ACTION RESEARCH

The Integration of Technology in a Spanish Classroom

K. Benjamin (2012)
Introduction

“Technology is revolutionizing education at all levels of the teaching and learning process” (Moore, 2001, p. 317). It has become central in today’s world. Technology is increasingly used in schools, but the question must be asked; what impact is it actually having on students’ learning?

The students of the third form Spanish class used in this study are all students previously taught by the researcher. However, at the beginning of this year (2011/2012) the researcher started using technology significantly in the classes and noticed that the students seemed to be keener about the class and also about their work. This led to the question of whether the use of technology affected the motivation and by extension, academic achievement, of the students and if so, how were these affected?

According to Erben and Sarieva (2008, p.17) “the use of technology in the classroom can increase motivation, decrease anxiety, foster more student-centred activities, and provide students with authentic materials and audiences.” This could possibly lead to improved academic performances. Blake (2008) states that if technology is cleverly designed and properly implemented into the curriculum, it can have a vital role to play in augmenting opportunities for second language learners to receive target-language input, which is a critical factor of the second language acquisition process. He however cautions that “the mere use of technology by itself will not improve the curriculum” (p. 9). It is evident that much research has already been done in this area and this subject continues to generate interest.
This action research project will focus on the following problem statement and research questions:

**Problem Statement**

The purpose of this study is to investigate the impact of the use of technology on the motivation and academic achievement of third form Spanish students.

**Research Questions**

1. What is the impact of the use of technology on the level of motivation of third form Spanish students?
2. How does technology use affect the academic performance of third form Spanish students?
3. What are the students’ attitudes towards the use of technology in the teaching learning process?

**Definitions of terms**

Technology – “Technology is best viewed as a robust set of instructional tools that help you accomplish the objectives of the teaching-learning process” (Lever-Duffy and McDonald, 2011, p. 26)
“Technology is a mediational tool that enables learners to expand their oral expression, acquire new language, learn about cross-cultural perspectives, and explore new content” (Shrum and Glisan, 2010, p. 453)

For the purpose of this study, technology will be taken as ‘the wide range of modern electronic methods and tools which can be used to support learning’.

Motivation – “Motivation can be defined as forces or drives that energize and direct us to act as we do” (Moore, 2001, p. 222).

Motivation may be intrinsic or extrinsic.

“Intrinsic motivation is what learners bring to the learning environment, that is, their internal attributes” (Moore, 2001, p. 222)

“Extrinsic motivation originates outside the individual and is concerned with external, environmental factors that help shape students’ behaviours” (Moore, 2001, p. 222)

For the purpose of this study motivation will be taken as ‘the desire, interest or drive to invest effort in learning activities in order to progress’.


For the purpose of this study, academic achievement will be taken as ‘the accomplishment of a satisfactory performance in tests during studies’.

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Literature Review

The question of the impact of technology on students is not novel. Much research has been done in recent years on this topic, particularly with the advent of such rapid technological advancements. The research done for this project, examined a variety of literature on the topic of technology, motivation and student achievement. It was found that researchers have posed some interesting questions on this topic. Bitter and Legacy (2008, p. 142) for example, ask:

“Do computers make students smarter? How do actual classroom teaching and learning behaviours alter as a result of introducing technology to the curriculum? Is this technological revolution really good for our children, or is this just education’s attempt to stay with the times?”

As pointed out by Jhuree (2005, p. 467) “much has been said and reported about the impact of technology in education”. Jhuree emphasises that much research has been conducted throughout the world to evaluate the positive effects of technology on learning, and to investigate the kind of enhanced learning environment that technology provides. The diverse findings of research reveal that the integration of information and communication technology (ICT) has been a contentious issue.

The review of literature presented here will critically examine some varied perspectives under the themes: benefits of technology use, challenges and dissenting views on technology use, technology and motivation and academic achievement.
Benefits of technology use

Researchers and practitioners have recognised that technologies provide great potential for foreign language teaching and learning. Technology-enhanced classrooms have been found to promote discovery learning, learner autonomy, and learner-centeredness.

