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THEME:

"THE RELATIONSHIP BETWEEN THE USE OF THE IWB E-LEARNING TOOL AND THE TEACHING AND LEARNING OF ENGLISH AS A FOREIGN LANGUAGE IN SEVENTH YEAR STUDENTS AT "COLEGIO LOS PINOS" DURING THE ACADEMIC PERIOD 2012 – 2013"

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APPROVAL SHEET

We, Dra. Mg. María Teresa Llumiquinga., Director and Miguel V. Ponce, M.S., Co-Director, duly certify that the Thesis under the title: **"THE RELATIONSHIP BETWEEN THE USE OF THE IWB E-LEARNING TOOL AND THE TEACHING AND LEARNING OF ENGLISH AS A FOREIGN LANGUAGE IN SEVENTH YEAR STUDENTS AT "COLEGIO LOS PINOS" DURING THE ACADEMIC PERIOD 2012 – 2013",** by Nelly Alexandra Costales Vasquez, who has finished her studies in Applied Linguistics in the English Language program at the distance modality in the University of the Army Forces, after being studied and verified in all its chapters; the dissertation is authorized in front of the correspondant university authorities.

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Declaro que:

El proyecto de grado denominado **"THE RELATIONSHIP BETWEEN THE USE OF THE IWB E-LEARNING TOOL AND THE TEACHING AND LEARNING OF ENGLISH AS A FOREIGN LANGUAGE IN SEVENTH YEAR STUDENTS AT "COLEGIO LOS PINOS" DURING THE ACADEMIC PERIOD 2012 – 2013",** ha sido desarrollado citando las fuentes correspondientes y respetando las disposiciones legales que protegen los derechos de autor vigentes.

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Sangolquí, agosto 2014

Nelly Alexandra Costales Vásquez

DEDICATION

With unconditional love, I dedicate this work to my dear husband Francisco Lara, my beautiful daughters Vicky and Anita Lara Costales, who are my precious gifts from God, and to my loving and wonderful parents Raul Costales and Nelly Vásquez; all my love, strength and my inspiration for the fulfillment of this thesis.

Con todo mi amor incondicional, dedico este trabajo a mi amado esposo Francisco Lara, a mis dos hermosas hijas Vicky y Anita Lara Costales, quienes son mi precioso regalo de Dios, y a mis amorosos y maravillosos padres Raúl Costales y Nelly Vásquez; a todos ellos todo mi amor ya que son mi fuerza e inspiración para la realización de esta Tésis.

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EXECUTIVE SUMMARY

This thesis explored **"THE RELATIONSHIP BETWEEN THE USE OF THE IWB E-LEARNING TOOL AND THE TEACHING AND LEARNING OF ENGLISH AS A FOREIGN LANGUAGE IN SEVENTH YEAR STUDENTS AT "COLEGIO LOS PINOS" DURING THE ACADEMIC PERIOD 2012 – 2013".** Valuable insights were found during the actual use of the IWBs while, teaching and learning English. Furthermore, this survey found the factors that were influencing students´ and teachers´ positive and negative attitudes towards the IWBs use. Data was collected and analyzed from seventy seven students and three teachers to explore their opinions towards the use of the IWBs. Also results of the questionnaires and observations, revealed that both, students and teachers, have a positive response towards the use of this technology in language, althought its´ use was not permanent. Nevertheless, the data showed that students and teachers revealed that they appreciated this technology and they see the importance of it but, unfortunately, they do not know how to use it properly. It is imperative to make substantial in the curriculum activity and in classes, in order to improve a permanent use of the IWB. The more the students´are exposed, the more the students´ awareness, enjoyment, and interactive increase; improving class activity and comprehension of the lesson received.

Key words:

IWB	PIZARRÓN INTERACTIVO
IWB E-LEARNING TOOL	PIZARRÓN INTERACTIVO PARA APRENDIZAJE
INTERACTIVE BOARD	PIZARRÓN ELECTRÓNICO
ELECTRONIC WHITE BOARD	PIZARRÓN BLANCO ELECTRÓNICO
WHITE BOARD E-LEARNING TOOL	PIZARRÓN BLANCO PARA APRENDIZAJE

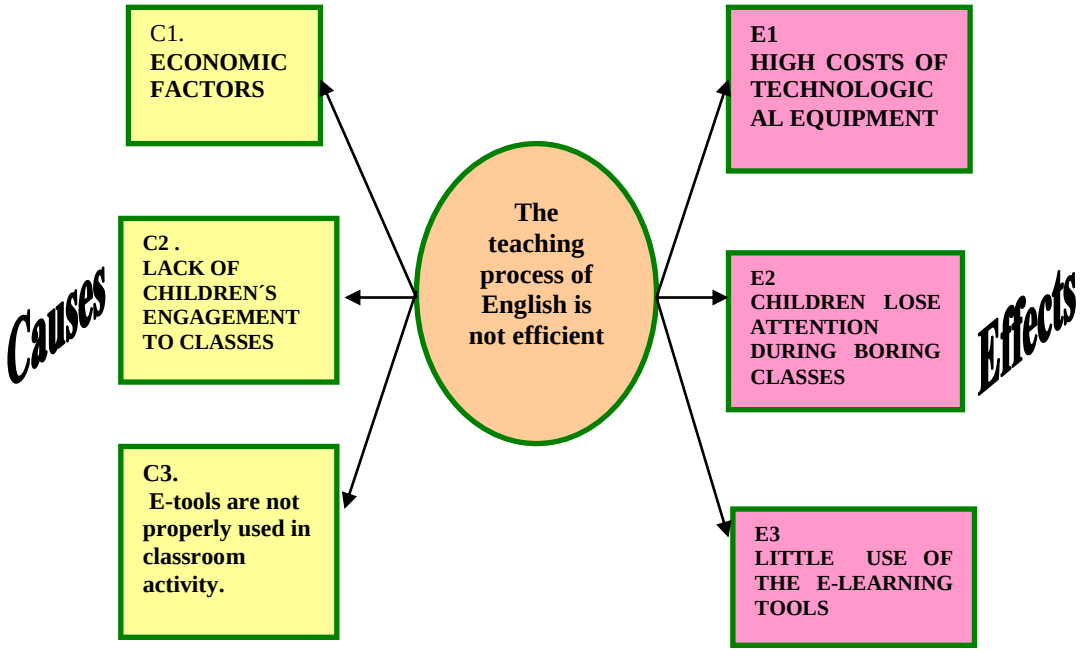
PART ONE

THE RESEARHC PROBLEM

PART ONE

RESEARCH PROBLEM

1.1 Problem identification



New technologies for the teaching learning process grow stronger and faster every year. This information age becomes an era of a new and advance knowledge of the exchange of information, the discovery or the exploration to improve the teaching-learning process 21st Century students, For this reason, it is imperative to find out the effects of using the new e-learning tools in a daily basis during class activity by using this tools more frequently. One of the e-learning tools that is really doing a great impact in the classroom is the Interactive White Board (IWB). It is causing an incredible changings and obtaining important developments in the learning-teaching process of students. Moeover, the teachers improve their way of giving classes with new ways of teaching.

Technology will always affect every aspect of human activity and it will always have a potential role to play in every field, specially in the education

and training, including distance education or teaching to students with limited motor skills. What is more, they are using the board and can enjoy, and their capability of learning in a completely different way. The use of this technology can change the way of learning, teaching and enjoying class activity, with innovative forms of experience and new ways to learn things, changing with this, the traditional methods. In this thesis are explained the advantages and disadvantages of using the IWB and the impact it is doing in the teaching learning process. We will find out what is the relationship of the use of this technology with the learning teaching process and the impact it will have on students and teachers during class. For example, how teachers and students can have an up-to-date information of new styles of learning and teaching, and how to communiate effectively by sharing information and exchanging ideas of previous experiences within the environment that sourounds them. Nowadays, chalkboards and dry markers have changed into a touch-sensitive multimedia system that embraced technology into a whiteboard known as Interactive White Board (IWB). It is important to introduce the students into current technology and prepare them for the future

An Interactive White Board (IWB) is made up of a computer, software, an interactive whiteboard and a projector. The IWB is designed to increase information retention and facilitate the sharing of ideas. All the data that is produced on the boards can be saved to a USB drive or be printed. This information can be used later. With the touch of a finger, students and teachers can control applications, write, draw, move around, navigate on the internet and save content, students are engaged and listen instead of just being taking notes, this will ease the way of teaching and learning, giving them a new opportunity to get involved into classroom productivity and the learning abilities of the students. Moreover, the class activity will change dramatically. E-learning is an important evolutionary step that has been taking in the educational area, with the help of digitalization. Digitizing means to improve the learning material communication and presentation capabilities since contents can be represented with simulations, demonstrations, or animations using interactive and multimedia techniques with the help of the

interactive white board (IWB). Thus, learners' comprehension and visualization of significant information is also improved dramatically and increases student´s knowledge. The didactic materials could be more interesting and the diverse of pedagogical methodologies could be optimized with the resources obtained such as the improvement of learners´ individual work and attitudes, how they can enrich their relationship with the teachers, and improvement of their collaborative work and responsibility. E-lerning is not simply a matter of just digitizing the traditional materials, it also involves new approaches that must be taken into account like organizational, technological and pedagogical features, and to form a well-designed educational process.

Finally, the students of 21st Century are much more computer-based learners, they are interested in e-learning technologies tools that will help them to acquire all the information they want to know. They can learn faster and differently, as they think that they are playing another video game while they are in fact learning. This IWB can easily attract students´ interest in their studies as they are more active during classes. It is important to demonstrate that with the use of the IWB e-learning tool in class activity, can effectively teach and learn English as a foreing language.

1.2 PROBLEM FORMULATION

What is the relationship of the use of the Interactive White Board (IWB) and the learning teaching process?

1.3 VARIABLE MATRIX

Independent variable

- Use of IWB Technology

Dependent variable

- Effective learning of English as a foreign language.

Relation variables

- "The relationship between the use of the IWB e-learning tool and teaching and learning English as a foreign language".

ARIABLES MATRIX			
VARIABLE	**CONCEPTUAL DEFINITION**	**DIMENSIONS**	**SUBDIMENTIONS**
Integration of IWB Technology	The Interactive White Board (IWB) is an electronic, touch sensitive board which is connected to a computer and a digital projector. It can display the image from the computer screen on the board. The computer can then be controlled by touching the board, either by finguers with special pen. Everything can be saved: annotations, images and videos, that later can be manipulated and transmitted through the IWB, and stored for later instruction or review sessions.This technology has many advantages and disadvantages. Is a way to integrate technology in class activity.	IWB – a touch sensitive board	• The purpose • Its importance • Its context
		IWB features	• Innovative learning tool. • Interactiive learning process. • Its limitations.
		IWB – Integration Technology in class	• Student´s and teacher´s advantages and disadvantages while use the IWB in class activity • Effectiveness of the IWB as a teaching and learning tool • Student´s self-evaluation • Teachers evaluation of the contents

Continue….

