucasian	African American	Hispanic	Other	Total
Seventh grade	48 (62%)	14 (18%)	15 (19%)	1 (1%)	78
Eighth grade	11 (55%)	2 (10%)	6 (30%)	1 (5%)	20

In order to be in the seventh grade foreign language trilogy program or in the eighth grade level one foreign language program, students had to be identified as gifted, or be selected based on excellent academic achievement, with no grade lower than a B. Thus, their ability was higher than the average school population. The seventh grade foreign language trilogy students did not have a reading course, because the foreign language classes replaced reading. The eighth grade level I foreign language students did not have literature, as this course was replaced by the foreign language classes. The study took place in the seventh and eighth grade French courses. This study used a nonrandom sample with purposive sampling because the study purpose was to evaluate a technology-integrated foreign language program. Only students who were participating in a technology-integrated foreign language program were used in this evaluation study. The measurement instruments we used in the course of this study were two achievement tests, one for each group. The achievement tests were aimed at finding out if a technology-integrated foreign language program improved middle school students' foreign language skills. The achievement tests included a pretest and a posttest. A teacher-made pretest and posttest were used to measure students' achievement at each grade level. The tests were built by the French instructors at the target middle school. Because all the vocabulary words were French words, item validity was preserved; because the test included a variety of vocabulary, spelling, and grammatical topics, sampling validity was assured. Content validity was further be assured by scoring students' achievement only on the topics taught.

The seventh grade trilogy pretest was built according to the Georgia Performance Standards (GPS) for Modern Languages Connection. GPS provided expectations for instruction, assessment, and student work, and defined the level of work that demonstrated achievement of the standards. Because the trilogy program was typical to city schools and was not replicated elsewhere in the state of Georgia, there was no GPS for the seventh grade trilogy classes. Consequently, this study used the GSP for Modern Languages Connection for assessment purposes, because they had been created for middle school grades where foreign languages were taught for nine weeks. Thus, they suited better the twelve-week trilogy course than the GPS for Modern Language Level I, which ones were intended for an entire school year course. The seventh grade pretest included 50 matching vocabulary items. The total maximum score was 50 points. The raw score was converted into a percentage score to be further compared with the city's minimum score requirement. The seventh grade trilogy posttest included exactly the same items as the pretest. However, the questions were randomly mixed up and were shown in a different order. The eighth grade assessment test for French Level Iwas used as a pretest and a posttest to measure eighth graders' foreign language skills. It was developed by the school French Level I instructor, according to the GPS for Modern Languages Level I. Because the eighth grade foreign languages program at the target middle school awarded full high school credit, the French Level I students were required to take the same final exam at both schools. It was made of 116 questions including multiple choices, matching, completion, true or false, and an essay. The maximum total score was 265 points. The raw score was converted in a percentage score to be further compared with the city's minimum score requirement. Table 2 shows the pretests and posttests that were used for each grade group.

Table 2: Pretests and Posttests Given in Each Group

	Pretest	Posttest
Seventh grade group	Pre-French Trilogy test	Post-French Trilogy test
Eighth grade group	Pre French Level I test	Post-French Level I test

Reliability was controlled as the pretests and posttests were identical within each grade level and were administered in the same way by the same test administrator. Although reliability among the two classes of eight grades students was guaranteed by the similarity of the tests and the same way they were administered by the same test administrator, it is worth to acknowledge that the first class took the tests in the morning, thus in a fresher state of mind, while the second class took the tests during the last period of the day, possibly in a more advanced stage of fatigue. Furthermore, due to scheduling constraints, the second class took the achievement test on the last period of the last day of school. After the study was approved by the school's principal and the district's superintendent, and permissions were granted from students' parents or guardians, the study took place throughout the school year. Six seventh grade classes and two eighth grade classes took a pretest to assess their skills at mastering French. The skills to be taught were defined by the GPS for Modern Languages (GeorgiaStandards.org).

Starting the academic year, the use of modern technology was brought into the French classroom: two new student computer workstations were installed with Internet access; the overhead projector and its screen were replaced by an interactive whiteboard; access to the online version of the textbook was given to students; a class Web site was built; a digital camcorder was bought and used for recording students in the classroom, then post their videos on the class Web site; students were assigned video projects to be carried out outside of the classroom; the school took a subscription to an educational Web site (Quia.com) offering online interactive educational games for students, quizzes, surveys, and class Web pages; all along, students had been encouraged to use their personal

computer at home to link to the course and work on assignments. Diverse technologies were integrated into the class lessons within the continuum from the teacher-centered instruction to the students-centered learning as shown in Figure 1.