Technology allows for access to authentic materials, and especially via the internet, foreign language learners can have more and faster access to authentic materials from the target culture and there are more opportunities for learners to have authentic conversations with native speakers in the target culture, which enable language learning in a true cultural context (Erben and Sarieva, 2008).

Zahao (2005) in O’Hara and Pritchard (2011) highlights the fact that technology can be used to enhance language acquisition since multimedia presentations (video, images, sound and text) can create stronger memory links than text alone. Zahao also emphasises the enhanced authenticity that video and the internet provide, with context-rich linguistic and culturally relevant materials, along with meaningful and authentic communication opportunities through e-mail, chat rooms and other digital means.

These views are supported by Moore (2001, p.323) who points out that through technology teachers “can bring the outside world into the classroom”. Moore (2001) further lists some of the benefits of technology, stating that it emphasises active learning, responds to different learning styles, enhances collaborative learning, increases individualised learning and self-paced study and encourages greater student independence.

The real essence of technology integration in the language classroom therefore is that “technology mediates language learning by forming a bridge between the authentic world and the classroom.”
the language learner” (Shrum and Glisan, 2010, p. 453). According to these writers, the purposeful use of technology can allow teachers to present students with living and real cultural elements via authentic audio, video or the Internet.

Several other writers (Negroponte, 1995; Papert, 1996; Edison cited in Saettler, 1990) present a strong case in favour of technology claiming that it will change the educational landscape forever and in ways that will engender a dramatic increase in the performance of learners. Additionally writers like Apkan (2002) and Haddad (2003) are convinced that if technology is properly integrated, it has the potential to enhance the teaching and learning process.

**Challenges and dissenting views on technology use**

While the benefits of technology are apparent, there are some dissenting views and some challenges of technology that were highlighted in the literature.

At the most basic level, there is the challenge of technical difficulties with technology which frustrates the teacher and students significantly. There is also the risk of technology becoming a mere “cybersitter” for students if technology is not used with purpose. Another challenge that may concern foreign language teachers is classroom control. In the traditional classroom, the teacher is the centre of teaching and learning. However, where there may be a poorly designed technology-enhanced classroom, there may be a greater risk of students visiting irrelevant Web sites and therefore not achieving what they should have by the end of the class, if there is not a pedagogically sound teaching plan and clear class objectives and general classroom procedures established (Erben and Sarieva, 2008).

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In addition, while much research shows that the integration of technology facilitates a richer learning experience, some students become just as bored with technology as they do with the traditional teaching (Bitter and Legacy, 2008). This may be due to repetition of the types of technology used during the lessons, or using technology simply for the sake of technology, which may amount to replacing the traditional white board or chalk board with an electronic board, serving the same purpose, if the technological teaching tool is not effectively designed.

Oppenheimer (1997) is not convinced that technology brings the pedagogical benefits claimed. In his article “The Computer Delusion”, he suggests that “there is no good evidence that most uses of computers significantly improve teaching and learning”. According to Oppenheimer, many of the studies which claim to prove that computers enhance student achievement significantly are more anecdotal than conclusive, lacking the necessary scientific controls to make solid conclusions possible. This is because the circumstances are artificial and not easily repeated, results are not statistically reliable and other influences such as differences in teaching methods are not controlled.

Other writers such as Cuban (1986) and Postman (1993) concur with the above mentioned views.

Therefore, it is clear that not all are in favour of technology integration in education and it is not without its limitations.

In spite of all of this, technology seems to impact positively on the extrinsic motivation of students and this will be examined in the section which follows.
Technology and motivation

“Motivation is regarded by experienced and inexperienced teachers alike as a prerequisite for effective learning and the greatest challenge that many teachers face is to make their students want to learn” (Petty, 2004, p. 43). According to Petty, “if you know how to motivate students, you can hugely increase their learning rate”. There are different kinds of motivation, for example, intrinsic and extrinsic motivation and there are a number of different factors which influence motivation such as natural motives, classroom environment, instructional strategies, and stimulus variation (Moore, 2001). Technology is one factor that may impact on student motivation.