Effective learning English as a foreign language	Effective learning can be defined as the use of instructional strategies that address these suggestions and elicits student engagement in the classroom so the students can effectively learned.	• Purpose • Contents • Methodology • Resources • Evaluation	• Goals • competences • Objectives • Cognitives • Procedures • Attitudes • Aproaches • Methodos • Techniques • Physical and technological • Formative • Diagnostic • Summative

Table 1: Shows the variable matrix

1.4 OBJECTIVES

1.4.1 General

-To determine the relationship beween the use of the IWB technology and the enhancement of the English teaching & learning language process, and the engagement of children in classroom activities.

1.4.2 Specific

-To develop a new way to learn languages by using an interactive electronic device.

-To use the IWB as a tool to draw upon the new learning styles of students who have grown up in a multimedia age, where technology, digital enhancement and video interaction are common.

-To provide evidence of how a student can learn with this technological device.

1.5 JUSTIFICATION

Technology has affected every aspect of our lives, so it is impossible to ignore it or not use it. Every day new advances in technology are available to improve the way we life and communicate. With the fast increased use of technology in our daily lives, students have been forced to demand the right to use technology in the classroom. Unfortunately, there are schools and teachers who are reluctant towards integrating the use of technology in their education, and this needs to change. Private and public schools have to be prepared for this technological changes and demands by being up-dated with e-learning tools such as computer, laptops, Interactive white board (IWB), projectors, etc.. These e-learning tools benefit and improve new ways of teaching and learning in any subject. They help the students to interact more in class and motivates them to participate and learn in a different environment.

In Colegio Los Pinos has been using the technology adequately, since many years ago. In every class a computer, a projector, a cd-player are available, and some classes are equipped with the Interactive White Board (IWB). All this e-learning tools contribute to the interaction between teachers and students by simplifying the way to teach and learn. Technology is a must today in every school that wants to prepare their students for the 21st Century. The Interactive White Board is one of this e-learning tools as it can make a big change in the teaching and learning process of students. This new technology is composed mainly with an interactive whiteboard, which combines a whiteboard with a projector, powered by an easy-to-use software. When it is turn on, the whiteboard becomes a computer screen that can be seen by an entire classroom. The projector projects the content from a computer on the surface of the White Board, while the teacher controls the

content either with a pointer or a touch of his or her hand, instead of a keyboard and a mouse. The combination of software and projector results in much more than a simple a projected image.

Teachers at Colegio Los Pinos have been using the IWB for their English and Science classes and in the Open-House activities. It was observed that the students interact more actively during classes, as they consider the activities are interesting, because learning is “fun”.Also in conversations with the teachers, they said there was a significant improve in the students´grades, there is more interaction, and although the teaching with this device is a challenging process, it is also a rewarding one, because students show more interest and motivation during classes. Thanks to the use of an IWB, almost anything can be done on a computer monitor. A teacher can create awesome lessons where the students can use either a pen or their fingers. The image size and placement can change with a simple touch on the board. Photos can be integrated to the lesson, as well as websites, music, so that the students can respond verbally or write comments on the board itself.

The continuous use of new e-learning tools such as the IWB, can enhance drastically class activity, capture the attention, improve the effect and motivation of learning and encourage the involvement of students in the subject. Students learn better when they are fully engaged and multisensory learning is the best way to engage them. This e-learning tool enable the teacher jointly with the students, use multimedia resources and the internet and obtained an effective teaching and learning process. Nevertheless, the cost of this IWB could be too high for any school, private or public.

This thesis wants to see all the advantages and disadvantages of the relationship between the use IWB e-learning tool with efficiently teaching and learning English as a foreign language in the seventh year students at Colegio Los Pinos.

PART TWO
THE THEORETICAL FRAMEWORK

CHAPTER I

THE INTEGRATION OF THE IWB TECHNOLOGY

1.1 Interactive White Board (IWB) – a touch sensitive board

1.1.1 Determine the purpose

The IWB is a modern e-tool, which uses and purposes have increased during the past decades. It has changed classroom activities in schools that have the fortune to work with this white board. Thanks to the IWB almost anything can be done in class with a computer and internet. The purpose of this tool is to benefit and ease the life of teachers and students who use it, changing the meaning of learning and teaching in a complete different way, enhancing class activity drastically, capturing the students´ attention, improving the effect and motivation of learning and encouraging students´ involvement in the subject. All this things have change notoriously classroom activity.

In order to see how technology has had influence throughout this years, it is important to know how it all started and where it will be heading. Thomas Edison said in 1925 “Books will soon be obsolete in schools. Scholars will soon be instructed through the eye.”. Lets briefly review how classroom technology has evolve though the years, chaging everyones life and work into a more easier place to live and enjoy the advances in technology. According to Dunn Jeff, *The Evolution of Classroom Technology* (Dunn, 2011)*, has changed as seen as follow:*

1650 – The Horn Book

Benjamin Innes for The New York Times (Source: Spencer Research Library/University of Kansas)

Wooden paddles with printed lessons were popular in the colonial era. (Dunn, 2011)

1850 – 1870 – Ferule

Benjamin Innes for The New York Times (Source: Blackwell History of Education Museum, Northern Illinois University)

(Replica)

This is a pointer and also a corporal punishment device. (Dunn, 2011)

1870 – Magic Lantern

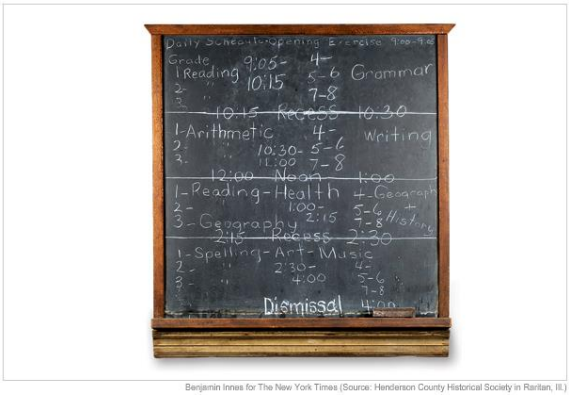
The precursor to a slide projector, the "magic lantern" projected images printed on glass plates and showed them in darkened rooms to students. (Dunn, 2011)

1890 – School Slate

Benjamin Innes for The New York Times (Source: Henderson County Historical Society in Raritan, Ill.)

Used throughout the 19th century in nearly all classrooms. They used sponge to banish what was written. (Dunn, 2011)

1890 – Chalkboard



Benjamin Innes for The New York Times (Source: Henderson County Historical Society in Raritan, Ill.)

The chalkboard is one of the biggest inventions in terms of educational technology, it still is used up to this day. (Dunn, 2011)

1900 – Pencil

Benjamin Innes for The New York Times

Just like the chalkboard, the pencil is also found in all classrooms. In the late 19th century, pencils eventually replace the school slate. (Dunn, 2011)

1905 – Stereoscope

Benjamin Innes for The New York Times (Source: Blackwell History of Education Museum, Northern Illinois University)

At the turn of the century, the Keystone View Company began to

market stereoscopes which are basically three-dimensional viewing tools that were popular in homes as a source of entertainmnent. They were also used in schools. They created hundreds of images that were meant to be used to illustrate points made during lectures. (Dunn, 2011)

1925 – Film Projector

Benjamin Innes for The New York Times (Source: Blackwell History of Education Museum, Northern Illinois University)

Similar to the motion-picture projector. Thomas Edison predicted that, thanks to the invention of the projected images, students will be instructed through the eyes and books will be obsolete in schools practicum. (Dunn, 2011)

1925 – Radio

Benjamin Innes for The New York Times (Source: Minnesota Historical Society)

The Board of Education in New Cork City was the first organization to send lessons to schools through a radio station. The next couple of decades, these “schools of the air” began broadcasting programs to millions of American students. (Dunn, 2011)

1930 – Overhead Projector

Benjamin Innes for The New York Times (Source: Blackwell History of Education Museum, Northern Illinois University)

Initially used by the U.S. military for training purposes in World War II, overhead projectors were quickly spread to schools and other organizations around the country. (Dunn, 2011)

1950 – Headphones

Benjamin Innes for The New York Times (Source: Blackwell History of Education Museum, Northern Illinois University)

Thanks to theories that students could learn lessons through recurrent drills and repetition, schools began to install listening stations that used headphones and audio tapes. Most of them were used in the “language labs” and this practice is still in use today. (Dunn, 2011)

1951 – Videotapes

The videotape was developed by John Mullin and Wayne Jonson, it recorded videos and images. In schools the videotapes were used

worldwide. (Dunn, 2011)

1957 – Reading Accelerator

With an adjustable metal bar that helped students tamp down a page, the reading accelerator was a simple device designed to help students read more efficiently. (Dunn, 2011)

1957 – Skinner Teaching Machine

B.F. Skinner, a behavioral scientist, developed a series of devices that allowed a student to proceed at his or her own pace through a regimented program of instruction. (Dunn, 2011)

1958 – Educational Televisión

By the early sixties, there were more than 50 channels of TV which included educational programming that aired across the U.S. country. (Dunn, 2011)

1965 – Filmstrip Viewer

Benjamin Innes for The New York Times (Source: Blackwell History of Education Museum, Northern Illinois University)

A precursor to the ipod, this filmstrip viewer is a simple way to allow individual students match filmstrips at their own pace. (Dunn, 2011)

1980 – Plato Computer

Benjamin Innes for The New York Times (Source: Minnesota Historical Society)

In 1984, public schools in the U.S. averaged about one computer for every 92 students. The Plato was one of the most used early computers in the education market. Nowadays there is one computer for every 4 students. (Dunn, 2011)

1999 – Interactive Whiteboard

The chalkboard got a renovation with the whiteboard. That got turned into a more interactive system that uses a touch-sensitive white screen, a projector, and a computer. Nowadays the technology used in this whiteboards or interactive white boards (IWB) is much more advanced with numerous interactive activities. (Dunn, 2011)

2010 – Apple iPad

Just like the original school slate, could the iPad bring Thomas Edison's statement to life? Could the iPad make it so "scholars will soon be instructed through the eye." Only time will tell. (Dunn, 2011)