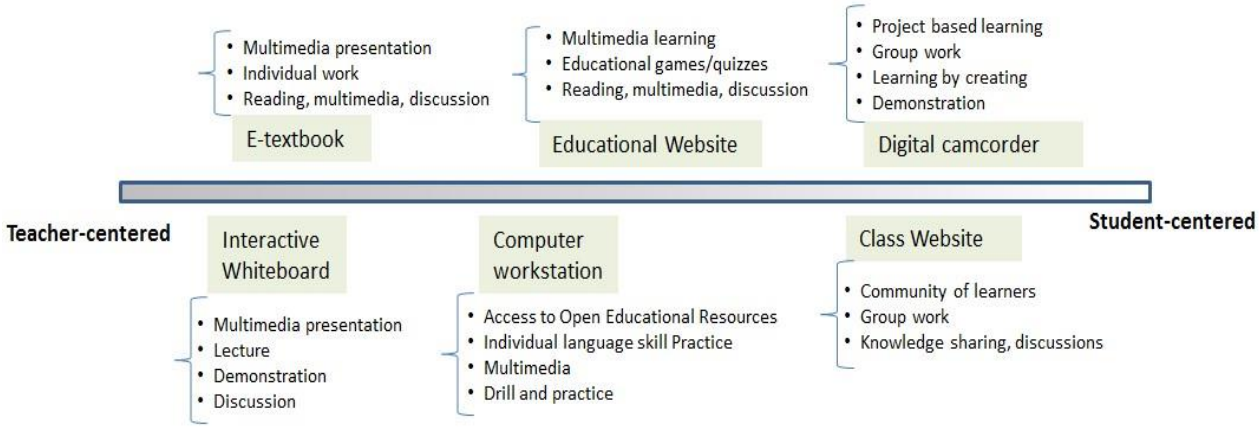

Figure 1: Spectrum of Technologies Integrated in the Foreign Language Program

The six groups of seventh graders participated in a French introductory course, each for a nine-week period. After completion of their respective courses, the participants took a posttest to assess how the foreign language program they participated in had improved their foreign language skills. Because the foreign language trilogy program is a nine-week long course, the seventh grade students took a pretest within the first week of class and a posttest within the ninth week. Each nine-week cycle gave foreign language instruction in one language to two groups of students, one during fourth period, and the second one during sixth period. When the nine-week period ended, those two groups switched to a second foreign language for another nine-week period and then once again to a third foreign language. Thus, three sets of seventh grade students were rotated between French, German, and Spanish. For the purpose of this study, three sets of seventh grade students were followed throughout their French course. Unlike the seventh grade foreign language trilogy classes, the eighth grade Level One French course was a year-long course; thus, the eighth grade students took a pretest within the first week of class and a posttest within the last week of class, after receiving an entire school year of French instruction. Due to the different content between the two grade levels, the pretests and posttests were also different between the grade levels. Only the students who completed both the pretest and the posttest were included in the data analysis. The data analysis compared pretest and posttest means among the seventh grade and eighth grade classes. Because the seventh grade classes were more technology-integrated than the eighth grade classes, the gap between the pretest and posttest means was expected to be significantly different between each grade level. In other words, the seventh grade classes were expected to show greater achievement than the eighth grade classes. The researchers administered and supervised all activities in all the groups. The seventh grade students were allowed a maximum time of 40 minutes during their regular class time on each of the pretest and posttest. Students were informed that the pretest would not be included in their grade, but the posttest would be. The eighth grade students were allowed two periods of 50 minutes maximum on each of the pretest and posttest. If students did not need the maximum allotted time, testing was closed after the last participant in each group submitted the test. Due to scheduling issues, all eighth grade groups took the posttest on different days, but all within the same week; one eighth grade group took the first and the second parts of the posttest on two consecutive days, while the other eighth grade group took the first and the second parts of the posttest on two non-consecutive days. Like the seventh grade

students, the eighth grade students were informed that the pretest would not be included in their grade, but the posttest would be.