Stepp-Greany (2002) reports that technology enhanced classrooms increase students’ motivation because of the interactive nature of the activities. A study carried out in Turkey, by Ilter (2009) entitled the “Effect of technology on motivation in EFL classrooms” revealed that the use of technology in the classroom provides a meaningful and interesting process in language learning and students can be more motivated. The study also found that females want to use technology more than males in the classroom.

According to Mark Prensky (in Erben and Sarieva, 2008) the schoolchildren of today are the digital generation, who spend hours interfacing with technology daily. Several writers (such as Mistler-Jackson and Songer, 2000 and Skinner and Austin, 1998) have claimed that the use of technology increases motivation. The motivated learner is one who is willing or eager to invest effort in learning activities and to progress. Ur (1991) points out that it is possible to arouse interest and in so doing motivate learners by making tasks and lessons interesting. This may be done by carefully planning stimulating topics and tasks and also by using technological aids,
such as visuals, games and entertainment like songs or video clips. However, one must still consider that there are other factors which impact on motivation such as the teacher’s own enthusiasm and eagerness.

Based on the literature reviewed one can conclude that technology could be an element of extrinsic motivation for students if used in an effective manner.

**Academic achievement**

Ur (1991) points out that various studies (for example Gardner and Lambert, 1972; Gardner, 1980) have found that motivation is very strongly related to achievement in language learning. According to Ur, teachers must be aware of the “sheer importance of the factor of learner motivation in successful language learning” (p. 275).

A study carried out by Christian Oriahi (2009) in public secondary schools in Edo State Nigeria, about the influence of motivation on students’ academic performance found that students need to be motivated in order to perform better in their academic pursuits and that there is the need to address both intrinsic and extrinsic motivation.

Another study carried out in Tanzania in 2005 on “The influence of motivation on secondary school students’ performance in English Language” by Gilman Nyamubi, reports similar findings. This study is interesting and can be linked to the Barbadian context since English Language is taught from primary school and is actually the language of instruction in school, although it is not the first language of most of the students, who typically speak ‘Bajan’ dialect. The study revealed that “the relationship between students’ motivation to learn English
and their performance in the subject was found to be strong and positive” (p.106). It was also found that many of the students’ motivation to learn English came from the fact that they recognised a need to learn English in order to progress in society, since English is regarded as a ladder to success both academically and professionally and for wider communication. Based on the findings of this research, the correlation between motivation and academic achievement cannot be denied.

James Kulik in Baker and O’Neil (1994) used a meta-analysis to aggregate the findings from more than 500 individual research studies of computer-based instruction and concluded that on average, students who used computer based instructions scored higher on tests of achievement compared to students in the control conditions without computers. He also reported that students learn more in less time when they received computer based instruction and that students like their classes more and develop more positive attitudes when their classes include computer based instruction. Therefore a relationship between technology and achievement is purported.

On the other hand, some writers argue the contrary. According to writers such as Larry Cuban (2011), while hardware and software may initially engage students, that engagement and its effects eventually deteriorate and increased academic achievement remains out of reach. According to Cuban in McCrummen (2012), “there is hardly any research that will show clearly that any of these machines (the interactive white board or other high-tech tools) will improve academic achievement”.

It is evident from the range of perspectives discovered in the literature reviewed that the impact of technology on motivation and academic achievement is ambiguous. Some researchers
have argued that there is a correlation, while others have argued that there is no significant difference made with the use of technology.
Methodology

Participants

The participants in this study are third form Spanish students of the Christ Church Foundation School. These students are thirteen to fourteen years old. The class consists of thirteen girls and eight boys. These students have been studying Spanish for two and a half years.