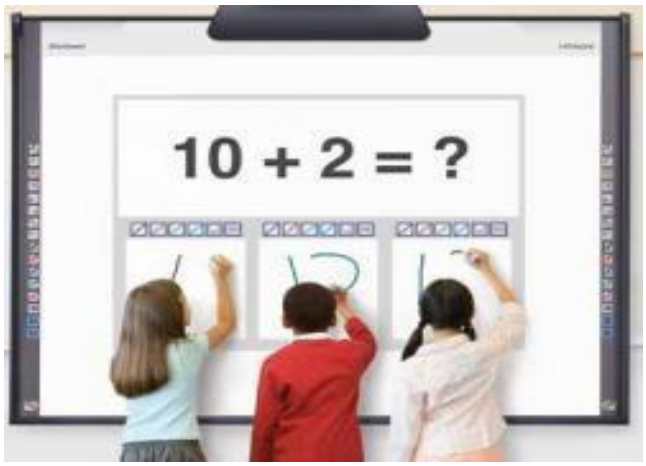
1.1.2 Identifying the importance of the interactive white board (IWB)

Technology has helped in many different ways in the educational area, each item has given its support in their moment in time, and keeps on giving its support with the new advances in technology. Today teachers are using more advanced technology such as the IWB, which consist in the use of a tactile board. It is important to know that the relationship between technology and higher education instructions has taken on new significance, as technology use on school or college campuses has expanded. The IWB support many different learning styles that are used in different types of learning environments, including the students with dissabilities. There are researches that indicates that the IWB is able to play a role in the student review process, obtaining a better level of attendance. Positive impacts are found on student learning, because lessons designed around the IWB help teachers update their preparation, be more efficient in the delivery of the lesson. IWB helps teachers increase their productivity overall.

Permanent use of modern technology such as the IWB e-learning tool, increases students´ ability to retain and learn more information. Learning can be improved through the use of visual aids components of the IWB. This technology improves students´ learning and capture their attention thanks to the variety of course material. Teachers were the first people to recognize the benefits obtained through the IWB e-learning as a tool for improving student learning acquisition, lesson planning and collaboration. Teachers can use different methods of teaching such as overhead projectors, video segments and power point, in order to increase the effect of learning and motivating students to be engaged in class activity, thereby reducing

boredom and improving the overall learning experience, including special needs students.

1.1.3 Determine the context of the IWB



Methods of delivering course material have changed dramatically over the years.. Today´s teaching practicum must impressed the kids, try to wow them with technology, to give them something new to see, use and learn. The IWB allows teachers to use infinite options in order to create a spectacular class time. It can be used for demonstrations of the subject in a complete different way, where the students are not bored as what they are learning is attractive and interesting, therefore, their attention is hooked with what the teacher is explaining to them. With the IWB is possible to make brainstorming or using videos that could be downloaded from the internet and display in a computer and a projector or in-focus, and show this images or video in order to clarify the explanation of the studied theme. In this way students can receive the knowledge in a complete different way. Students are immerse into the “same old” material but this time, from a different view and an attractive angle. IWBs give students a hands-on approach to classroom concepts.

How the IWB really works?, It is very easy to explain: First an IWB operates as part of a system that uses the white board or screen, a projector, a computer, and a easy-to-use software to display the desktop image on the IWB. Teachers can control the computer directly to the whiteboard without needing a mouse or a key board, because the IWB provides a special pen

that comes in different colors and take it from the pen tray. As the teacher writes, digital ink appears, use the eraser to erase the digital ink. The teacher can write on the screen using the software of the IWB and then change it from writing with the fingers to type the text. The white board accepts and senses the touch input from a finger, pen or any solid object. The IWB also gives the possibility to width of the lines, and they can be adjusted, adding flexible marking choices. It is possible to use a normal keyboard or the on screen keyboard of the IWB. Teachers like to use team work possibilities, a class can work together with a single central focus that can brainstorm and record ideas. Teachers can prepare interactive activities and then use them in the classroom. The use of the whiteboard is just a simple thing of creativity and the desire to learn in a different way.

Thanks to the features of the IWB, the different learning styles such as tactile learners can benefit from touching and marking activities at the board, the audio learners can see what is taking place as it develops at the board. All ages of students respond favorably to its use. (Morris, 2013)

1.2 IWB´S FEATURES

1.2.1 Innovative learning tool

As students from at all age respond favorably towards using the board, the IWB is an excellent tool for them. It is necessary only one computer classroom in order to maximize the use of limited computer access, which is sometimes the problem of many schools. Students who are learning a foreign language are able to work together, and everybody is able to participate in class contributing at the board activity. Every exercise made by the teacher with the help of the IWB will create a colorful too. The IWB e-learning tool is an electronic board that responds to displays where colors are employed as the students decide to use it in different activities and are able to learn a foreing language by doing different activities such as matching, vocabulary, writing sentences, etc. Learning English with the help of the IWB can be fun in an effective way.

1.2.2 Interactive learning process

The whiteboard is interactive, so students and teachers have to participate actively in class. The teacher can be directing everything sitting in

front of the computer and the students will be at the board and in the class asking questions, receiving and giving opinions, suggestions and physically contributing with actions and ideas that students or teacher gives. The interaction is the clue in every class, with the help of the IWB e-learnng tool the teacher uses a CD-Rom with a book and they can follow the excecises that are presented in a natural and spontaneous way, with this, the students can enjoy the activities. The four skills: writing, reading, listening and speaking plus the use of English are being used in class, depending on the activity that the teacher decides to use with the students. Every class is a different challenge of creativity that the teacher inputs in his or her planning work. The IWB support the different learning styles that can be used in different learning environments, including those of students with special needs. The teacher is able to desing lessons around the IWB streamline preparation and be more effective in the lesson, given the increase in the productivity of their students. In class there are not three or five students on the computer, but the whole class on the computer. (Technologies, 2006)

Students or teachers can use their hands, fingers or pens to manipulate objects and see them on the big screen – the whiteboard the teaching or learning a foreign language becomes interesting and is an adventure that is limited by the teacher and the students creativity to teach and learn.

At Colegio Los Pinos continue equipping every class with modern technology such as the IWB e-learing tool is a must. Nowadays every school should have access to improve their way of learning through the help of the new technology available in the market. The IWB is a tool that allows an inmmense of options for different types of students´ learning styles. Moreover, they can receive and present information in a different and awesome way.

1.2.3 Review its limitations.

Nowadays´ goal in every school and college is to integrate technology into the curriculum. At Colegio Los Pinos they are being equiped little by little with an IWB, because of its costs, not every classroom has it. Not all the schools has the budget to acquire this e-learning tool. Access to technology

has increased, fortunately but it is important to make great changes in order to increase its usage. Even though the teacher counts with an IWB, the teacher tends to teach the way that they were taugh, the “old way”, without seeing how effective and easy it is to use new technology. They struggle to make meaningful changes throughout their professional core and improve their way of teaching. It is important to increase access to educational technologies, break the traditional methods and dare to change those teaching styles into new and much modern teaching ways, facilitating teaching and learning. Teachers must change their attitudes leaving their tendency to rely on traditional teaching methods and “reflexively resist” curricular and instructional innovation in daily class activity.

1.3 IWB – INTEGRATION TECHNOLOGY IN CLASS

1.3.1 Determine students´ and teachers´ advantages and disadvantages while use the IWB in class activity

Students love technology, it marks a huge part of their daily lives, they are excited when they have it in their hands and are ready to interact with it right in front of them.

One of the most important advantages is the interaction that students have when working with the IWB according to some studies is that it helps in the process of learning, according to Betcher, (Betcher, 2009) it was indicated that there was a special integration and interaction between the teachers´ instruction and the IWBs´ help habilities in the instruction (Betcher & Lee, 2009). Students´ interaction with the IWB in class must be adequately monitored by the teacher, all the information presented to the students should be organized and showed slowly, so the students could

process and analyze the new information correctly. With the IWB, students are able to visualize information through flipcharts and obtaining responses from the students using voting devices. It is important that the teacher discusses the answers received, ensuring to obtain opinions from as many students as possible.

Interaction between students – the IWB – teachers is a powerful tool in class activity, and keeps the students´ desire to remain on-task according to (Cooper, 2003) and (Levy, 2002)**.** Although the use of IWB is a great tool for students´ interaction in class, there are some technical problems that difficult the use of the board. Sometimes students have difficulties to see the board from a certain distance, so they have to arrange the position of the desks and use curtains to solve the problem and finally that the teachers are not skilled enough in the use of the IWB as it is expressed according to Hall & Higgins (Hall.I. & Higgins, 2006). Teachers must increase their training process in order to master the operation of the IWB, this can give more confidence to the students if they have problems to work with it while they use it, or have any doubt on how to use it. The teacher should know how to operate properly the IWB, if not, they will loose a lot of time figuring out what to do.

Another great advantage of the IWB it is a great tool for distance learning education and communication. The IWB makes it very easy to include multimedia in the lesson. Its features allow to include videos, flipcharts, or pre-selected materials like something from sites like TeacherTube, You Tube, or Google Video, etc., and are able to search for them and view easily on an IWB. On the other hand, the use of multimedia applications are very easy to use jointly with the IWB, there is an inmense variety of possibilities, one of these is that every lesson, activity and didactic material show in class through the IWB can be recorded and playback, capturing the audio and the visuals, with every mouse-click and annotation made during class activity. This will enable the students and teachers to review as many times as the student needs (some students learn best via repetition) and also make the copies of the lesson for studying purposes.

Teachers can also save the lessons, they can share any of these materials later on the web, intranet or via physical copy.

The IWB opens new and great opportunities for distance learning, as students and teachers can be as far as they have to, but also very close, being able to be connected through the internet. From this they obtained many benefits like converting the lessons to podcast, which means to distribute (multimedia files) over the internet to playback on a mobile device or a personal computer.

The IWB can also maintain a collection of digital resources, called a Notebook, to refer to while teaching. It is possible too to create and store of your own digital content for use and reuse in the next classroom. Giving the ability to create questions and “reveal” the answers. It is possible to add identifiers and labels to images, capture screens, link to web sites and other notebook resources, and use video or flash to simulate events and motion.

The IWB open up a new level of interaction for the students by connecting classrooms around the world. The students are able to talk, share desktops or data, with other students worldwide, students are able to seach the web for interactive whiteboard lessons that were posted by the teacher. Distance learning and the IWB, there is no more distance, it is so as close as it can be and teachers with students are able to use also have a class being apart just by making conference video class and keep on their teaching and learning process as it is expressed in the National Centre of Technology in Education (NCTE, 2009).

