



Abstract

Technology has advanced noticeably, nowadays. People even children purchase and use different technological devices all the time. That is why the lack of applied technology in schools, especially in the teaching of English as a Foreign Language (henceforth EFL), is evident. Through the compilation of information gathered by means of surveys, an interview and the reading of literature, we have seen the interest that students have in learning English with Information and Communication Technology (henceforth ICT) tools; specifically, with Interactive Whiteboards (henceforth IWB). Also, issues regarding students' interest are tackled along this project with the purpose of applying this resource appropriately. Additionally, teachers' reluctance to the use of technology is discussed in order to lower facilitators' resistance to introduce technology in their classrooms. Therefore, it is important to remark on its benefits to motivate school principals to invest money in education.

Make your students' learning memorable, make your teaching easier for you, and enjoyable for everyone. – The authors

Key Words: Interactive Whiteboard, Technology, Education, Learning Styles, Meaningful Learning, Reluctance, Perceptions, Motivation, Engagement. ICT, IWB.



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CARRERA DE LENGUA Y LITERATURA INGLESA

“ICT: Interactive Whiteboards in an EFL Classroom”

Tesina previa a la obtención del Título de Licenciada en Ciencias de la Educación en la Especialización de Lengua y Literatura Inglesa.

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Dedicatory

It is essential to dedicate this project to my mom who has supported and motivated me to achieve every goal. To my dad who has been my inspiration and my model as a teacher. To my “brow” who is my friend and helper. To my cousins Bryan and Karen, my sweet love. Also, to my boyfriend, who is my life!

Gabi

This work goes to my parents and sisters who have been my inspiration and support along my life and to my big love, Alejandro.

Vero



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Introduction

Technology is nowadays part of people daily lives; people acquire technology to perform different activities such as communication, work and entertainment, to mention a few. Therefore, in different professional fields we can find state-of-the-art technology, which eases people and professionals' responsibilities. However, in the educational field the implementation of technology has taken a slow process due to some facts. Among the most important ones are the economical fact and teachers' reluctance to the use of it. Moreover, it is necessary to research about the benefits that the use of technology can provide to students, teachers and schools. We also want to show the reasons to purchase this device, and the necessary training its implementation requires. In order to motivate and increase facilitators' interest some different topics such as interactive classroom, and effective IWB teaching will be developed in this paper to realize and reflect on the different methodologies, techniques and material that can be used thanks to ICT tools specifically interactive whiteboards.

Aside from discussing about the motivation and engagement students reach when working with technology, it is interesting and important to mention teachers' attitude as regards with technology. As Daniela Roza cites in her monograph "there are professionals who fear technology and even being aware of its importance and having some resources available, resist using these tools in the classroom and, as a result, do not take advantage of all varied activities



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technology offers.” (Starr qtd. in Roza Martin 12). Therefore, the necessity of analyzing teachers’ reluctance and students’ perceptions towards technology.



Chapter I: The problem

1.5 Topic

This research aims to reflect on how important it is to use ICT resources – IWB- in an EFL class in order to improve the learning process.

“ICT; Interactive Whiteboards in and EFL classroom”.

1.6 Description of the problem

Students feel less motivated and engaged to participate in the EFL classes since their traditional classes do not respond to their needs and interests. Therefore, there is a lack of applied technology in the classroom.

1.7 Justification

Technology is everywhere nowadays. In hospitals, stores, factories, among others there is state-of-the-art technology. Society is living many changes and advances as regards with technology. Children use X-box, Wii, PSP, iPod, iPhones, and computers every day, which demands a change in education, as well.

In education, the implementation of technology has taken a slow process, which is due to some limitations such as the economical factor, teachers' resistance to change their methodologies. On the other hand, teachers seem to complain all the time about students' attitude. Children will not change; teachers are the ones who should look for different ways to reach learners. Students need to be motivated, they need to be engaged, they need to feel they are not only a part of the process, but also the main participants of it.



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Therefore, there are very important reasons to carry on this research. First, we want to analyze the advantages of using an Interactive Whiteboard during an EFL class in relation to meaningful learning and classroom management. Another important and interesting reason is to identify the teachers, students, and IWBs' roles in an interactive classroom.

By using an IWB, teachers and students can have more learning tools such as videos, pictures, music, among others, which will allow students to learn in different ways.

1.8 Objectives

General objective

To study the benefits that Interactive Whiteboards offer to the teacher and students in an EFL class.

Specific objectives

- To research about the advantages that IWBs offer in order to get a meaningful learning.
- To analyze pedagogical interactivity in the classroom in order to state its importance in a virtual environment; thus set up the roles that both teachers and students take in an interactive class.



Chapter II: Literature Review

3.2. Interactive Whiteboard

3.2.1. Definition

In the course of time, people's lifestyle has changed due to the advance of technology. Professionals, students, parents, children use technology every day for different purposes such as communication, research, learning, enjoyment, among others. There is a great spectrum of technological tools, such as computers, mobiles, tablets, USB flash drives, IWBs, video games to mention a few. The latter mentioned tools have eased people's activities. Nowadays, they have become a necessity for us as we are using them constantly. Some people cannot leave home without their cellphones, for instance.

Then, today's students belong to this technological era, which demands teachers and schools to use technology in their classes. As the authors Shelly et al conclude, technology catches children's attention, which allows teachers and pupils to have a new, interesting, and active class environment (11). That is why we want to focus on the use of interactive whiteboards in an English Foreign Language class in order to point out the benefits of incorporating them into the classroom.

As Daniela Roza Martin states in her monographic research *Incorporating Technology among Young Learners* the use of the Interactive Whiteboard in the English Classroom "... technology can lead to different ways of teaching." Students reach a meaningful learning with dynamic and interactive classes



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where they participate and collaborate.” In addition, Roza claims this thought, “As Tudor ... explains rethinking our practicum is necessary because any changes that happen in the way students communicate and interact in the world affect the way teachers are expected to teach their students” (qtd. in Roza Martin 12). It is totally agreed as we consider that technology should go along with education. Therefore, it should be a didactic resource for both teachers and students. In spite of all the advances in technology, the majority of teachers continue using the board, paper, and radio as their main resources.

First, it is important to include a definition of what an Interactive Whiteboard is. In the advertisement “mimio® Vision: Interactive Classrooms for Today’s Students and Teachers” published by Touchboards, the authors define Interactive Whiteboard as “... the hub of the interactive classroom.” They also add the following:

A large, touch-sensitive display that connects to a computer and a projector, the interactive whiteboard is like a giant computer screen that users touch to operate — similar to a touch-screen kiosk. In classrooms, the whiteboard is typically mounted to a wall or on a floor stand, offering a range of functionality. Teachers can take lessons they’ve created on their computer (including any image, text, audio file, or video file available on the Internet) and project them onto the large-format screen. Teachers and students can then interact with the whiteboard using a digital “pen,” finger, or other device; they can pull down menus; drag-and-drop text,



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images, and sounds; hide and reveal images and text; move and open files; write, highlight, and save annotations; and rotate, flip, and mirror graphics. (Touchboards 4).