NB Seventeen of the twenty-one participants completed all of the assessments administered in this study. There was one student who was absent for most of the term due to illness and there were three other students who were absent for at least one or two of the assessment exercises. Consequently the assessment results for seventeen students were used.

Instruments

The instruments used in this study are: tests, questionnaires and focus group interviews.

Tests

There were four formative assessments administered during this research study. These sought to test the students at the end of a segment, taught alternately with and without the use of technology.

The first two assessments were descriptive exercises, where students were required to write a description in the target language (Spanish) of persons’ dress based on pictorial stimuli.
One of these dealt with persons wearing casual clothing and the other one dealt with persons wearing school uniform. These exercises were both marked out of ten. See Appendix G for samples. The lessons prior to the assessment exercise requiring students to describe casual clothing included the use of technology. The lessons prior to the assessment exercise requiring students to describe a school uniform were taught without the use of technology. The other two assignments were classroom tests based on the topic of shopping for clothing and shopping for shoes. The format of these two tests was exactly the same, consisting of three sections: (a) situational responses, (b) multiple choice selections and (c) a guided contextual dialogue. The tests were both marked out of thirty. See Appendix G for samples. Prior to the test on shopping for clothing, the lessons were taught with the use of technology integrated, whereas prior to the test on shopping for shoes, no technology was used in the instruction process. The purpose of this was to try to ensure that conditions for these two sets of assessment were as close as possible, with the only variable being the presence or the lack of technology in the instruction process.

**Questionnaires**

A short questionnaire was developed which consisted of two items of general information, followed by eight questions requiring an either/or answer and one open ended question. See Appendix I for a sample. The purpose of this was to try to solicit necessary information especially relating to the impact of technology on the level of motivation and the attitude of students towards the use of technology.
Focus group interview

A focus group interview was held where the researcher asked the group questions similar to those on the questionnaire but with the aim of soliciting some reasons that were not necessarily expressed on the questionnaire. See Appendix J for sample questions from this interview.

Procedure

At the start of Term 2 (January 2012) an instructional plan and lesson plans (see Appendices E and F respectively) were carefully created for the six week period over which the action research was to be carried out. These plans included topic segments where technology was specifically integrated during the teaching-learning process (Describing casual clothing and Shopping for clothing) and other topic segments (Describing your uniform and Shopping for shoes) where technology was deliberately omitted from the lessons.

Four assessment exercises were created. Two were in class assessment exercises based on writing descriptions from pictorial stimuli and the other two were tests on shopping for clothing and for shoes. The format for the two sets of assessments was similarly designed so that the two in class assessment exercises could be compared and the two tests could be compared. (See Appendix G)

At the ending of the six week research period a questionnaire was administered to the students (See Appendix I). Following this, a focus group interview was conducted to
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substantiate the findings from the questionnaire. (See Appendix J for a sample of questions posed).

The results from the assessment exercises, the questionnaires and the focus group interview were then compiled.
Data Analysis

Results

Assessment results

There were four formative assessment exercises carried out during the six week action research. Two of these assessed the students’ performance after lessons in which technology was used and the other two assessed students’ performance in lessons where technology was not used. The students’ results from these assessments are shown below in Table 1.

<table>
<thead>
<tr>
<th>Student Code</th>
<th>Technology used during instruction</th>
<th>No technology used during instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assessment 1 %</td>
<td>Assessment 2 %</td>
</tr>
<tr>
<td>A</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>B</td>
<td>90</td>
<td>70</td>
</tr>
<tr>
<td>C</td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>D</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>E</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>F</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>G</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>H</td>
<td>90</td>
<td>70</td>
</tr>
<tr>
<td>I</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>J</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>K</td>
<td>40</td>
<td>90</td>
</tr>
<tr>
<td>L</td>
<td>80</td>
<td>70</td>
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<td>M</td>
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<td>N</td>
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</tr>
<tr>
<td>O</td>
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<td>60</td>
</tr>
<tr>
<td>P</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Q</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