There are also many more advantages to use an IWB in class:

- Learning English as a foreign language is more attractive and more interactive
- The excercises can be manipulated either by the hand or a special pen.
- Every work on the board can be saved
- It is easy to use complex visual material
- Students can save the lesson and use it later at home
- Access through the IWB to the internet
- Can use any software of the computer

- Many types of creative activities are possible
- Increase interation of the students
- Students are easily attracted their attention to class activity
- Everybody gets to participate and learn
- Students are not bored in class
- Creativity develops with the help of the features and abilities that the IWB is able to do.

There are some disadvantages too:

- Takes time to elaborate didactic material for class
- Teacher must be skilled in the use of the IWB as this will give confidence to the students
- It is possible to use one pen at a time
- High costs – it is an expensive tool
- If there is no internet, there is not possibility to surf the web with the IWB.
- Problems for connecting and syncronize it with the computer

1.3.2 Effectiveness of the IWB as a teaching and learning tool

The use of the IWB helps in great manner to students with limited motor skills or with special educational needs. They are highliy motivated by being able to show their skills and knowledge with the tapping and dragging facilities of the IWB rather than mouse clicking. They can enjoy board use thanks for his large forma. It is also easier for the students or teachers to run computer programs on the White Board. Using their hands, moving objects and words or letters, color, highlight, etc. English learning as a foreing language or any other subject is really an adventure, is totally different,

because, it is possible to use all type of material, videos, surf the web and make the class a lot more interesting. Also teachers can interact better with young students as the children can write on the board with their fingers rather than the pencils.

The IWB is one part of a digital learning system integrated with audio, video and surround sound speaker system. It is the most visible component and attractive part for the students.

1.3.3 Students´ self-evaluation.

During the observations made at some classes at Colegio Los Pinos, it was noticed that the students react more positively when the teacher uses the IWB to explain the English lesson. They are able to sing-a-long with the help of the IWB, and make excercises of matching by moving the correct words to the sentence. Asking for students´ opinion about this e-learning tool, many of them indicated that it is very nice to work with it, they want to participate more and pass to the board to do “things”, they really enjoy much more the class that is given with the help of the IWB than without it. Teachers also said that they enjoy the use of the IWB during class activity, as they see more interest of the students to the class.

According to Edith Manny-Ikan, Osnat Dagan, Tal Berger Tikochinski and Rachel Zorman, 2008, in Israel they conducted a research about “Using the Interactive White Board in Teaching and Learning – An Evaluation of the SMART CLASSROOM Pilot Project”, (Manny-Ikan E. D., 2008) the present thesis was based on this research, which studied the students´ attitudes towards the use of the IWB during two years. It indicated that the use of the IWB enhances in a great manner motivation to teach and learn. The students´ level of concentration is raised and the behaviour of the students improves because they think that learning with the IWB is “fun” and innovative. According to studies made by Cogill, Levy, Thompson, Morgan and Becta. (Cogill, 2002), (Levy P. , 2002), (Thompson, 2003), (Hall, 2005), (Morgan, 2008), (BECTA, 2008). They indicated thanks to the use of the IWB, students were much more engaged in learning, were more active, interacted much more with their classmates and teachers and participated in class enthusiastically. Students’ criticisms about the use of the IWBs were

that there are sometimes technical, the difficulty to see the board from a certain distance, and that teachers need more training in the use of the IWB.

1.3.4 Teachers´ evaluation of the contents

There are many studies that concluded with positive teacher attitudes towards working with IWBs. (Moss, 2007) found that teachers feel that if they work with this technology it makes them more up-to-date. The need to use this new e-learning tools not only ease the work load of teaching differently and faster, but also allows them to incentivate their students to pay attention and not get bored during class activity. It is very important to prepare the necessary didactic material in order to make the class interesting and the IWB offers so many options to do this.

During the observations to the teachers´ performance at Colegio Los Pinos while using the IWB in class, it was noticed that they really enjoy teaching and delivering the content of the lesson through the IWB´s help. Additionally, the teachers know how to use it, but its use was not as frequent as it would have been expected to be. During a conversation with each of the teachers, they said that they try to make the class as interactive as it can be making all the students pass in front of the board to use the IWB. They feel that class performance is much more active, the students participate more and are willing to give their best. They indicated that not all the subjects are given with the help of the IWB, but they think this should change. They say that it takes time to prepare a lesson, in the same way that it takes time to prepare the lesson in the traditional way. Miller, Glover and Avris, (Miller, 2004) who examined teacher attitudes in various studies, said that teachers find working with IWBs relatively easy, the only requirement is the desire to use the board and to be well trained in order to take all the advantages that this technology offers. Teachers found out that the preparation time for lessons is longer, but at the end, what is most important are the results, which are worthwhile, these are greater student motivation, concentration and enjoying of class. Using the IWB, the different learning styles (visual, tactile and aural) are able to handle and overcome difficulties, What is more, the didactic materials that will be used, can easily be adapted for children of

varying physical problems and different abilities, teachers are able to prepare better lessons or clearer presentations as learning materials.

Visual learners can see what is developing at the board. The IWB is a colorful tool, and students respond to displays where color is employed. There are many ways to use the IWB in classroom as from the experience obtained in this area in the Bristol Virginia Public Schools they said the following (Schools, 2014):

- Digital story telling
- Brainstorm
- Take notes directly into PowerPoint presentations
- Reinforce skills by using on-line interactive web sites
- Create a project calendar
- Teach editing skills using editing marks
- Use highlighter tool to highlight nouns, verbs, adjectives, etc.
- Use it with Kidspiration or Inspiration
- Teach students how to navigate the Internet
- Illustrate and write a book as a class. Use the record feature to narrate the text.
- Diagram activities
- Teach steps to a math problem.
- Have students share projects during Parent/Teacher/Student conferences
- Graphics and charts with ESL learners and special ed students.
- Teach vocabulary
- Electronic Word Wall
- End each day by having students write one thing that they learned
- Save lessons to present to students who were absent
- Create video files to teach a software application, a lesson, or as a review to be posted to the server or web. Example: How to create a graph in Excel or how to burn projects to CDs
- Use the built in maps to teach continents, oceans, countries, or states and capitals.
- Present presentations created by student or teacher

- Have students create e-folios including samples of their work and narration

Tactile learners can touch and mark at the board, thanks to a big format, which makes it easier for students to run programs by only tapping on the board instead of mouse clicking. It helps a lot the use of a special software that has easy and important features that will be used during class activity, According to Dr. Mary Ann Bell of the Teachers.Net Gazette (Bell, 2002) specifies that for tactile learners is possible to:

- Be able to mark on the board by writing with the pen or using one´s finger. Pointing out the important notes and making more attractive the class.
- Students or teachers, can “play” and move objects, with the touch of their fingers, if they make mistakes, they can correct them interacting actively with the IWB.
- They can move images throughout the board
- Some teachers with very young students obtain excellent results because they write on the board using their fingers than a marker.

Touch screen technology enables children with physical limitations and the blind to actively participate in the learning process. Students with limited motor skills can enjoy board use. The IWB has the hability of making the keyboard larger on the touch-screen to have more space, in this way the students with disabilities are able to reach the keyboard in an easier way and work adequately in class. The IWB works with a special software that works together with a Smart Notebook. This allows teachers to plan an interactive class, very creative lesson, while doing the respective explanations. Every annotations and highlight made during the class can be saved for next class, each student can have the access to this lesson, and print it if they need it.

The IWB technology is opening to a complete new world for the students with limited abilities.

Other characteristics include the audio. Audio learners tend to retain information more thoroughtly when it is reinforced through sound. With the IWB they can have the class discussion, lectures to assigned readings, voice recordings of previous lessons or a new one. An auditory learner will say it

out loud and then remember how it sounded to recall later. There are certain charactristics about the audio learners:

- Likes oral reports
- Not afraid to speak in class
- Likes to read to self out loud
- Is good at explaining
- Enjoys music
- Reads slowly
- Is good at grammar and foreign languages
- Remembers names
- Is able to memorize lines easily
- Is good in study groups

The characteristics of the IWB will give this type of students new learning possibilities by recording lessons or lectures, watching videos, participating in group discussions, using audiotapes for language practice and reviewing the audio of the class. The IWB is a clean and attractive tool, so students no longer need to use the markers which have a limited use.

Teachers´ confidence improved impressively, when using technological skills. They feel that the class runs smoothly and harmoniously, and children are less bored, more attentive and participative. They feel that the students have more fun while using the IWB. It is very important that the classroom is adequately equipped with an IWB, a computer or a laptop and that the school authorities are willing to give sufficient training and guidance to use this e-learning tool, supporting pedagogical principles. Teachers must take a lot of time in order to prepare the class, and also they need extra time to prepare the lesson plans, plus the rest of daily activities in school must be accomplished. For this reason, the work is hard, but when they see the results obtained with the students is valuable. Even though they spent a lot of time in the elaboration of the learning material for future classes integrating the use of the IWB. The teachers at Colegio Los Pinos noted that this e-learning tool gives them a great variety of choices and tools to prepare self-explanatory, attractive, understandable and creative lesson plans, resulting in an amusing, easy instruction, interesting and enjoyable class.

This contributes with meaningful changes from the traditional instructional methods to new and more up-dated ones.

Technology must be everywhere, specially in this classes, and teachers must use it in a daily basis. Is necessary that in Colegio Los Pinos put in every class an IWB.

CHAPTER II

LEARNING ENGLISH AS A FOREIGN LANGUAGE

2.1 PURPOSE

Knowing more than one language is a great advantage. People can learn languages at any age of their lives, but the sooner the better. If the child has an early contact with other language before adolescence is more likely to acquire a native pronunciation and understanding. According to Kathleen M. Marcos (Marcos, 2010), there are many benefits for learning a foreign language like for example:

- Knowing more than one language increases access to people and resources.
- The student who read and speak more than one language has the ability to communicate with more people.
- Travel to other countries and learn from different cultures.
- The student will be able to have a bigger competitive advantage and better job opportunites when they finished their studies.

In Colegio Los Pinos the teaching and learning of English as a foreign language is vital. When the students graduate, they obtained the International Bachelaurete, they also learn French as a third language in its curriculum planning, which adds a plus in the education that they receive. English is given in a daily basis through different subjects such as: science, literature, grammar. The Schools`purpose is to give excellent education in Spanish, English and French and graduate the students with the knowledge of the 21st Century thinking and learning skills.