3.2.2. *Origins*

After the previous definition of Interactive Whiteboards, it is worth explaining the origins of this device. According to Betcher and Lee, in their book *The Interactive Whiteboard Revolution*; the development of the chalk blackboard occurred in 1801, and it became part of the learning process. This tool was part of every traditional classroom. Even now, boards are used all the time. After the introduction of this tool, a new gadget was developed, the *Interactive Whiteboard*. This instrument provides teachers not just a new *way* of teaching, but also a new teaching nature (1).

That means that teachers need to be able to adapt themselves to work with new technologies, as they did when the traditional blackboard appeared. Teachers need to be prepared to use any innovative device that comes out in order to improve the learning process and student's attitude towards the learning process. This introduction must change teachers' way of delivering a class as well as thinking.

The authors Betcher and Lee mention that this gadget can be used every day, by every teacher, in every subject. This may become the *traditional* and *main* device in a classroom. This gadget can move education from a paper-base modeled education to a new technological integrated one. Moreover, the



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benefits of digital education can be brought by the proper use of this device; teachers need to observe the appropriate application of this new artifact (1).

This gadget will provide teachers a new way of teaching, and this gradually will provide an immense change in the learning process itself. Teachers are required to 'jump' from paper to technology properly. That is that they need to base their activities on technology. Not just to use the mean, but the intention of teaching. Thus, students will start interacting with their own context, the activities will pass the "paper barrier" to become digital. Then they will be part of the global and technological world they belong.

This interactive whiteboard provides sources to teachers to change their practice. They will be able to define new strategies to work in their classrooms. This is a device in the classroom which will allow the process to develop. For many teachers this will be just the "same wine, in old bottles" (Betcher and Lee 2).

Many teachers endorse the idea of *just a new tool*. However, studies demonstrate that the dynamics during a class will be different. The roles of the characters will probably change dramatically. Then, the changes in the results of teaching will be totally different because of the use of applied technology.

3.3. *An Interactive Classroom*

A classroom environment, which gives the opportunity to interact among the students, the teacher and technology, is called an interactive classroom since it offers rich and didactic resources.



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The classroom allows teachers to manage different learning styles thanks to the technological tools ICT provides. In this way, it eases the acquisition of the “21st century skills,” which encloses “the ability to think critically, analyze information, comprehend new ideas, communicate, collaborate, and make the kinds of decisions necessary in today’s knowledge economy” (Touchboards 2). In addition, as they are exposed to many multimedia sources, they have the opportunity to give their opinions, analyze, comment, and ask about something they have seen, which is *interactivity* (2).

Other factors that play an important role in this classroom are motivation and engagement. In order to reach students and to have them engaged and motivated, the interactive classroom offers different tools such as videos, pictures, music, among others. Students can also play with the interactive whiteboard by touching it or using a special pen. Then, all those possibilities give pupils and teachers the opportunity to interact both physically and mentally to achieve the main goal, which is to have meaningful learning (Betcher and Lee 67).

3.4. Effective IWB Teaching

3.4.1. Eight Principles for Effective IWB Teaching

According to Betcher and Lee, for many professionals to face any new technological challenge becomes a huge problem. Therefore, anger, worry, anxiety, or indifference might arise. This happens when an institution makes the decision to incorporate technology into their curriculum without preparing their teacher staff (63). This situation is evident in our country when the *Ministry*



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of Education, in a trade with a company, provided public schools in precarious situations with IWBs. This situation proves that the whole educative system must experience a drastic change in order to be part of a technological world. In addition, the aim of ICT in education does not mean only the setting-up of devices, but the change of mind and strategy in the learning process.

Thus, the training and the attitudes that teachers need to develop to master an Interactive Classroom, pose a new point of view; which is more practical and easier to accomplish their teaching. To get a great performance, there are eight principles which allow teachers to have a better fulfillment while teaching with IWBs. These principles are (Betcher and Lee 63-76) .

- a. *Be proficient.* Microsoft determined that most users make use of just 10% of the set up capacity of its programs. According to the authors, for new teachers to overcome this inconvenience, teachers need to understand that there are a lot of coincidences in the usage of different brands. “The more intimately you know your software, the more confident, competent and creative you will feel about the whole IWB experience” (65). Thus interactivity becomes part of a daily classroom because of the use of advanced and interesting functions in the same applications that the software offers.
- b. *Be organized.* This point poses the physical arrangement in the classroom. All the gadgets must be settled in the correct and determined places. This distribution must be considered as a non-wire one. Additionally, this condition will provide teachers and students with



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the opportunity to move freely, while they access to all the devices in the classroom.

- c. *Be interactive.* This principle refers to the mental or physical interaction among the students and the contents, which must respond to children's curiosity. Education must be student-centered, because children need to develop long-life skills to be able to face with what life brings and what will bring to be part of this globalized world. The environment must not be focused on teachers themselves, but on students. The IWB is a resource for the whole class, so that young and adult learners can be part of the class by being *actors* of their learning construction. Finally, this process must be based on teachers' own reflection to work with a different strategy, allowing students to understand in deeper levels.
- d. *Be flexible.* Most teachers want to fulfill lesson plans during a class, in the way that they neat prepared. They are focused to reach planned learning outcomes and contents. Even though, they feel that children are not completely convinced about the new class they are experiencing. Being this the case, the flexibility principle recalls the importance of being enough prepared to improvise and start constructing knowledge with children by answering their inner curiosities.



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- e. *Be constructive.* This principle refers to the jump on from theory to practice by manipulating, touching, moving and playing with what they are learning. Subsequently, engagement will be part of the classroom.
- f. *Be open-minded.* This is characterized by the importance to recall teachers' willingness to learn from others.
- g. *Be willing to share.* Teachers can enrich their process by working and recycling sources and digital material. They can use the previously created material for other classes, and also to share it among other teachers.
- h. *Be prepared to plan.* Finally, this point refers to the holistic and integrated plan that must be made by the institution, and the complement that planning with technology takes place on it. The ICT implementation must be considered once the school has analyzed, detected, and solved profound problems regarding training in infrastructure.

To wrap up, it is important to remark on the fact that planning places an important role when incorporating technology into the classroom; otherwise, it will be just a tool that will not permit digital teaching, but a fancy innovation without any educative relevance.

3.4.2. *E-teaching*

In their book, Betcher and Lee, mention the resistance that education has had to technological changes and advances as a 'paradox' since schools' purpose is to prepare pupils for future societies. In spite of the rapid access



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students have to global network and the ability they have to use technology, classes still remain as traditional ones. Even teachers and society are conscious about this problem; things are not being done as they should be. In Cuenca, for instance, people sometimes make jokes saying, “Children nowadays come with incorporated chips.” It is a sample that people recognize and know children’s ability and interests about technology (47). However, these *digital students*, as named by Shelly et al (15), continue having classes as if it were ten or twenty years ago, where the teaching process seems to be ‘one-way experience’ that is, only the teacher talking and the students just absorbing information to be repeated in an exam (Betcher and Lee 47).

Then, after analyzing those situations, Betcher and Lee started looking for a solution. First, they describe the e-learning process, which they define as “learning using technology.” Therefore, they set up a definition for e-teaching, which “might be ‘the use of information and communication technologies to enhance the act of teaching”

Now, Betcher and Lee consider the Interactive Whiteboard as one of the best technological tools for the teaching process, due to the fact that it allows teachers and students to interact in a more real and natural way. “Writing, creating, designing, thinking, problem solving... [-which are 21st century skills- can allow students to] construct meaning for themselves in their own heads, in their own styles, as they work through these higher-order activities” (49).