Table 1

A statistical analysis was carried out on these scores and the results of this follow.
The overall results of both assessment exercises show a slightly higher academic performance in the assessment exercises where technology was used as compared with those in which technology was not used – Figure 1. In the first pair of exercises, for the technology assessment, the mean performance is 76%, while the no technology assessment has a mean performance of 73%. In the second pair of assessment exercises, the mean for the technology lessons’ assessment is 59 %, while for the lessons without technology the mean is 54%.
In the first pair of assessment exercises shown in Figure 2, thirteen of the seventeen students (76%) scored the same or higher in the assessment exercises where technology was used. For those who scored higher in the assessment without technology, the difference in score is generally not great, with the exception of one student, K, who scored significantly higher in the assessment without technology than in the one with technology.

![Comparison of test scores with and without technology](Image)

In the two tests, shown in Figure 3, eleven out of seventeen students (65%) scored higher in the tests where technology was used. Once again, student K scored higher in the test without technology. The other students who scored more in the test without technology did not score significantly more, except students B and C, who scored in the 60s in the test with technology and in the 80s in the test without technology.
Questionnaire results

The students’ responses to the questionnaires reveal that overwhelmingly, the use of technology is favoured. There were 20 respondents (7 males, 13 females) to the questionnaire and the results of these are shown below.

How was your academic performance in Spanish in 1\textsuperscript{st} and 2\textsuperscript{nd} form?

<table>
<thead>
<tr>
<th>Very Strong (above 75%)</th>
<th>Strong (60-75%)</th>
<th>Fair (50-60%)</th>
<th>Weak (below 50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Responses to items 1 to 6

<table>
<thead>
<tr>
<th>No</th>
<th>Questionnaire items</th>
<th>Percentage (%) Responses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Instruction preference</td>
<td>When technology is used</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Students learn more</td>
<td>When technology is used</td>
<td>95</td>
</tr>
<tr>
<td>3</td>
<td>Classes are more interesting</td>
<td>When technology is used</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Classes are more enjoyable</td>
<td>When technology is used</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>Students are more inclined to work</td>
<td>When technology is used</td>
<td>85</td>
</tr>
<tr>
<td>6</td>
<td>Students more motivated to speak</td>
<td>When technology is used</td>
<td>75</td>
</tr>
</tbody>
</table>

Responses to items 7 and 8

<table>
<thead>
<tr>
<th>No</th>
<th>Questionnaire items</th>
<th>Percentage (%) Responses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Did you get bored of having technology in class?</td>
<td>Yes</td>
<td>15</td>
</tr>
<tr>
<td>8</td>
<td>Did your attitude to Spanish change due to the use of technology?</td>
<td>Yes</td>
<td>50</td>
</tr>
</tbody>
</table>
Sample of reasons given for item 8:

YES

“I like the classes more with technology because they are more fun.”

“When technology is used it makes me want to participate more in classes.”

“Technology makes classes more fun and it helped me to remember lots more.”

“My attitude changed because the use of technology in Spanish made it more interesting and fun.”

“Before I only chose Spanish because it was the easier of the two languages but now I pay more attention.”

NO

“I had always enjoyed my Spanish classes.”

“Even though I enjoyed the technology being used my attitude to Spanish was always that it was fun because of the teacher that we have; she makes the lessons fun and enjoyable.”

“I always enjoyed Spanish therefore I always had a good attitude towards it.”

“It was the same with or without technology.”

“It did not change my attitude because I have a natural love for Spanish and my awesome teacher makes the class fun either way.”

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Discussion

The results obtained from this study show that while technology integration is generally preferred by the students, and seems to play a role in their extrinsic motivation, it does not seem to have a very significant impact on their academic achievement or necessarily alter their attitudes towards the subject.