2.1.1 Goals

Learning English as a foreign language is a process that will allow to the student to critically read, understand the meaning of the language adequately, use excellent word pronunciation and fluency. Students will be able to write, demonstrating competence in managing the writing process and producing excellent written products such as essays, or any other types of academic writing adequate use of idioms, vocabulary, correct grammar

usage and sentence structure using coherence, emphasis and unity. This will allow adequate communication of the meaning in written projects.

Other goal to learn English as a foreign language will be the speaking acquisition. Students will be able to develop effective speaking skills, so their classmates and teachers will be able to understand and communicate in conversations with clarity using pronunciation, stress, and intonation patterns allowing them an overall fluency. Students will participate in discussions and oral presentations using effective word choice, idioms, grammar and sentence structure, permiting adequate communication of what they are expressing. Students will be able to give an oral presentation, to integrate information from outside sources in a logical and graceful manner.

Other students´s goal of learning English as a foreign language will be the listening part. Students will be able to listen and understand the principal ideas and important details in any listenting context, with the hability to participate in discussions, lectures and social conversations. Learners will develop and ask questions in any conversation, will understand and respond and discuss adequately to any discussion of ideas into a conversation understanding properly.

Finally, learning English as a foreign language would be using the 21st Century education CALL (COMPUTER ASISTED LANGUAGE LEARNING), and the e-learning tools such as the IWB. Students like to be an important part in class activity and be able to express what they feel and think, their opinions, their desires, and this type of education allows them to do it.

Interactive classrooms are appropriate for the 21st centurys´ thinking and learning skills. According to Edith Manny-Ikan, Osnat Dagan, Tal Berger Tikochinski and Rachel Zorman, (Manny-Ikan, 2008) in their Pilot Project, and as Melamed and Salant (Melamed, 2010) who expressed about the integration of technology into educational systems around the world: “The school, part of whose task is to prepare the younger generation for the future, needs to recognize the world of these young children today and to know what will be required of them as they grow up. Among its responsibilities, the school has to develop in its students the skills that will be required of them in order to succeed to cope with the challenges that await them as they grow

up" (p. 6). The question will be what would be the skills that will be necessary for the educational system in the 21st Century in order to reach the goal to learn English as a foreign language? To answer this question, Melamed and Salant (2010) summarized the findings and created a list of the most important skills about the characteristics of the students of the 21st Century: The five central skills were as follows:

- Information skills (literacy): Skills that relate to the ability to gather, edit, analyze, process, and connect information.
- Higher order thinking skills: In particular, problem solving, critical thinking, and creative and entrepreneurial thinking.
- Communication and cooperation skills: The ability to work in a team, and to belong to various communities.
- Skills to use technological tools, despite the feeling that young people know how to do this.
- Learning skills: In particular, the development of autonomous learning.

Learning and the interactive classrooms are able to contribute the above skills detailed, which are the goals to learn English as a foreign language, and the IWB will have a great role in this process of teaching and learning.

Other skills for the 21st century education, is that students are able to develop a sense of self competence, free learning, create a vital process during the lessons by inputing critical thinking and by expressing their ideas. Students are able to gain ownership of the knowledge during this process. Therefore, the students of Colegio Los Pinos, need to use this skills in order to reach the goal to learn English as a foreign language. They need to use innovative pedagogy jointly with adequate technology. Students will develop adequately their thinking and learning skills as learners of the 21st Century.

2.1.2 Competences

Competence can be defined as the state or quality of being adequately or well qualified. The ability to use the learned English as a foreign language. The Common European Framework Reference (CEFR) is the basis for competence oriented teaching, indicated that there are different

competences that language learners use when they communicate, such as: The knowledge, skills and know-how, existential competence, ability to learn.

The CEFR also studies the existence of language competence that refers to the skills and knowledge. The importance of this system is set in learning teaching and assessment, which encourage to:

- The development of language skills, so the students could use the language more effectively.
- To examine and define what it is possible to do with a language.
- Helps compare the language level of individuals from different countries in an accurate and impartial way.

The CEFR also studies the existence of a communicative language competence referring to the knowledge and the skills:

- **Linguistic competences** and other dimensions of language as system; including lexical, phonological, syntactical knowledge and skills. A linguistic competent speaker knows how to use the grammar, vocabulary and syntax of a language.
- **Sociolinguistic competences** that affects all language communication: certain important rituals used within a community, social groups, clases, sexes, etc. The Sociolinguistic competence allows the comprehension of larger contexts of language and is able to expand language in a coherent whole.
- **Pragmatic competences** which refers to the functional use of the resources of linguistic and that are involve with interactional exchanges. This also deals with the domain of the cohesión discourse and coherence, that are able to identify forms, text, parody and irony.
- **Strategic competence:** its control implies to recognize and repair communication breakdowns, and to learn more about the language in context.

The student who is able to communicate successfully, can be considered him or herself to have communicative competence. This indicates that have the ability to interact well with others. According to Rizka Safriyani in her Conference 56th TEFLIN, (Safriyani, 2009) indicated that

Dell Heymes in 1972 create this term of Communicative Competences and described it into four mains areas:

- **Grammatical competence:** It is the ability of the speaker to use the different rules and norms of the language which include:
    - Phonetics : Pronunciation
    - Morphology : Word function and inflection
    - Syntax : Structure of language
    - Lexis : Vocabulary and semantics

Competence in grammar is the ability to express and know the meaning of the words. (spelling corrections, sentences, words, etc)

- **Sociolinguistic competence:** Is the ability of speakers in elaborating sentences according to the communicative situation. The speakers know when, where, how, or whom to say something. The speaker is able to produce and understand if any sociolinguistic context.
- **Discourse competence:** Is the ability of the speakers to use different types of discourse. Users know what is being referred to in different contexts. (Safriyani, 2009)
- **Strategic competence:** It refers to the knowledge speakers have to maintain communication. This count with strategies of language users to be understood and to understand others. Expressions, mimics, gestures and intonations. The better it is master the communication, it will enhance the effectiveness of it.

It is important to develop communicative competence for an appropriate teaching of a foreing language. The teacher must be aware to use the communicative competence in classroom. The activity in class must be designed to engage students in the functional, authentic and pragmatic use of the foreign language for meaningful purposes. The teacher should consider the accuracy and fluency of the foreing language in classroom activity. Students must use the target language, productively and receptively. The teacher should be guiding but not controlling it. Communicative competence plays a very important role in the modern pedagogic field.

In order that the students be successful in acquiring communicative competence in their foreign language, the teacher could use the following learning activities:

- Audiovisual recordings: Students can view as many times they want the audiovisual recordings of their own communicative interactions.
- Role-play: Is very effective way to develop student´s communicative competence, mainly in the strategic and sociolinguistic competence.
- Speech Act or performative use of language: deals with the formulas and conventionalized expressions of the foreign language.
- Interactive language instruction: Involves the teacher and student be engage in activities that create an environment for language use. Helping in the development of the language. Teacher – student provide feedback.

2.2 CONTENTS

There has been increasing interest in the instructional approach known as content. According to Met.M. (Met, 1994) the students can develop content knowledge at the same time as they develop language skills if they are immerse in a foreign language. Students must be provided with content instruction in order to develop excellent levels of academic language proficiency. It is important that all the teachers who work with foreign language students must enable their students to make academic progress while they are learning English. Good teachers must be good planners. When the teacher is planning he or she requires high levels of thought, this is the clue for a successful teaching. Teachers must see each lesson in terms of long-range and short term instructional goals. They must consider the learner´s viewpoint, options, abilities, problems, and learning styles; all this factors influence with the lesson to be delivered. Teachers must plan with precision, knowing clearly what they and their students will be doing in each lesson, thinking in advance the problems and difficulties they will face and ensuring that the time and the didactic material will be available for the lesson.

Ellaborating the contents for students in a non-native language requires to do all of the above detailed plus other planning tasks such as:

selecting instructional material that will be proper to the students´needs, elaborating instructional activities and excercises that make content accessible, plan for increase of language, sequencing objectives and planning for assessment. Regarding to the sequencing content objectives, the teacher must develop a sequence following a content objectives, taking into account the foreign language demands and the instructional objectives. Teachers may use the technique to reorganize the sequence of content objectives that required extra effort, and use them later when they see that their students are ready to increase their language proficiency. The teacher can use visual or hands-on experiences, oral or writing skills to reach their goals in content.

Teachers need to plan content lessons that contain language objectives in two types of language: content-obligatory and content-compatible. In content-obligatory the students must learn the language in order to master the specific objectives content. On the other hand, content-compatible language is easily taugh through a content lesson.

Content-based foreign language learning is very important to acquire content mastery to the learners. Teachers must work collaboratively with other teachers, they must incorporate the necessary language skills by using excercises or any type of activity during class in this way they will make the lesson and the language comprehensible for the students. Teachers can use concrete experiences that aids in the acquisition of language. The objectives for content-compatible language are very important for the lesson planning, to increase the growth of the language and the skills. The content-compatible objectives are produces by three sources:

- Teacher´s observations of student language skills and needs of the classroom.
- A foreing language scope and sequence that indicates how the students are acquiring the foreing language and skills.
- The demands of the content curriculum to be taugh in future lessons.

Once the content objectives are defined, teachers must plan their activities in an engaging, attractive – collaborative-cooperative way and experiential manner. The activities that will be used for instruction must be

both cognitively demanding and context-embedded. The task must be inderstandable. Teachers could use listening activities too. Cumming (Cummins, 1981) argues that the challenge of the students in a foreign language is to provide experiences in both context-embedded and cognitively. It is important that teachers design their activities in a cognitively engage way, and also plan instructional experiences that provide the student communication.

Teachers plays an important role in the meaning process by using context-embedded instructional tasks and by interpreting student´s responses if the student´s language proficiency is too limited. An indicator of effectiveness in the students is by his or her communication. Comprehension is important in the learning of content and the teacher must be sure that the student understand the lesson.

It is not easy to develop content knowledge and concepts, but teachers must use all type of tasks and roles in order to ensure that their students are learning. Teachers must monitor student performance, use decision making, use all types of learning strategies and structure the environment to ease language learning. Teachers must use the following tasks:

- Teachers teaching a foreing language must be engage permanently in negotiation of meaning process. Make the students understoond and understand each other. Is a collaborative process. If its unclear what the teacher says, the student will not acquire the knowledge and skills of the curriculum.
- Teachers must make language and content accessible, being effective in the communication.
- Teachers must help students to communicate, enhancing conveying meanings. Students must use the verbal and nonverbal means of communication. Obtain a rich interpretation of students.
- Teachers must expand and refine student´s language as they continue to develop proficiency and skilled in the foreign language. Interaction student-teacher is very important.