As we can see, this tool provides a large amount of different and practicable activities where students are encouraged to do, to work, to



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participate, and to give their opinions; they are not in their desks just taking-notes or just solving exercises in their books. Sometimes teachers have the wrong idea that teaching to a group is to give a speech plenty of information in order to have them later doing some exercises. Whereas the purpose of teaching to a group is to make them think, reflect, and analyze by encouraging them to participate in different activities. In this way, they are the ones who build their knowledge or find out the way to do something correctly (Betcher and Lee 49).

However, an important factor is to know that technology is not enough for effective learning, but also “quality teaching.” A passionate teacher who loves and knows what he/she does inspires and motivates his/her students by being creative (49). A teacher, who really wants to teach, looks for different ways to reach students.

Additionally, the authors mention three phases that teachers usually go through when starting to teach with IWBs. The first one is “doing old things in old ways.” As the sentence mentions, teachers continue having their same classes and activities even though they have the equipment in the class. Some notes or diagrams are still done by hand on the board, lessons are not presented on the IWB, and lessons are not saved, to mention some aspects.

As a second phase “doing old things, but in new ways.” Teachers do the same things they used to do, but they project them using the IWB. There is a little improvement since facilitators use the Internet to share lessons, save



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lessons at the end of the class, present IWB activities rather than paper-based ones, among others.

Finally, “doing new things in new ways” where teachers have completely new ways to reach their students in order to make them find out knowledge. They use much more media –video, audio, digital pictures, animation and interactivity- to increase student involvement. The difference of this phase from the others is creativity teaching and innovative techniques, which through interactivity, help students reach a more meaningful learning (Betcher and Lee 50-52).

Teachers who have worked effectively with an IWB mention that this is not just one more tool for teachers as having another book or a different radio. It truly makes a big difference in the classroom as the quality of the learning process changes when making full and correct use of this new tool. Teachers can come up with new, interesting, and engaging methodologies by means of the IWB. Then there is a comment of an Australian teacher, Jess McCulloch, who has been using an IWB for a year to teach Chinese at Hawkesdale P-12 College in country Victoria:

The two biggest advantages of teaching with an IWB are increased student engagement (because the students are all dying to get their hands on the board and are eager to watch anything that’s happening on it) and the ability to cater more effectively for kinesthetic learners. Aspects of using an IWB such as the ability to show anything that’s on your computer to the whole class easily



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and add notes to whatever it is you or the students are demonstrating, as well as being able to save students' work and class notes straight away and use them for other classes are fantastic advantages, but I think they are secondary to engagement and the ability to cater for different learning styles (Betcher and Lee 55).

As McCulloch mentions, one of the advantages of working with this tool is students' engagement. That is, the change in attitude that an IWB causes in students is amazing. Since they are able to watch, listen, and even do things on the board, their attitude is completely different from having them in a traditional class. Some of these changes can be the enthusiasm that they show when they are taken into account in the interactive classroom. They state that they *love* English because they participate in the class. Also, they explain that they are quiet because the teacher calls the children that are totally concentrated. In addition, they explain that they are learning more, because it is easier to remember for the quiz.

Another important point to mention is agility. Thanks to e-teaching, there is the chance to change the course of the lesson to respond to students' needs and interests. It means a teacher is having a lesson and suddenly one student asks something; instead of saying, *ok, find out that as homework for next class*; the teacher can have a better response *let's find out together, right now*. (58). So, both teachers and students are motivated. Students find answers to their questions and can analyze them as a group with their teacher and classmates,



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which leads to *interaction*. Below, there is a comment of Amanda Signal, -a teacher from Auckland, New Zealand- who reinforces the importance of having an agile classroom:

Having an IWB gives you the freedom to follow where kids take the lesson. Instead of having to 'come back to that later' because you haven't got resources or items to more fully dive into those ideas, you can utilize the Internet or multimedia or other resources to delve into the kids' ideas then and there and be able to look into them more closely. The kids don't just get to see images; they can manipulate things such as with Google Earth when exploring the world, or move pieces of text to make up stories. With an IWB, students can have a lot more ownership over lessons and the direction they take (Betcher and Lee 59).

Now, that we have explored the process and benefits of e teaching, we can look to different learning styles in order to fix attitudes and planning towards them.

3.4.3. Learning Styles

According to Judy Haynes in her article *Teach to Students' Learning Styles*, the learning process must be considered as a varied range of styles. Thus there are six different ways of learning; and they are the following:

- *Auditory Learners*

These students learn by listening and speaking; they understand better when they hear oral instructions, and convey oral messages. These pupils work better while they are part of debates, interviews, choral readings, or oral panels.



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- *Visual Learners*

This style focuses on pupils' learning by looking at things. Therefore, reading is the basis of their personal work. They evidently prefer working with written instructions, maps, graphs and graphic organizers.

- *Tactile Learners*

Activities involving feeling, touching, and grabbing are the best ones to do with this kind of learners. They enjoy playing board games and drawing. These activities make learning memorable to them as they get to experience learning on their own.

- *Kinesthetic Learners*

Pupils learn by touching and manipulating objects, but they recall information better when their body is involved in their learning. Students prefer to dance, act, experiment and move their bodies.

- *Global Learners*

This type of learning is developed by the use of interesting material since students are very intuitive and creative. They enjoy and learn more by doing group activities, computer programs, choral reading, and holistic reading methods.

- *Analytic Learners*

These students organize their work in a logic way. They prefer to work by themselves with guided activities. Also, they need specific goals to prepare their processes (Haynes).



3.4.4. *Meaningful Learning*

“To learn meaningfully, students must relate new knowledge (concepts and propositions) to what they already know “(Ausubel, qtd. in AsiaeUniversity 125). This theory poses the importance of linking knowledge. Former and new concepts can be joined by using graphic organizers, which are the basis of this theory. Since students learn more and more effectively by recycling concepts. The use of IWB can be the *materialization* of this theory, thus students can store old information in their memory sticks – their brains, and later add new knowledge to the same file. Moreover, according to Jonassen (qtd. in AsiaeUniversity 127) there are eight attributes, which are part to the *Meaningful Learning Theory*. They are active or manipulative, constructive, reflective, intentional, complex, contextual, collaborative and conversational.

3.5. *Teachers’ reluctance to the use of state-of-the-art technology*

In her position paper, Darcy Cunningham cites Patrascu who defines a reluctant teacher as “[someone] who does not want to and/or cannot (readily) accept change” (Cunningham 2). Moreover, Patrascu establishes different types of reluctant teachers. Among them there are “teachers who don’t want to change, teachers who don’t understand the necessity to change, teachers who would like to change but don’t, because of constraints, and teachers who try to change but aren’t successful and so in turn give up”

In addition, Cunningham mentions that reluctant teachers “see technology as just one more thing for them to fit into their already overloaded day.”



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Moreover, some authors such McKenzie justify this position by saying that reluctant teachers are expected to implement technology in their classes without any training; therefore, Cunningham in accordance to McKenzie states that “it is overwhelming [for reluctant teachers] to jump into technology without the right support and training.”

However, we do not totally agree with that statement, as we are part of a new era, the digital era as named by some authors, which demands to be in a constant updating not only to benefit learners, but also teachers themselves. Today, technology has advanced in such a way that we cannot only expect from our principals to give us training on technology.