This research project sought to address firstly the question of what is the impact of technology on the level of motivation of third form Spanish students. Based on the results of the questionnaire and the focus group interview, one can conclude that technology does seem to motivate students since 85% of the students stated that they are more inclined to work when technology is used in the lesson and 75% stated that they are more motivated to speak when technology is used. Further feedback from the students revealed that the use of technology in instruction was largely preferred and some students stated that having technology used in a lesson encouraged them to participate more in class as they found the classes more interesting, enjoyable and fun. These findings from the questionnaire are supported by some researchers (such as Erben and Sarieva, 2008, Stepp-Greany, 2002 and Ilter, 2009) as discussed in the literature review. The literature also pointed out that a small minority of students are not impacted by technology in the same way as others as may find the use of technology in a lesson boring or as hindrance to their learning, as explained by Bitter and Legacy (2008). In this study 15% of the students indicated that they got bored with technology being used in the lesson, while 5% indicated that they felt they learnt more without the use of technology in a lesson. This seems to be in keeping with research findings, since not every student will appreciate the same pedagogical tools. This may be due to different learning styles and multiple intelligences.
The next question addressed in this research project is how technology use affects the academic performance of third form Spanish students. The assessment results reveal that overall the use of technology resulted in a slight improvement in the students’ academic performances versus the absence of technology in instruction. This is seen in the 76% mean percentage in the assessment with technology versus the 73% mean in the assessment without technology and similarly the 59% mean in the test with technology versus the 54% mean in the test without technology. Researchers such as Kulik (1994) concur with these findings. However, it must be pointed out that these differences are not great and thus it seems that although there is a noted improvement with the use of technology, it is not major. This is a perspective also argued by some writers such as Oppenheimer (1997) and Cuban (1986), who suggest that technology does not really bring significant pedagogical benefits.

Nonetheless one must acknowledge that these results may be influenced by other factors, such as a student’s own intrinsic motivation or the amount of after school study put in by an individual student. That is to say, that despite the use of technology in class, a student must still spend the necessary time studying or reviewing his/her work in order to perform well in tests or other assessment exercises. The literature reviewed highlights the fact that motivation is linked to achievement and therefore, where there are other factors impacting on students’ motivation, or lack thereof, these must be taken into consideration. One can conclude then that the use of technology alone cannot be the sole determining factor impacting on the academic achievement of students.

It should be noted that there was one student, student K, whose results stood out as showing the reverse. Student K, a male, consistently performed better where technology was not used in the lessons. In fact, student K stated that he learned more and was more inclined to work
when technology was not used and that he found technology to sometimes be quite distracting for him. This student may appear to be an exception to the general sentiments of most students but his assessment results are consistent with his comments. Research carried out by Ilter (2009) could possibly explain this since this researcher reported finding that females wanted to use technology more than males in the classroom. Since this group consisted of more females than males, it would be difficult to make any definitive conclusions on this and based on the questionnaire and assessment results the males do not stand out as collectively differing in their opinions or performance in terms of the use of technology to the females.

For some of the other students who scored higher in the assessment or tests without technology, for example, students B and C (two females who scored higher in the tests without technology), it may simply have been a matter of better preparation for the second set of tests (which were the tests without technology), motivated by an unsatisfactory performance in the first test (which was the one with technology). For students B and C, who are very strong students, they would have been dissatisfied with their performance in the first test and would have put in an extra effort to prepare for the second test and this may explain their significantly better performance in the second tests, which is independent to any use or non-use of technology. It appears that for the very strong students, many of whom are quite intrinsically motivated, the use of technology does not necessarily have any major impact on their academic performance. Many of these students consistently scored high in both sets of assessments, as they are the type of students who always aim high and seek continual improvement, regardless of extrinsic factors such as the use of technology.

In terms of the third question addressed in this research project, the students’ attitudes towards the use of technology in the teaching and learning process, the views appear to be

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mixed. The questionnaire results show that half of the respondents stated that their attitudes towards Spanish changed due to the use of technology while the other half stated that their attitudes did not change. An examination of the reasons given, which must be linked to the type of student and their typical academic performance reveals that those students stating that their attitude did not change, were typically students who considered themselves to be strong or very strong academically and already had a good attitude towards Spanish, already liked Spanish or liked the teacher and therefore their attitude did not change due to the introduction of technology in the lessons. The other 50% of the students stated that their attitude changed because they found the classes to be more fun and interesting and made them want to participate more. This indicates that the use of technology had a positive impact on the attitudes of these students towards the subject.