- Teacher must monitor content mastery and language development during lesson activity for effective formative evaluation. They must observe and analyze to student´s verbal and nonverbal performance.
- Teacher must offer instructional decision making to the students. Teacher´s repertoire must be rich of instructional approaches to foreing language teaching acquisition, be flexible to respond to the needs of the students, making concepts understandable using a variety of learnng preferences such as the tactile, visual or knesthetic, etc.

Language should be acquired through content learning, and not be apart from content learning, and content may be learned through language.

2.2.1 Cognitive

Cognitive skills determine an individual learning ability. (Cognitive Skills Determine Learning Ability, 2014) This are mental skills that are use in acquiring knowledge process. If the cognitive skills are strong, the acquisition of knowledge is fast and easy, if they are weak, the acquistion of knowledge becomes a struggle. It is important to know how to process the information adequately. Lack of cognitive skills provoque the inability to concentrate or focus, memory loss. So performance in school will not be effective. There main cognitive skills are: concentration, perception, and memory.

- **Concentration:** is the ability to focus the attention to a certain thing, thought or any subject. This ability is very important to achieve the goals to finish any work, project, homework, exam. If the ability to concentrate can be improve, it will allow a person to do the things correctly avoiding problems. Concentration while studying speeds up comprehension and learning the theory. It is possible to focus on the goals and be able to achieve them faster and easily.
- **Perception:** is to gather information through the sensory receptors – ears, eyes, tongue, skin. Is the interpretation of what is sensed. Interpret music, what is heard. Little experience may cause to misinterpret what she or he has sensed. The person is able to absorb and process information by improving speed and accuracy of perception.

- **Memory:** Is the most important of all cognitive functions. The ability to recall in short or long term, will ease to retain thoughts, ideas, concepts. Short-term memory carries difficulties to store information for later retrievement, and could lasts from minutes to days, week or years. Long-term memory recalls general worldwide information, past experiences, rules. Visual memory is the ability to remember what the person has seen. Auditory learning is the ability to remember what the person has heard. There are studies that says that the eighty percent of what we learn is through the eyes, so improving visual memory will obtain great advantages in the student´s learning ability.

Bilingualism improves cognitive development, but first it is important to achieve high levels of linguistic proficiency in both of their languages. Knowing more than one language helps to expand the access to people and resources. Multilingual persons have the advantage to communicate with more people, read more and if they need to travel, be able to express themselves. Students with this abilities are able to communicate with others in different cultures, expands their view far beyond their own communities and are able to find better job opportunities.

There are studies that indicates that students who learn a foreign language knowledge, are much more creative and better when they need to solve a problem than those who do not know any other language. Other studies indicates that bilinguals achieve greater intellectual flexibility. (Bruck, 1974) and (Hakuta, 1986). Other findings of being bilingual help in areas that include metalinguistic awareness, creativity, concept formation, social sensitivity, problem solving, perceptual disembedding, understanding complex instructions, memory, classifying objects, science concepts, and role taking.

2.2.2 Procedures

Many aspects that leads the learning of English as a foreign language in an effective language use are the oral communication, pronunciation, grammar instruction, listening comprehension, reading comprehension, and writing. A good communication involves appropriate structure or autonomous

interaction, listening, oral practice for the learning of grammar, and teaching the sound system. Other procedures to learn English as a foreing language are reading excercises, written exercises, and flexibility and expression in writing.

2.2.3 Attitudes

When learning English as a foreign language implies two social psychological variables – attitude and motivation – this plays the key role, it Is important to consider the the attitude of the learner towards language learning as a foreign language, according to Verman (Verman, 2005). According to Gardner (Gardner, 1985) the term “motivation” means “referring to the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experiences in this activity (p.10)” According to the Merriam-Webster´s Dictionary and Thesaurus (2007) (p. 528), motivation is:

- The act or process of motivating.
- The condition of being motivated.
- A motivating force, stimulus, or influence

Gardner describes two different kinds of motivation in foreign language learning situation:

- Instrumental motivation: When the learner wants to learn a language in order to reach immediate goals, such as obtaining a new job or passing an exam. His or her motivation is of instrumental kind.
- Integrative motivation: When the motive to learn a language is to communicate and integrate with people from another culture who speak the same language.

Motivation is the key word to learn English as a foreign language. According to Gardner and Lambart (Gardner R. L., 1972) – when a language is learn only for the utilitarian purposes, the success is a foreign language is supposed to be lower than if it is learnt for the integrative purpose. Motivation is a powerful instrument that motivates students to effectively learn English, because they pursue a goal get a good job, travel, etc. Another reason that needs to be considered is the English for Specific Purposes or ESP, which is based on the needs of the students pursuing different

coursed. If a student of medicine is only taught grammar with the motive that he or she wants to communicate with the native people, he or she might not show any progress unless he or she interest in grammar. Instrumental motivation will help the students to reach their goals.

It is also important to explain about the impact of “intrinsic” and “extrinsic” motivation. “Intrinsic” motivation means the desire to engage in the learning activity for its own benefit. Intrinsically motivated students learn faster, are self-motivated, have high aspirations and are goal oriented, showing better results. On the other hand the “extrinsic” motivation means motivation that is connected from external incentives, their learning is more likely to become mechanical. Teachers must recognize this motivations and which one is more predominant with the student, this findings will help them teach an effective English learning approach. The teacher must also understand their student´s weaknesses and needs, in order to help them develop properly in class.

Attitude is a series of beliefs developed in certain circumtances in a given sociocultural setting. The student must have a positive attitude which will ease learning. If the student does not want to learn and does not have a positive attitude, will not obtained any positive result. Learning English as a foreing language is effected by the attitude and motivation. Students will have different perceptions of their class, teacher and curriculum if they are motivated, demotivated or amotivated. Their perceptions are responsible to for their attitudes. The student´s perception of the class, peer group, teacher, syllabus and his or her awareness for future needs affect his or her attitude to language learning.

The attitude of the teacher plays an important role. Nowadays, during class activity have change their role from being a controller of the class to the facilitator. It is important to accept mistakes in the language use and this is part of the language learning. Teachers motivate and help to their students use more language so the outcome of the learning of the students will be influenced by the interpretation of teacher´s interpersonal behaviour. If there is a good relationship student-teacher, the teacher will empathize with them, understand their point of view, their problems, and the students react

positively in their motivation level to interact in class activity. The teacher is a friend that they count with, someone who understands them well. The teacher must recognize his or her errors while using English because mistakes are a natural part of learning a foreign language.

Students wants a teacher who can motivate them to learn English as a foreing language, they need to see that the teacher is goog at English and have the ability to correct their mistakes in an appropriate way – not hurting anyone´s feelings. Students want to have in class an informal environment, where they can learn with fun.

2.3 METHODOLOGY

Foreign language education has changed considerably, there have been many language education studies that have been created, developing different theories of foreing language learning. It is a very common situation that most, not all, language classes contain students of mixed abilities, this occurs due to different learning styles, different learning speeds, and variation of motivation. The teacher faced different levels of ability, has to handle the problem and meet the needs of every student. So there there are different types of approaches, methods and techniques to fulfill every type of teaching and learning English as a foreign language.

2.3.1 Aproaches

The Communicative approach:

Also could be called communicative language teaching, started in the 70s and 80s. Change from the mechanical practice of language associated with the audiolingual method. It uses activities that engage the student in a more meaningful and authentic language use. Classes tend to be more “communicative”, containing excercises where the students communicate, tasks are develop thanks to the interaction with their peers. Students can work in groups, pairs, they are given a communicative task, the role of the teacher is as a facilitator and monitors without interrupting, then provide feedback in the form of post-activity error correction. The class is more task-based approach. Teachers must input motivation and purposeful communicative activities and principles while they teach.

Natural approach:

Was developed by Dr. Tracy D. Terrell, professor of linguistics at UC Irvine and UC San Diego and Dr. Stephen Krashen, professor emeritus of linguistics and education at USC. This approach is designed to develop basic communication skills. To develop language there are different stages of competence: Comprehension, Early production and emergent language. The Natural Approach foreign language classes the students progress naturally from one stage to another.

- **Comprehension Stage 1:**

  Children acquire their first language by spending thousands of hours just listening before they can say a word. The use “baby talk”, listening comprehension is the base of language learning. We learn how to speak, because we understand what is said.

  In a Natural Approach class students recognize the meaning of words used in context and learn to guess the meaning of utterances without knowing all the words or the grammar. On the other hand, teachers will create a nice classroom environment so that the student will want to guess at meaning and also the teacher will limit the correction of the student´s speech to utterances that are incomprehensible.

- **Early Production Stage 2:**

  The learner´s speech will contain many errors. Production will only increase errors and forces the learner to translate from his or her native language. Will be able to produce yes-no answers to questions, lists of words, short phrases.

- **Emmergent Language State 3:**

  Receiving exposure to meaningful language, focusing on the content and not on the grammar. The learner grammar will improve slowly in vocabulary and grammar. Students needs different amount of exposure to language in order to acquire the new linguistic system. Students will be able to participate in dialogues with classmates, discuss, narrate, read, TPR to commands of the teacher, watch videos, play games, listen to music and everything understanding the language acquired.

2.3.2 Methods

The most important methods of teaching and learning English as a foreign language are according to the traditional methodologies (A Humanistic Approach to E.F.L.):

Direct Method:

Teaching is performed only in the target language. The student is not allowed to use his native tongue or mother tongue. In this method it is emphasized the good pronunciation and grammar rules are avoided.

Grammar-translation method:

The learning of the foreign language is made by translation to and from the target language. The rules of grammar are memorized and extensive lists of vocabulary with their meanings have to be learn by heart. Oral ability is not emphasized.

Audio-Lingual Method:

The practice of the target language through the use of dialogues of every situation is use a lot. The language has to be first heard and widely drilled before being seen in its written form.

Community Language Learning:

This method build strong personal links between student-techer so there is a lot of talk in the mother tongue and then the teacher translates for repetition by the student.

Immersion:

Students (ESL) receive during the school day other subjects like math, geography, science, etc. through the target language, English. In this way they are immerse to a great extent in different situations at school.

Task-based language learning:

The completion of a task is the focus of the teaching. The student must use the learned language to complete the task and there is few correction of mistakes. Tasks can vary as reading, surfing the web, listening to videos, teach to their classmates vocabulary, etc.