It is worth and important to mention the idea about education. As any other professional, teachers need to update themselves not only in his/her area, but also with the changes that technology offers. Technology is a tool for teachers; a tool that allows teachers to change their methodologies in order to engage students into the class.

Aside from the lack of training, there is resistance to change and the resistance to learn. Teachers are used to have a certain model of class that they do not see or believe in the importance of having a different one. Even though, teachers are conscious about students’ interests, they do not see the importance of implementing technology in order to have engaging classes for today’s learners. As we said before, technology is only a tool. However, this tool allows teachers to have new and different teaching methodologies.



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Nevertheless, in order to overcome this problem Linda Kennedy poses (qtd. in Cunningham's 5) five ingredients "administrative support, a technology plan, leadership, training time, and staff support."

Finally, as Cunningham claimed "integrating technology into the curriculum is a high priority in schools today;" therefore, the importance of overcoming these problems. As a solution, it would be interesting to give a speech to teachers mentioning this problem and talking about the challenges to demonstrate teachers the vital role that technology has in the learning process of their students (Cunningham 7). We consider they would reflect and realize the situation, so then we can offer them training. Perhaps, the attitude and acceptance would be different. Once we have considered teachers' opinions and perceptions is it necessary to take into account children's thoughts.

3.6. Students' perceptions about the use of IWBs

According to a study developed by Kate Wall, Steve Higgins and Heather Smith called "The visual helps me understand the complicated things': pupil views of teaching and learning with interactive whiteboards". This project was developed in twelve schools around the United Kingdom; where the boards were disposed. This is a study which is based on children, teachers' data gathering. For this project 80 children were asked and taken into account about their perceptions about the interactive classes they received. They used the bubble method where there are common and specific questions about metacognition. This term is used to define the process that takes place inside the heads. In this way, the results were presented using the following charts.



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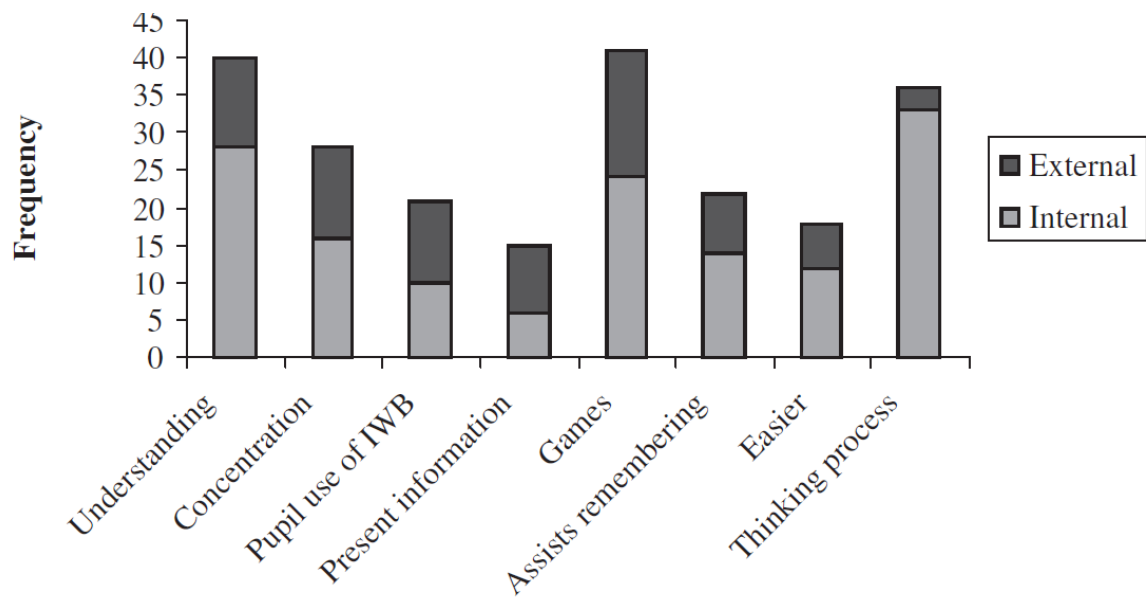


Figure 6: Subcategories for 'facilitating learning'

In Wall's research, it is stated that children learn more by playing games, as it is seen in Figure 6; rather than sitting down and being exposed to written information only. Also, they stated that have a high thinking process, and that, the use of in the IWB makes learning easier.

Finally, children mentioned that they learn in different ways, and that IWB provides children a large range of possibilities to apply all of these.

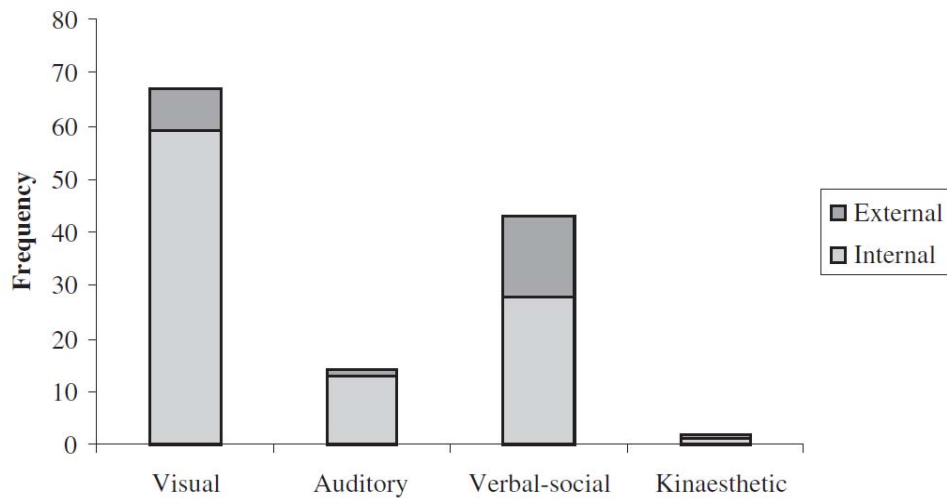


Figure 8: Subcategories for 'learning styles'

Every aspect, as teachers, we improve, will provide students with a better way of learning in real contexts. They need to apply all the methods and tools that they use in school. The success as teachers is to provoke curiosity in children by using tools to learn in every place (Wall, Higgings and Smith 851-867).



Chapter III: Methodology

3.1. Basic Methodology

Our monographic research was based on literature research, since we have compiled information from different academic sources. Also, the information has been tabulated and interpreted. Aside from that, we interviewed an expert on ICTs, who gave us important, useful and interesting information about our topic.

In this bibliographic research, we have revised a monograph *Incorporating Technology among Young Learners: The use of the Interactive Whiteboard in the English Classroom* by Daniela Roza Martin, which has been useful to support our topic. In addition, the main book that we have revised was *Interactive Whiteboard; The Revolution* written by Betcher and Lee. Moreover, we have investigated some articles where authors analyze the use of Interactive technology in order to have interactive environments. From the research we have done, we got information related to learning styles, meaningful learning, e-teaching, classroom management, teachers' resistance to technology, and students' perceptions about the use of IWB.

The survey was applied to 20 children. Ten of them were boys and ten were girls. All of the children were 6 years old. We applied this survey at "La Asunción" school in order to know children's preferences about technology gadgets and to determine the influence of the Interactive Whiteboard in their learning process.