Overall these research findings are in keeping with other research done on this topic. Kadek (2005) and Waxman et al. (2002) in Bitter and Legacy (2008, p. 148) make the following point: “The results from research into the effects of technology on learning are mixed. Whereas a large proportion of researchers are able to demonstrate positive academic results, others have shown no effects or even slightly negative effects on achievement.”

The students enjoyed having technology integrated into their lessons and stated that this made the lessons more interesting and made them more inclined to work. This is supported by much of the literature. For example, Erben and Sarieva (2008) explain that technology-enhanced classrooms are more attractive and that students are motivated by activities that involve technology, especially in the educational arena. Some researchers (eg. Stepp-Greany (2002); Mistler-Jackson and Songer, 2000 and Skinner and Austin, 1998) have claimed that the use of technology in the classroom can increase motivation. However, for a small portion of students,
as revealed in this study (15%), students sometimes become bored with the technology in the classroom.

The findings of this study reflect a mixture of perspectives; some positive and some negative. Nonetheless it is undeniable that there seems to be some correlation between technology and motivation, and a link between motivation, technology and academic achievement.
Summary

Based on the research carried out, one can surmise that technology does have an impact on the motivation and academic achievement of the third form Spanish students studied in this research project. However, it must be stated, that the impact is not very significant and while technology integration is generally preferred by the students, and contributes in a small part to their motivation, its use does not significantly alter the academic achievement of the students or their attitudes towards Spanish.

The implications of the findings of this study are that it would be prudent to promote an increase in the use of technology within the modern Foreign Language classroom since the benefits of technology integration manifestly outweigh the disadvantages. It must be reemphasised however, that technology integration needs to be done in a purposeful way and it need not completely replace other pedagogical tools which are still useful in the classroom, since educators must be constantly cognizant of different learning styles or preferences and multiple intelligences of students.

This research study was not without its limitations and it should be mentioned that this study was only carried out over a six week period, and thus such a limited time could have limited reliability of the results attained. In addition, it is evident that these results are in the context of a specific group of students with specific learning conditions and therefore cannot be taken as an absolute truth but rather as one indication of the impact of technology.
Recommendations

This study looked at the integration of technology in a Spanish classroom for third form students. There are a number of other areas of study that could be recommended to aid in complementing this study. Some of these suggestions can be found below.

1.) It may be useful to examine how different types of technology may yield different results or motivate students differently. That is to say, that it may be worth investigating whether certain types of technologies may be more beneficial than others in relation to academic performance and motivation of students.

2.) In addition, it may be worthwhile to examine specifically the impact of technology on improving listening skills of students since technology allows for greater interface with the target language through various media.

3.) The impact of technology on different genders is another area that should be considered for research, since this was hinted at in this study but not investigated in any great detail.

4.) The impact of technology on different age groups could also offer an interesting study since different age groups may be motivated differently by technology or by particular types of technology.

5.) It would be interesting to have this study carried out on a larger scale in the Barbadian context or even in the wider Caribbean among schools of different academic levels so as
to see if the impact of technology varies for students of different academic abilities. It could also be carried out using students with learning challenges such as dyslexia.

6.) It may also be useful to examine the other variables that impact on technology and which may influence or limit the effectiveness of technology as a factor affecting motivation and academic achievement such as teacher effectiveness or home environment.

7.) As technology advances, there are increasingly smaller technological gadgets it may be interesting to investigate the benefits of students using devices such as the Kindle, iPod, or cellular phones in the classroom, as a part of the teaching-learning process, or for homework exercises.
References


http://www.theatlantic.com/past/docs/issues/97jul/computer.htm

**K. Benjamin** (2012)