The Lexical Syllabus:

This method is based on an analysis of language through a computer, this identifies the most common and useful words in the language and its uses. The syllabus teaches these words with great emphasis and puts in use of real things.

Suggestopedia:

Was originally develop in the 70s by the Bulgarian educator Georgi Lozanov. Memorization in learning through suggestopedia could increase up to 25 times over the traditional learning methods. The approach was based on the power of suggestion. Positive suggestion would make the learner more receptive, and will be more stimulated to learn. Lozanov indicated that the optimum state for learning is to be focused and relaxed, using music, a nice environment and an excellent relationship student-teacher. While the teacher reads, it was a classical music background, this were called “concert reading”. The rhythm and intonation of the reading matched the rhysthm of the music. It was used the Baroque music, taking this into less prominent role. Students while listening to music were seated in seats rather than classrooms desks. There is little evidence of success with this approach. Perhaps the most important issue of this is to create conditions in which students are alert and receptive and have a positive motivation.

Silent Way:

Started in the 70s by the late Caleb Gattegno. His work could be stated as:

- Learning is facilitated if the learner discovers or creates rather than remembers and repeats what is to be learned.
- Learning is facilitated by the use of physical objects.
- Learning is facilitated by problem solving involving the material to be learned.

The word “silent” is based on the idea that the teacher should be as silent as possible during class activity and encourage the learner to produce as much language as possible. The problem-solving feature of silent way may helpful as it leads indirectly both to the idea of task-based learning and to the use of problem-solving excercises in language classrooms.

Total Physical Response (TPR):

Developed by the American professor of psychology James Asher (Bowen, 2000 - 2013) in the 60s is based on the theory that memory is enhanced through association with physical movement. It is also associated with mother tongue language acquisition that responds to commands of the parents such as “come here”, or “go out”. The TPR is the approach that teaches languages mainly based of listening and is linked to physical actions which are used to reinforce comprehension of specific basic items. Students physically perform activities, requiring to carry out the instructions, ex. “open the door”. Those activities must be fun and motivating by offering a supportive classroom environment. This approach have some weaknesses: First, from only practical point of view, a experienced teacher is not able to sustain a lesson involving commands of PR for few minutes before the activity becomes repetitive for the students. Secondly, it is very difficult to give instructions without using imperatives, in this way the language acquisition is restricted to this type of form. Thirdly, this approach will not exceed beyond beginner levels. Fourthly, the importance of the language used in TPR are needs of the real world, this is questionable.

Finally, working from listening and response stage to oral production will be manageable in small group of students, and impossible to handle in a class of more than 30. The activities of the TPR must be higly motivating and linguistically purposeful. Students may responde adequately to kinesthetic activities that will serve as memory aid. It is important to use games using directly and undirectly TPR principles.

- **Active learning:**

  Is learning which uses and challenges the students´s thinking by using real-life and imaginary situations. The curriculum areas can be enriched and elaborated through active learning activities and excercises.

- **Integrated Co-Teaching (ICT) classrooms:**

  Teaching and learning without the use of a computer are not efficient. Today children are immersed in the new information and communications technologies, which carries implications for learning and teaching. It is

important to learn through digital media, is the key to develop the skills for learning, life and work that the students of the modern work want.

- **Co-operative and collaborative learning:**

  Modern classrooms are not the quiet one, learning classrooms have changed radically over the years, todays learning if more effective when learners are able to discuss ideas, to analyze, solve problems, question, without the assistance of the teacher. Student´s learning is best when they have opportunites to learn from each other and are shown to do so effectively.

- **Peer education:**

  Students are actively involve in each other´s learning. This approach describes a series of initiatives where students of the same age group, culture, background, social status, share their knowledge among themselves. Peer education is increasing its popularity because it provides information and advice to students in community-based settings. Students and teachers take and equal role in informing, shaping and passing on information. The benefits of peer educations include positive changes in confidence, attitudes, skills and knowledge. Aids personal development and is effective in permitting low achieving students to fully participate and succed in educational activities.

2.3.3 Techniques

Nowadays, teachers are able to use many options of teaching techniques. This can help them to enhance their class activity, obtain the attention and motivation of their students and what is most important to achieve their teaching and learning goals during the school year. It is very important that the teacher is aware of the learning style of each students. In this way this will ease the teaching and learning process. The teacher must have eye contact in the classroom with the students, can recognize if someone is having trouble in the comprehension of the exercise and immediately reinforce it with more explanation to clarify any doubt. Teachers can encourage to their students to interact, not just talk with them and feel free to express what they think, or need extra help. If the teacher thinks that someone is failing, is imperative to give to the student more extra time to

clarify and reinforce the knowledge, the teacher must create a safe atmosphere of confidence and comprehension student-teacher.

There are more techniques in conversation or oral activities of teaching English according to the TESL Journal - EFL/ESL Teaching Techniques (Journal., 2013) they indicate the following:

- Encourage English expression through script-based improvisations; in this way students are given any theme to speak and they can improvise and force themselves to use the target language.
- Use the communicative language teaching in a multimedia language lab.
- Role playing simulation
- Brainstorming before speaking tasks.
- Use dialog performances
- Design simle interative tasks for small groups
- Improve authentic speech in classroom discussions

Techniques for improving grammar:

- Use structural drill in remedial teaching
- Do as much as possible of contextualization excercises
- Practice tenses and verb conjugation in a matching exercise
- Teaching learners to “notice” grammar
- Use simple poems to teach grammar
- Helping students with modals

Techniques for listening English:

- Use textbook listening activities
- Dictation drawing
- Use real audio to improve real listening in English class
- Dictation
- Focuse listening with songs

2.4 RESOURCES

Leaning and teaching English as a foreign language is very challenging, but there are so many and different resources available for teachers and students in order to acquire the necessary knowledge to learn and teach English.

2.4.1 Physical

Teachers can use strategies for teaching to their students while they learn English. According to Judie Haynes (Haynes, 2010), there are certain strategies classroom for teachers to provide an effective learning for students that studies English as a foreign language: First, they should provide a comprehensible input in the elaboration of the curriculums, in this way the learner is able to understand the message that is conveyed. The teacher needs to speak slowly, use gestures and body language in order to obtain the attention and motivation of their students who attend the class. Second, It is important to make lesson visual. The use of visual representations such as maps, graphs, vocabulary, drawings, charts, in order to introduce the new lesson. It is great to use graphic organizers, to teach to the students how to organize information and retain it in their brains. Third, is is important to link new information to prior knowledge. Teachers must take into consideration what schema the students bring to the class and to link instruction to their world experiences, culture, or personal habits. Teachers must know how culture can impact the learning of their students during class activity. Fourthly, teachers must determine key concepts for the unit they are elaborating and define language and content objects for each lesson. When teachers write an adequate key concept for a unit in a friendly-student manner, language will be acquired better, the teacher can write the content objective of that class on the board. At the end of the lesson the teacher can ask the students if the objective was reached. Teacher also must set language objective for every class in order to learn new vocabulary. Fifth, It is very important for teachers, that when teaching new vocabulary, they must reinforce in the practice and pronunciation of the new words in texts or in the subject matter. Sixth, Teachers must use the cooperative learning strategies. Work in small groups is very beneficall to learners of a foreign language, each group will have a job or a project to present or to participate in. Seventh, teachers must be creative in the testing and homework of their students. Content area homework and assessments needs to be adequately elaborated allowing the teachers to use alternative types of assessment such as oral, drawings, physical response, manipulatives as well as well designed

tests. Homework and assessment must be directly linked to classroom instruction, the students must know what to study.

2.4.2 Technological

The use of technology can enhace any classroom to a certain extent, there are amazing practices for English learner technologies that sets the difference between using technology for show or to optimize learning. According to Peter & Barbara A. Lafford (Lafford, 2005), they indicate that with the computer and adequate programs for English learners, students are effectively engage in activities and lessons, to be performed at her or his own pace. This programs are interactive, multi-culturally relevant, collaborative, interactive, content-based, authentic. Students can practice in a safe environment place and they learn to master oral and written English language. Students with different styles of learning are able to learn at their own speed either with visual presentations, oral activities or written works. Teachers must evaluate each student and modify content and presentation to fit the particular need of each one of their students.

English is reportedly to be the most “learned” foreign language worldwide, according to Gary Moterram, (Motteram, 2013) the range of technologies available for use in language learning and teaching has become very diverse and the ways that are being used in classrooms around the world. Technologies has become the central part in every class activity. These digital tools are established and known as Computer Assisted Language Learning (CALL) that goes together in an increasing part called core part of English language teaching (ELT) in general. Digital technologies have taken a hold in society in general and are used effectively. It has had a great impact on the development of pedagogy and in many cases it is seen that has enable teachers to re-think what they are doing or not. Computer-mediated communication (CMC) technologies have play a very important role in the teaching of foreign language, allowing students to acquire language in meaningful contexts for specific purposes.

Internet is a key tool that helps the teacher, with multi-media websites plus some imagination, teacher presents the lessons in different ways,

shapes, colors and languages. Computer and internet helps the students to review the material, practice the lesson the times they want, learn from mistakes. Today in every school students uses the internet, email and instant messaging (IM) in order to communicate with friends, but also with their teachers. Today students have a positive attitude towards de CMC use to acquire the target language. The wired connectivity is a network that is composed by a desktop or laptop computer which is connected to the internet with cables so it is “wired” and the wireless connectivity or called “Wi-Fi” (wireless fidelity). It is important to mention to the Tablet PCs which provides an alternative with similar functionality to a laptop or notebook, with a special LCD panel with touch screen habilities. This tools plus specific softwares allows the students to learn.

Students are able to use the same traditional strategies that involves rhymes, stories, songs and use it through the internet in which they can find a great variety of recorded songs, podcasts, videos, talking electronic books, all this strategies will help them in the pronunciation and will be able to acquire and reinforced with new words. They are able to record themselves and play later for reviewing what they have done, looking for grammar errors and improve their pronunciation. The use of audio recorders will help to reinforce the learning of classical or popular songs.

There are also e-tools that ease the language practice, students needs to practice target language in as many ways as possible. Technology has the power to overcome this limitation and give the learners the chance to communicate among them and with others around the world.