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To support our points of view we interviewed Master Marco Jácome, an expert on ICTs. He works as a teacher at the University of Cuenca. He teaches Mathematics and Physics in the Mathematics and Physics School at the Philosophy Faculty. In addition, he is the coordinator of the Computing Resources Center. We interviewed Master Jácome in Spanish because he does not speak English properly. Moreover, he has not only used these Interactive Whiteboards, but he has also been training in schools.

The interview focused on three main aspects. First, he referred to teachers in relation to technology, where he mentioned about some teachers' resistance to changes. As we consider this aspect important in order to change and improve the learning process, we think this is an interesting topic to study and to mention in our research paper. Then the interview focused on the academic part, as well. Finally, he mentioned how useful it was to have new gadgets in the classroom, which engage students in the class.

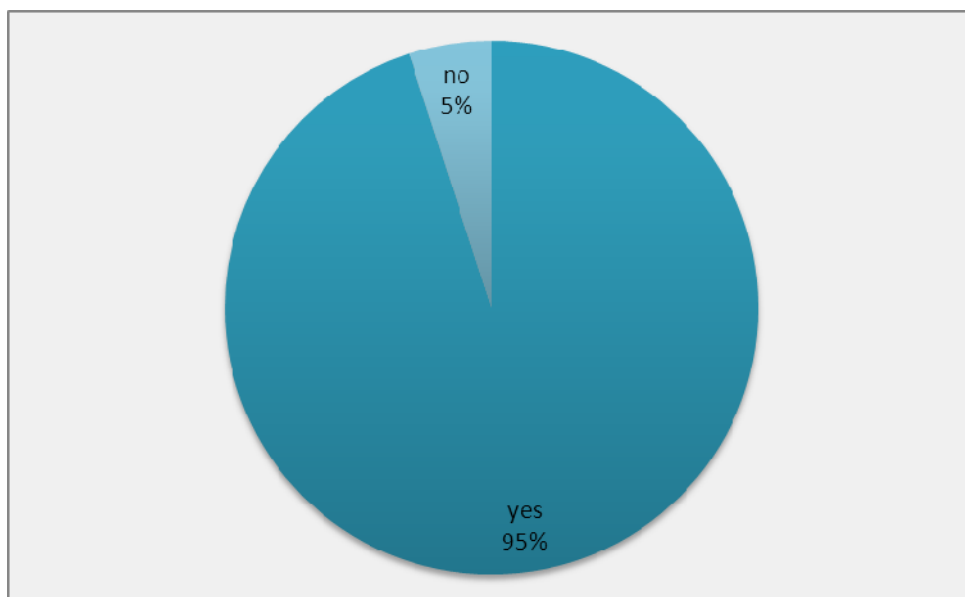


Chapter IV: Results: Analysis and Interpretation

These are the results of the survey applied to collect data to support our monographic research.

4.1. Do you enjoy using a computer, x-box, Nintendo or a PSP?

Yes	19
No	1

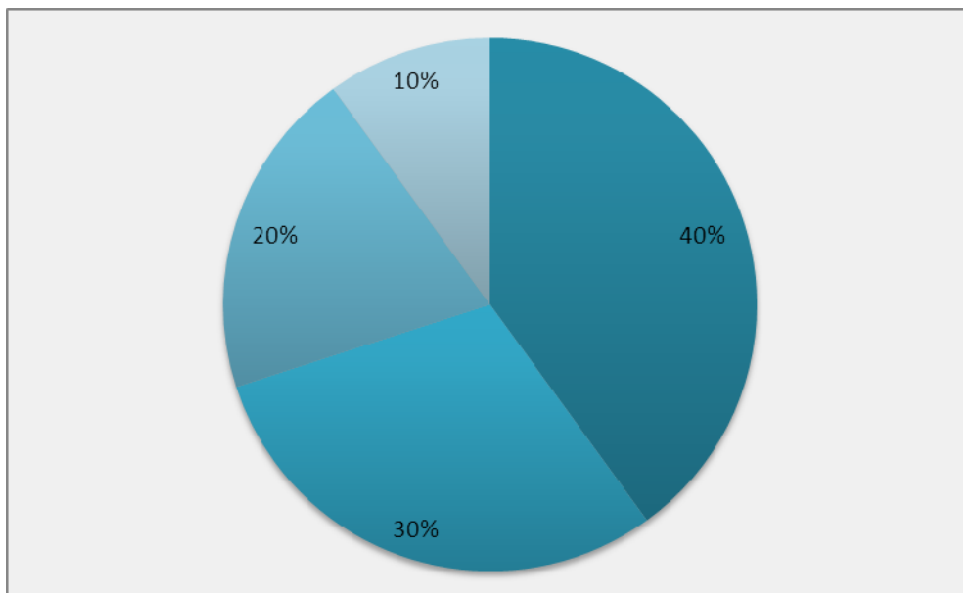


19 out of 20 students said that they use technology, which is the 95% of the sample. Thus, we concluded that most children are engaged with technology and its use in their daily activities. They like to play and also they enjoy video or computer games. This gives us a clue of how related they are with gadgets. Also, this shows the new technological age that we live. Consequently, new equipment is needed to fulfill their interests and necessities.



4.2. How often do you play video games?

Everyday	8
3 times a week	6
Once a week	4
Never	2

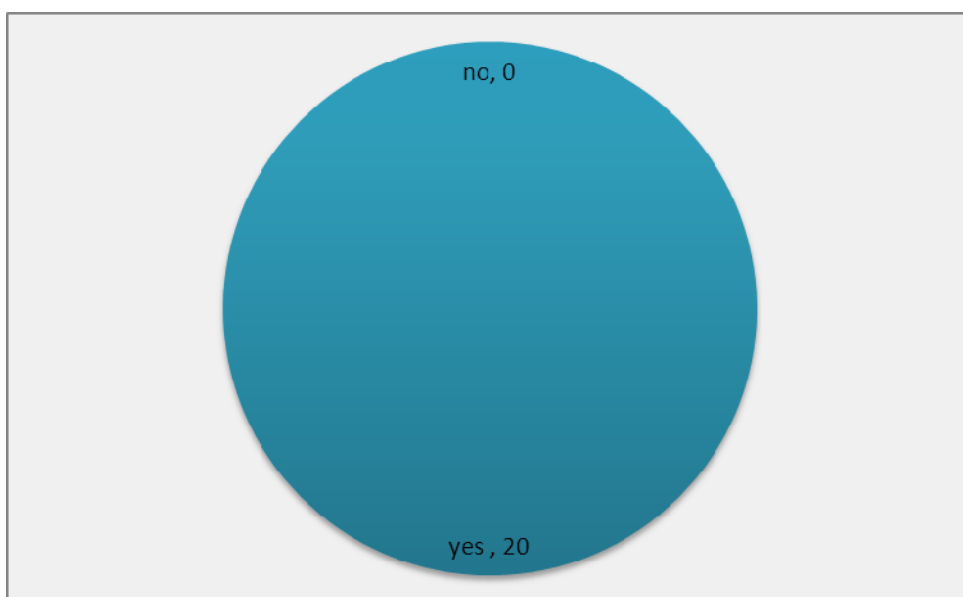


18 children which is the 90% of the sample claimed that they play video games at least once a week. And just 2 children said they never play video games. This is the 10% of the sample. This fact shows us that students have gotten technology as their tool to play regularly. Technology is part of their lives.