5. Results

The goal of this evaluation was to establish if 75% of students scored at 70% or above or showed an overall class increase of 15% from the pretest and posttest administration. A pretest and posttest were used to measure students' foreign language skills in learning French. The pretest and posttest were administered to all students in the seventh grade group and the eighth grade group.In the seventh grade group, there was a significant difference in the scores for the pretest (M=5.71, SD=3.48) and the posttest (M=44.64, SD=7.19), t(77)=-49.79, p< 0.001, as shown in Table 3.Seventy three students out of 78 (93.59%) scored at 70% or above and showed an overall score increase of 38.93 (77.85%). Thus, the seventh grade group exceeded by 18.59% the minimum requirement of 75% of students scoring at 70% or above. Furthermore, the seventh grade group exceeded by 62.85% the minimum requirement of an overall class increase of 15%.

Table 3: Paired Samples t-test for the Seventh Grade Group

Measures	Pretest (n = 78)		Posttest (n=78)		
	M	SD	M	SD	t(77)
	5.71**	3.48	44.64**	7.19	- 49.79*

* $p < 0.001$

** Possible maximum score: 50

In the eighth grade group, there was also a significant difference in the scores for the pretest (M=31.8, SD=15.69) and the posttest (M=229.23, SD=21.88), t(19)=-31.59, $p < 0.001$, as shown in Table 4.

Table 4: Paired Samples t-test for the Eighth Grade Group

Measures	Pretest (n = 20)		Posttest (n=20)		
	M	SD	M	SD	t(19)
	31.8**	15.69	229.23**	21.88	- 31.59*

* $p < 0.001$

** Possible maximum score: 265

Nineteen students out of 20 (95%) scored at 70% or above, and showed an overall score increase of 197.43 (74.5%). Thus, the eighth grade group exceeded by 20% the minimum requirement of 75% of students scoring at 70% or above. Furthermore, the eighth grade group exceeded by 59.5% the minimum requirement of an overall class increase of 15%.These results indicate that both groups exceeded by far the city determined school minimum requirements to show adequate progress. Consequently, the findings suggested that the technology-integrated foreign language program at the middle exceeded the city schools goals for adequate student progress as shown in Figure 2.

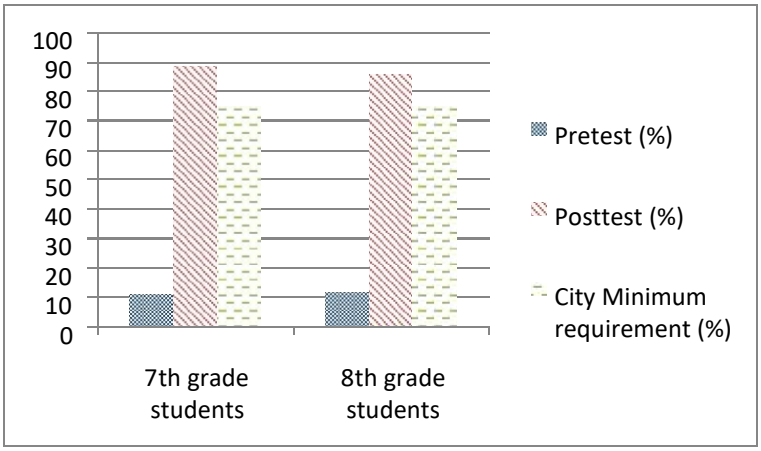

Figure 2: Comparison of Students Achievement Scores with City Requirement

6. Discussion

The purpose of this study was to evaluate a technology-integrated foreign language program established at a public, rural middle school in a Southeastern USA. To accomplish this purpose, a summative evaluation study was used with a pretest-posttest comparison design. Two groups were use in this evaluation study, the seventh grade group and the eighth grade group. Except for one student, all eighth grade students completed the same trilogy program during their prior school year as the seventh grade students did during the length of this study. This continuity allowed the researchers to investigate the students' performance in both grades, thus showing consistency in the quality of the foreign language program. First, the results of the study showed a significant difference between the pretest scores and the posttest scores in both groups. According to the city school district, a minimum score increase of 15% is required from the pretest to the posttest. An overall score increase of 38.93 (77.85%) for the seventh grade students and an overall score increase of 197.43 (74.5%) for the eighth grade students indicates that both groups exceeded by far the city's pre-determined school minimum requirements to show adequate progress. Such a drastic increase shows that the technology-integrated foreign language program at the public rural middle school largely exceeded the district requirements at the seventh-grade level. Furthermore, when comparing the data for both groups, one can see a pattern of over a seven-fold increase in both groups between the pretest and the posttest, therefore showing consistency on a two-year scale.