4.3. Do you like to watch videos?

Yes	20
No	0

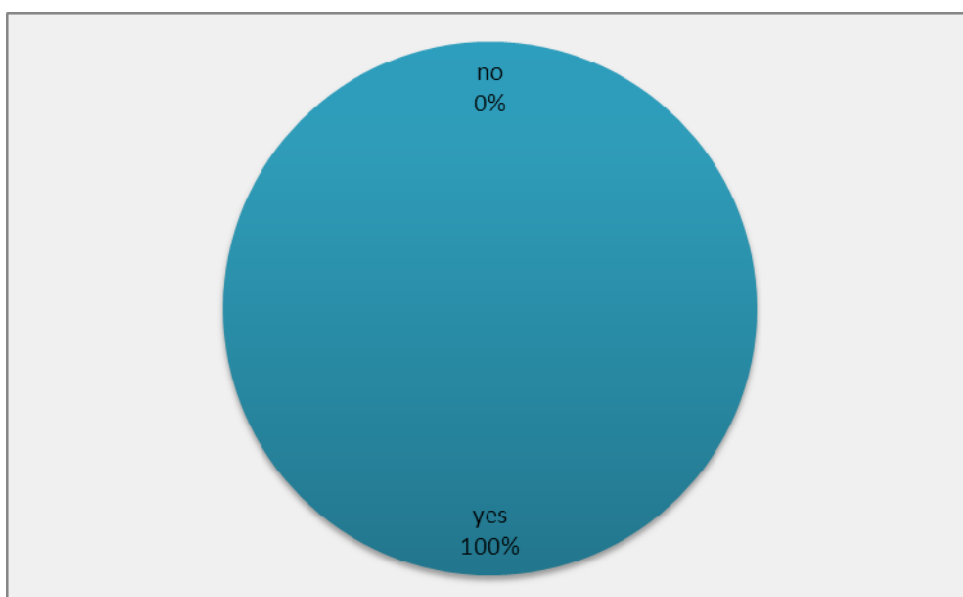


In the third question, all of the students - 20 children, which is the 100% of the sample- declared that they love videos. This gives them the chance to live another reality during their lives. They like cartoons and fantasy movies. Thus, we as teachers need to be aware and updated to know their likes and interests. They love characters that appear in TV. Taking this perception into account we as teachers can introduce those characters to create a magical and interactive class.



4.4. Do you like to use the Interactive Whiteboard?

Yes	20
No	0

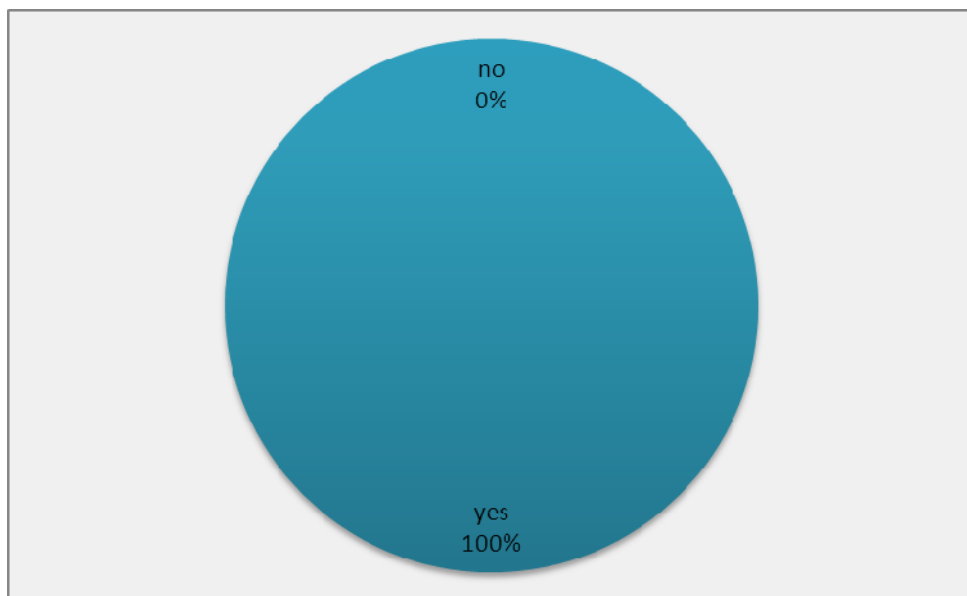


100% of the simple,-all of the children- answered that they like to work with the IWB in their English in their classes. Here, we could identify the interest that children have when they work with this tool. They love to go to the interactive classroom. They say that they like to use the optical pencil, and to participate when the teacher selects them. They stated that the classes are fun. They enjoy English Interactive Classes.



4.5. Does the Interactive Whiteboard help you to concentrate more?

Yes	20
No	0



Finally, 100% of the children explained that they do their best to be observed and taken into account to go to the front and do the assigned activity. They like to use this tool in their English Classes.

Regarding this information we could conclude that children are an active part of this new digital era, where devices are in their daily activities and routines. They play video games at least once a week; meanwhile they love to watch videos because they feel interested. And with the fourth and fifth question we could understand children's perceptions about the use of the IWB in their EFL classes. All of them feel motivated to interact with the IWB.



Chapter V: Conclusions and Recommendations

5.1 Conclusions and recommendations

With all the previous information based on the bibliographic sources, the survey and interview with an expert we could conclude that:

- IWBs provide a huge range of benefits to both teachers and students. These benefits are the enjoyment of the classes by the students and the significant or meaningful learning they experience. Therefore, it is recommended to take advantage of the benefits to plan classes incorporating suitable technological resources.
- IWBs have become a popular and effective tool in the EFL classroom, nowadays. Then, institutions should implement the use of IWBs in their classrooms, and train teachers on the use of it.
- IWBs provide interaction among all the participants in the classroom. So, we recommend taking advantage of the varied activities that IWBs offer to get an Interactive Classroom which allows students to learn in a meaningful way.
- Students feel more comfortable, motivated and engaged while working with an IWB. Therefore, it is important to make teachers aware of the strengths IWB has in the class.
- IWBs provide teachers the opportunity to approach students with different learning styles such as, kinesthetic, visual, and auditory, among others.



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Consequently, it is necessary to combine different and diverse methodologies and techniques to motivate students to learn English.

- In addition, we could analyze the huge impact of teachers' resistance to use technology, which does not allow teachers to make full use of the benefits the IWBs offer. That is why it is important for teachers to master the key principles in order to make their teaching memorable, fun and easier for both teachers and students.
- Finally, it is worth to mention that the teacher has a different but a very important role in the interactive classroom, and that the IWB is only a very useful tool for his/her lessons. Therefore, the importance of being open-minded and willing to change strategies to reach learners.



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Appendix 1

Survey applied at Asuncion School.

The following survey intends to collect information related to “Interactive Whiteboards in an EFL classroom.” This document will be used as the basis for our thesis.

1. Do you enjoy using a computer, x-box, Nintendo or a PSP?

Yes

No

2. How often do you play video games?

Everyday

3 times a week

Once a month

Never

3. Do you like to watch videos?

Yes

No

Which ones? Write the names: _____

4. Do you like to use the Interactive Whiteboard?

Yes

No

Why? _____

5. Does the Interactive Whiteboard help you to concentrate more?

Yes

No

Why? _____

Thank you!



Appendix 2

Master Marco Jacome

0:01 Marco: Mi nombre es Marco Jácome yo trabajo soy profesor de la Universidad de Cuenca en la facultad de Filosofía doy clases de matemáticas y de física en la especialidad de Matemáticas y Física además coordino el centro de recursos informáticos.

1:00 Gabriela: Justamente relacionado con el tema de los recursos tecnológicos para la parte de pedagogía y educación nosotros nos encontramos desarrollando una monografía/tesina basadas sobre el uso de las pantallas interactivas en las aulas de clase precisamente en las aulas/clases de Inglés. Quisiera saber basado en su experiencia. ¿Usted ha utilizado estas pantallas interactivas?

2:00 Marco: Yo utilizo las pizarras interactivas de hecho doy capacitaciones respecto al uso adecuado de las pizarra interactiva en clase; es decir, no solamente en la parte técnica sino también como utilizar la pizarra interactiva para una clase real como hacer planificación y como incorporar esta pizarra ya como recurso para poder efectivamente dar una clase inglés, una clase de geografía, una clase de matemáticas, cualquier asignatura dada a través de estas pizarras.

3:00 Gabriela: entendemos que la parte tecnológica nos ayuda muchísimo en el ámbito de que sea mucho más atractivo. Los niños, en este momento, ellos ya están en esta era y efectivamente hacen las cosas de una manera mucho más rápida de la que nosotros incluso podríamos hacerlo. De esta



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manera, ¿cree usted que el aprendizaje como tal se ve enriquecido con el uso de las pizarras interactivas?

3:45 Marco: Alguna vez me preguntaron qué nombre deberían llevar las salas donde se encuentran las pizarras interactivas, les llamaban aulas virtuales, les pedí que les cambien el nombre a aulas interactivas porque justamente la ventaja que tiene la pizarra digital es no solamente el hecho de que se puede trabajar con el software de la pizarra sino que permite convertir a la pizarra en un computador y la destreza que tiene que ganar el profesor para dar clases a través del computador es lo que hace realmente útil. Los niños se entusiasman muchísimo cuando empiezan a utilizar la pizarra interactiva porque ven que le pueden utilizar como un computador. Ahora utilizar el computador para aprender es una cosa en la que el maestro es quien tiene que lucirse, digamos así, para que los chicos y los niños, especialmente, se entusiasmen y puedan utilizar la interacción que brinda la pizarra en la clase.

3:55 Gabriela: Es algo importante entender que es la interactividad que brinda la pizarra como tal. Ahora, hablaba usted de la parte de lucirse del profesor, nosotros hemos tenido una investigación ya de algún tiempo que hemos comenzado el curso, pero en su experiencia con este tema nosotros quisiéramos conocer su punto de vista en la premisa en la que se habla sobre que la clase seguirá siendo centrada en un adulto o profesor y en realidad no viene a ser interactiva por parte de los chicos, de los niños.



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¿Cómo se entiende esto y que tan real en la parte ya práctica las pantallas resultan?

4:30 Marco: El gran protagonista de una clase.... tradicional es el profesor, definitivamente, todavía somos muy conductistas no transferimos esa responsabilidad al niño o al chico. Las pizarras interactivas en cambio lo que hacen es quitarle al profesor esa posibilidad que tiene de ser protagonista y es como que le opaca su imagen. El profesor tiene que estar muy preparado para dar la posibilidad de que el niño a través de la pizarra logre su aprendizaje porque no sacaríamos nada si es que el profesor sigue siendo ahí el que más habla o el que expone o el que lleva el aprendizaje. La idea es que exista una planificación previa que permita que efectivamente la pizarra esté para que use su posibilidad de interacción que tiene; eso ¿con qué se hace? eso se hace con planificación. Ahora, esa planificación debe tener un componente importante de software; eso quiere decir, que el profesor tiene que manejar ese software para poder la clase, esa parte es difícil porque los profesores todavía no están totalmente capacitados en eso, más bien tienen un poco de temor, y los temores ahí son dobles porque no solamente pierden el protagonismo sino que también sienten miedo de que los chicos, los niños rápidamente les ganen en cuanto a la destreza del manejo de la pizarra y más bien sean ellos los que dirigen la clase. Entonces esos temores hay que irlos venciendo. El profesor, primero, debe vencer el miedo al computador; luego debe adaptarse a las nuevas destrezas que necesita para el manejo de la pizarra digital y una vez que tiene dominio de



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esto está en posibilidad ya de facilitar la interacción a través de la pizarra. De tal manera que los chicos estén en la pizarra todo el tiempo trabajando y también en sus pupitres o lugares de trabajo.

5: 29 Gabriela: ahora, toda esta parte ¿en qué lugares se está aplicando en la ciudad? ¿En qué lugares efectivamente nosotros tenemos a gente que esté trabajando ya y que esté capacitada, no en porcentajes pero si más o menos un aproximado que nos pudiera ayudar para guiar y entender cuál es la situación local en la que estamos?

05:50 Marco: las pizarras interactivas, se están colocando eh... podemos decir que se están empezando a colocar de forma masiva desde el año anterior, estuvimos trabajando en colegios como el Borja, como las catalinas que también instalaron, el asunción que también ya tiene, la Salle todavía no está, pero bueno, esos colegios medio de renombre de la ciudad ya cuentan con las pizarras. Ahora en realidad se han adecuado únicamente una aula solo una aula en todo el colegio o en la escuela para poder dar clases a través de esto, los profesores como le digo no están totalmente capacitados hay más bien algo de dificultad, cuesta un poco convencerle al profesor de que esta es su nueva herramienta de trabajo, eso demorara yo creo que unos 5 año, ahora hay proyectos del municipio, del gobierno, que han estado dando pizarras interactivas masivamente en escuelas fiscales, hace poco tiempo se instaló pizarras interactivas en una cantidad creo de 20 pizarras interactivas en colegios como la Herlinda toral, Garaicoa, como el



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ecuador, todos estos colegios ya cuentan con pizarras interactivas y fue una donación del municipio a estos colegios además de eso tienen el programa del gobierno en el que yo he visto que se han colocado pizarras en escuelitas como en chaucha, Molleturo, he visto en lugares tan recónditos como por ejemplo fuera de la provincia, por ejemplo se han colocado en lugares que ni siquiera hay luz, se han colocado pizarras interactivas por el convenio que tiene el gobierno.

Sin embargo yo creo que a futuro efectivamente esta va a ser la herramienta de trabajo del maestro y las pizarras interactivas van a estar una en cada aula con el profesor, con todos los profesores capacitados para usarlas.

07:45 Gabriela: ¿qué tiempo puede durar este proceso?:

07: 49 Marco: yo creo que este proceso de adaptación va durar aproximadamente unos 5 años para que todos lo empiecen a aceptar como una nueva realidad en la educación. Ahora estamos comenzando estamos mas o menos un año en el que hemos estado ya forjando esto muchas veces se tiene la idea de que teniendo la pizarra en el colegio ya llevo la tecnología al colegio pero en realidad solamente es el artefacto la idea es que el artefacto funcione con el maestro aquel que le hace funcionar y los chicos trabajando con la pizarra. Entonces para que esto sea efectivo una pizarra en cada aula el profesor capacitado y yo creo que aproximadamente demore unos 5 años.