It is expected for students to show progress in a course. However, a measure for satisfactory progress in a course has to be set. At city schools, the definition of satisfactory progress was defined at the district level as 75% of the students scoring at 70% or above, or showing a score increase of 15% between a pretest and a posttest. Whether those minimum requirements are high enough is open for debate. Indeed, because the pretest is given before uncovering the course materials, one would expect most students to score at a very low level; conversely, at the end of the course, after all the materials have been uncovered, one would expect most students to show a decent understanding of those materials. In other words, ideally, students starting a new course would score a 0%, but those same students would score a 100% by the end of the course. School systems have setup a grading system that is supposed to show the level of understanding for each student, and they require students to obtain a minimum score to pass a course, thus showing acceptable understanding of the course materials. For instance, the minimum passing grade for each course in the city schools system is a 70%. The letter grade for such a score is a D. Consequently, the question seems to become: how difficult is it for a student starting almost "empty" of a specific course-related knowledge to become 70% full of that knowledge? Although many factors need to be

taken into consideration, is it difficult for a beginning student to improve from "no-knowledge" to somewhere between 70% and 100% "knowledge-full"? In fact, there seem to be a paradox between the 70% requirement to pass a course and the minimum requirement for a student to show a 15% improvement between the pretest and the posttest. According to the city schools minimum requirement policy, a student scoring 10% on a pretest and scoring 25% on the posttest would meet the minimum improvement requirement of 15%, but the same student would still fail the course. This paradox suggests that the minimum improvement requirement is aimed at evaluating not only the progress of a student, but also the quality of the instructor. Indeed, in order to perform adequately, the instructor has to obtain an improvement of 15% among the students, even though this does not insure that all students will pass the course.

7. Limitations and future research

This study clearly showed that it is possible to improve by a margin much greater than 15% with technology integrated foreign language classes. However, some caution needs to be addressed. For instance, the students participating in the seventh grade trilogy program were selected based on their prior high academic performance. The eighth grade level one students, for the most part, also come from the seventh grade trilogy program. Some no trilogy students have been added to the eighth grade level students, but those additions were also done based on their overall high academic performance. As a result, one could argue that the drastic increase between the pretest and the posttest scores in this study was impacted by the existing groups were made of high achievers. This assumption may be reinforced by the fact that the eighth grade students - among which ones some were not issued from the seventh grade trilogy program - show a slightly lower increase from the pretest to the posttest when compared to the seventh grade all-trilogy students. However, caution must be shown here, because the tests used were different for the seventh grade group and the eighth grade group. In the end, even though the curriculum is different for seventh and eighth graders, the increase in scores is almost similar. It can be said that the technology-integrated foreign language courses at the public rural middle achieve the district goals for over 90% of its seventh and eighth grade students.

Nevertheless, it is difficult to assess the scope of extent to which the infusion of technology can explain the results obtained. Further research needs to be done to compare groups of students in a high technology-integrated language course versus students in a low technology-integrated language course. In addition, as this study suggested, a technology-integrated course leads to high performance among the majority of students. Therefore, it should be noted that depriving a comparison group of technology in the pursuit of unequivocally asserting the positive impact of technology might sound unethical. Because it has now been established that the use of technology brings high-yields results, a different approach is necessary to conduct further research to determine which technologies have the most impact on learning. For instance, future research could focus on comparing the impact of different types of technology programs on different devices such as desktop computers, laptops, tablets, e-readers, interactive whiteboards, smart T.V.'s, and clicker response systems etc. Other future research could center on cloud-based software and programs that allow collaboration and sharing such as Google Drive® or Evernote®. Existing and emerging technologies have the potential to increase problem solving skills, promote creative and critical thinking, help decision making and responsibility taking among students. Finally, another arena of technology that might have a tremendous impact on learning, and thus deserves more research, is assistive technology for students with disabilities.

8. Conclusion

This study used city schools district's criteria and compared students' scores and percentage of students scoring at 70% or above in the technology-integrated foreign language program. If significantly more students scored at 70% or above, that would give a hint on the quality of the foreign language program. Similarly, if the foreign language classes scored significantly higher than 70%, the quality of the program would be further reinforced. With the increasing importance of foreign language learning across the nation, especially in a public rural middle school level, the evaluation results of this study open up a new line of research on the effectiveness of technology-integrated foreign language learning

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