08:26 Gabriela: ahora bien la parte de los frenos como tal o de obstáculos que nosotros tengamos como tal, Ud. está viviendo el proceso desde



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adentro, ¿qué dificultades se han presentado durante este proceso que lleva ya un año?

08:42: Marco: el principal obstáculo es el escepticismo, el escepticismo de los profesores, pensar que efectivamente esa va a ser su futura herramienta de trabajo, siempre es difícil el cambio el cambio mas difícil es justamente con las personas que están dentro del ámbito que les toca cambiar, entonces el cambio de mentalidad es fundamental si bien es cierto todos se quedan admirados asombrados dicen que tiene una alternativa, que seria una buena posibilidad de trabajo, pero el rato que tiene que ir a la pizarra a utilizarla ahí veo que existe mucho temor, entonces ese es otro de los obstáculos graves, el miedo que tienen los profesores no solo al cambio sino al hecho que ellos son los que tiene que dar manejando y ellos son los que tienen que tienen que hacer funcionar, muchos de ellos ya han perdido el miedo al computador sin embargo al ir a la pizarra ven que necesitan nuevas destrezas, el solo hecho de escribir es una destreza diferente porque el marcador es de tipo electrónico. El solo hecho de manejar los botones o de escribir una palabra porque la palabra al ya no haber un teclado en la pantalla pues ellos tienen que desplegar un teclado digital y ahí tienen que ir digitando con el mismo marcador. Todo eso causa mucha dificultad, y tener una rapidez en ese manejo cuesta, mucho están haciendo ahora estos artefactos electrónicos como el ipad el iPhone tiene ya cierta posibilidad de hacer que la pantalla touch se gane cierta experiencia en el manejo, es bastante similar el manejo de la pizarra digital, entonces yo creo que por



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medio de estos artefactos si es que se gana un poco de tiempo digamos así y adaptación, esos artefactos ayudaran mucho para que el profesor va a acostumbrarse a ver que estos funcionan igual que una pizarra digital no así una computadora ya que Es mediante teclado y que son otras destrezas.

10:52: Gabriela: Ahora en la parte económica, ¿es también otro obstáculo? Ahora con lo que comentábamos de las escuelas del milenio y el gobierno que provee en este momento las pantallas, pero me imagino que en instituciones privadas debe ser mucho mas complicado. Este un factor que pueda afectarla...?

11:15: Marco: si es un limitante todavía, pero la tecnología evoluciona y abarata costos, estamos hablando que una sala implementada totalmente para que funcione con pizarra interactiva tiene un costo aproximado de unos 5000 dólares, sin embargo lo que es computador lo que es proyector y lo que es la pizarra digital es decir el artefacto que hace que funcione el punto con el marcador digital llegara entre unos 2500 y 3000 dólares, lo demás es adecuación física sonido y ese tipo de cosas que no son indispensables, lo indispensable es la computadora el proyector y la pizarra digital, todas vienen con el lápiz, todo cuesta unos 3000 dólares aproximadamente. Ahora si el profesor tiene su laptop, ya no necesita que la sala este adecuada con una computadora, lo que abarata el costo, lo que necesitaría es la pizarra digital y un proyector. Ahora suponiendo que tiene que comprarse un proyector y una pizarra digital estamos hablando de aproximadamente unos



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1500 y 2000, ahora mismo se abarata, con el tiempo se abaratará mucho más.

12:48: Gabriela: ¿Como la utilización de estas pantallas hace que las inteligencias múltiples se desarrollen? (Parte inentendible)

12:57: Marco: es fantástico el trabajo de la pizarra digital basándose en este tipo de teorías, que bueno si bien es cierto pudieron haber estado de un modo un tiempo pero es verdad que existen diferentes modos de aprender, por ejemplo hablamos que tenemos la posibilidad de audio de imagen de interactuar, tenemos la posibilidad de que los chicos kinestésicos, que están muy inquietos que se mueven, encuentran en la pizarra digital un desfogue de todas sus posibilidades de aprender, por ejemplo: si alguien tiene mas afición por la música que por la matemática, la pantalla brinda esa posibilidad, incluso existe un software que brinda la posibilidad de crear música a través de la pantalla se puede sacar un teclado de piano en donde se pueden hacer composiciones y después escucharlas.

Existe también este software que se llama geogebra para los que les gusta mas la matemática que la música por ejemplo, tiene la posibilidad de sacar un plano cartesiano y empezara a dibujar figuras geométricas hacer demostraciones, entonces yo veo que esto va de la mano con esto, los chicos se motivan muchísimo más, el trabajo con los chicos es la parte fácil, la parte mas difícil, es el trabajo con los profesores, porque el rato que los profesores aceptan esto el trabajo está hecho. Los chicos van a ser muy fácil que ellos se adapten.



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14:34: Gabriela: estábamos hablando de que nosotras estamos como que aprendiendo esto, para los chicos es muy fácil porque han vivido en esto, entonces:

14:40: Marco: Ellos están acostumbrados a sus redes sociales, a su computador, a su touch, así que el rato que tienen que adaptarse a su marcador digital va a ser mucho más fácil para ellos.

14:53: Verónica: En cuanto a disciplina ¿cree que es más fácil controlar una clase con esta clase de pantallas?

14:59: Marco: la disciplina puede ser un problema dependiendo cual es la concepción de disciplina, si para mi disciplina es que todos estén calladitos en su puesto escuchando lo que yo digo, obviamente pensare que es una indisciplina total que interactúen con la pizarra y que se muestren interactivos. Entonces ahí depende el criterio del profesor ante la disciplina. Yo particularmente no le veo a la disciplina así, yo le veo a la disciplina como el interés que pueden tener por aprender aunque haya algo de bulla. Entonces eso es muy manejable y muy normal.

15:32: Verónica: entonces ¿controlar la clase tal vez?

15:35: yo creo que el control de la clase pasa por el interés que ellos puedan tener por la clase, entonces con esto se consigue muchísimo de que el interés aumente y bastante, entonces si es que se trata de que de incrementar el interés y trabajar en los temas que el profesor de atraes de la pizarra yo no creo que vaya a haber ningún problema en el manejo de un curso.



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15:58: Gabriela: ¿es factible utilizar con grados de 40 a 50 alumnos y con el hecho de que todos los alumnos quieran acceder todos los días a la utilización?

16:13: Marco: Ahí si es complicado, esta demostrado que la pizarra funciona en cursos formados entre 25 y 35 alumnos, aja y se tiene que trabajar por grupos, de 4 a 5 alumnos, la idea es que todos tengan acceso a la pizarra, digamos se logra conformar un grupo de 35 alumnos se logra formar 7 grupos seria mejor, la idea es de que ellos puedan interactuar todos en la pizarra y que todos tengan acceso, que suba el numero de alumnos a 50 a 55 va a estar un poco mas difícil, se tendrán que formar mas grupos de trabajo, y eso si puede dificultar, bueno las circunstancias, y las realidades son diversas, pero la pizarra esta comprobado que la cantidad optima esta entre los 25 y los 35 estudiantes.

17:06: Gabriela: muchas gracias Marco, le agradecemos mucho su colaboración.

17:12: Marco: encantado gracias a ustedes.