Students can use the synchronous solutions such as the video-conferencing which is a face-to-face interaction through online virtual worlds, which promotes language learning by sharing cultural experiences in a common language, with debates, role play, performances. Other synchronous solution is the Instant Messaging (IM) it requires a sender and a receiver to be online at the same time. Similar option is the SMS text messages.There are also virtual worlds were they can work in collaboratively developing content like a chat room, written interaction is used. Another asynchronous tools, which is not require to be online at the same time is the

email, blogging and the collaborative development of wikis. These have an important role to play for the co-creation of the contents. Learners in this spaces are able to interact with other classmates by sharing compositions, essays, exchanging texts. This helps the students to produce outputs and they will develop competent language skills that helps increase their knowledge.

The use of labs or learning centers is the most traditional setting, with the use of software-based and on-site, the lesson is taught entirely online, this also is a solution for distance learning. Connectivity is the clue factor to succeed in this type of environment teaching. Today´s technologies, the English learner can have access to his or her class equally well at home, hands-free in the car, etc. anywhere where is available a laptop or tab or mobile device with wi-fi or connected to internet. The ability to download, capture and listen to lessons, use audio-clips, videos and podcas, gives an extra feature to learn outside the classroom. Education is expanding far beyond classroom walls and project didactic material using the internet and mobile communications devices has improve our view of getting and education without any boundary.

Increasing reading and writing with technologies with the help of digital literacy is particularly significant, the availabitliy of digital texts helps the understanding and learning through media-types. This digital text and electronic books (e-books) in interesting environments can promote reading habits. The students are able to access to electronic dictionaries. There are special softwares that can register track, measure abilities, and record progress in reading. Students are also motivated to write their own personal things, for this there are many tools to help writing, the computer with the different types of software gives the students a whole world of experiences and practices for the acquisition of the language.

The books are the most amazing experience to learn new things, in the written form or to oral equivalent. There are versions of text in oral a well-produced talking books which brings texts alive through the use of voice characterization, expression, intonation being one of the few ways of modeling authentic oral language to a foreign language learner. There are

available for the students audio Cds or online oral version of the texts. Digital texts can be imported into e-book readers, and this is possible using a software screen-readers or text-to-speech applications that are available for the students.

The use of MP3 audio programs where is possible to download the lessons from an English translation internet to the ipod. Thanks to its versatility you can go anywhere and learn while listening to it. The T.V. and radio are also being used to watching and listening to English television, which is an excellent way to learn English, also when listening to the radio, the ability to understand and learn by heart the songs, will help you with the pronunciation.

So what else can do technology to help foreign language teaching and learning? According to Mary Ellen Butler Pasco (Butler), Ed.D Systemwide Director of TESOL and Language Education Professor, Shirley M. Hufstedler School of Education, there are some features that technology offers :

- Provide interaction, communicative activities, real audiences and authentic materials.
- Give comprehensible input and output
- Support cognitive abilities and critical thinking skills.
- Utilize task-based and problem-solving activities
- Provide sheltering techniques to suppor language and academic development.
- Facilitate focused practice for deveopment of reading, writing, listening and speaking skills.
- Be student-centered and promote student autonomy.
- Use multiple modalities to supoort various learning styles and strategies.
- Support collaborative learning
- Increase motivation and self-esteem
- Foster understanding and appreciation of native cultures
- Provide appropriate feedback and assessment
- Connect to the home and community

- Serve as a resource for content-based ESL and EFL (English as a Foreign Language) instruction
- Provide professional development opportunities for teachers of second language learners.

2.5 EVALUATION

Evaluation or assessment is an important part of learning and teaching process. Teachers sees the whole picture of the student´s progress and achievements giving them a starting point, the teacher is able to identify next steps in learning. This evaluation must follow the purposes of learning and shows the principles of curriculum of excellence. In order to achieve this, the teacher develops coherent approaches to planning, learning, teaching and assessment and to share information of the progress and achievements obtained by the student.

Teachers must evaluate to their students and find out what they know, how they are and what the teacher must do next in order to increase their knowledge, comprehension and skills.

2.5.1 Diagnostic Assessment

Is also known as a pre-assessment, it gives to the teacher information of prior knowledge before beginning a learning course or activity. This assessment provides to the teacher a baseline to know how much the student remembers what she or he have learned after a learning activity is finished. Language teachers knows the importance of diagnosing their student´s strengths and weaknesses in an early stage, in order to ease the efforts to adapt instruction to the needs of the student. In the past teachers use to wait until they get to know the students pretty well in time. According to Daniel Reed (Reed, 2006), he indicates some diagnostic assessment in language teaching and learning: The problem came when the students complete their regular coursework, by the time the teachers knew what their students need most, was often too late to do much about it. J. Charles Alderson (Alderson, 2004) wrote a book called Diagnosing Foreign Language Proficiency, in it he emphasized the research and practice in diagnostic assessment, he also described the following basic features of diagnostic approaches:

- **Identify strengths and weaknesses in a learner´s knowledge of use of language**: Sometimes students have the ability to use particular language forms, and the teacher expects to see adequate usage of the language in any type of test, but occasionally, the students can do better in oral or written presentations and vice-versa.
- **Have a focus on weaknesses that leads to remediation in further instruction:** Diagnostic testing starts where proficiency testing ends. If a student obtain a poor performance, the teacher might want to diagnose why those results and make judgments regarding what areas are really difficult and important. With this information in mind, the teacher will know what things will prepare to teach. Teacher can not diagnose to all the students, he or she needs to be selective and identify the areas that are causing difficulties and focuse of them. In order to make a diagnostic testing early in a specific period of time, the teacher can choose material that was covered in various chapters of the text.
- **Enable detailed analysis and a report of responses to items or tasks:** When the teachers discovers the specific problem maybe in a grammatical aspect, the teacher will need to use several examples and explanation of that specific problem in the diagnostic. All the findings will need to communicate to the student in the form of a report and be able to discussed it with the student or to create a student profile for each one.
- **Provide feedback that can be acted upon:** With the diagnostic results, the teacher must ellaborate a list of actions that the student can do to fix the problem. Ex. do more excercises, go to the lab, etc.
- **Are based on content covered in instruction – or content soon-to-be covered**: The teacher will diagnostic at the beginning of the course based on “content-soon-to-be covered”, this could be base on theory.

- Diagnostics are less likely to be “authentic” then are proficiency tests; more likely to be discrete-point, focused on specific elements. This proficiency tests must be authentic, once the teacher discovers the weaknesses will have to look at language forms.

Diagnostic assessments informs teaching and guides learning the results are not used for judgmental or evaluative purposes, it shows how their own approaches are used with their performance assessment, in this way teachers can help students to discover their limitations and progresses.

According to Paul Pimsleur he designed his Pimsleur Language Aptitude Baterry and the scores could be reported in five categories:

- Student´s overall school performance
- Student´s own estimate of his or her motivation or interest in studying.
- Verbal ability
- Auditory ability
- Summary of the above items

It is important to see that the diagnosis is an excellent teacher´s tool to find out the strengths and weaknesses for the purpose of addressing the learner´s needs. Helps learning, accomplished those purposes by individualizing the assessment of the students, they are not graded only facilitates learning. Teachers then can design to follow-up activities.

2.5.2 Formative Assessment

The formative assessments usually takes place during the learning activity process in class. It provides to the teacher information regarding how well the target objectives are being met of a given learning activity. “Formative assessment are ongoing assessment, observations, summaries, and reviews that inform teacher instruction and provide students feedback on a daily basis.” (Frey, 2007) The regular use of formative assessments is very important in every classroom, they serve to guide the teacher be able to measure how much learning has taken place in that period of time, knowledge and skills are monitored its progress, and if his or hers goals are effectively reached. The purpose of the formative assessment or

assessment for learning, is to gather information and focus on practice. They are not graded, they serve as practice for the student. With the results obtained, the teacher is able to make future decisions and correctives upon the instruction, provide feedback to the students who are able to improve their performance in order to do better next time. Teacher facilitates the learning process and the students are able to reflect on their individual learning performance in class.

There are many types of assessment strategies that can help the teacher to gather information of the student´s progress in class, according to Judith Dodge (Dodge, 2009), the following assessments and tips can help:

- Collaborative activities:

  Students can share with their classmates their understanding of concepts acquired in classroom.
- Visual representation of information:

  Students can use pictures and words to retain and memorize information for later retrieval. Teachers use this “dual code” as an aid to address preferences in learning style, classroom diversity and different manners of “knowing”.
- Lists, charts, and graphic organizers:

  The use of this organizers will help the students to organize, note the relationship and make connections of the information received.
- Summaries and reflections:

  Students increase their metacognitive skills by stopping and reflecting on what they have read or heard and reach their own conclusions of their learned experiences.

  The elaboration of the assessments must have the following information to measure learning progress of the students:
- Introduction: A description of the strategy and the relavant research behind it.
- Step by step instruction: Steps for introducing and modeling the strategy for students.

- Applications: Suggestions regarding what you can assess with the strategy.
- Tips for Tiering: Specific ideas to the strategy for supporting struggling learners and challenging advances lerarners.
- TechConnect: Ideas to integrate technology with the formative assessment.

Aditional information is indicated in the “25 Quick Formative Assessments for a Differential Classroom” by Judith Dodge who indicated the methods made by Thomas R. Guskey (2007) who suggested that the teachers need to change their approach in three important ways: “1) use assessments as sources of information for both students and teachers, 2) follow assessments with high-quality corrective instruction, and 3) give students second chances to demonstrate success”.

Once the students have been assessed, the teacher must take action, identify which of the students needs help and a different approach, what have learned or not and take immediate corrective activities for those students. The teacher can adopt activities in two or three levels of learners, the information gathered must be followed-up, by designing a corrective instruction in the change of format, organization or method used, that helps the students to improve their comprehension.

The formative assessment uses five key learning strategies:

- Clarifying, sharing & understanding success criteria
- Effective classroom discussions & learning tasks
- Feedback that moves learning forward
- Self assessment
- Peer assessment

Formative assessment uses techniques that quickly assess students in how they understand the material and take actions to correct it. If the teacher deals with struggling learners, there are some tips to improve their knowledge:

- Reteach with a different method.
- Allow students to work with reading partner

- Allow students to use textbooks, notes, other classroom information to complete the task
- Provide a model or sample of the type of writing expected
- Color-code different elements, to highlight to focus attention on specific text.
- Provide out-of sequence steps for students to reorganize.
- Provide a cloze fill in the blanck excercises
- Provide guided questions.
- Supply a word bank and definitions
- Support with visuals, diagrams or pictures.
- Allow additional time

If the teacher deals with challenging advanced learners, this are some tips that could use in classroom:

- Design activities that are more complex, abstract, independen and or multistep.
- Pose a challenge question or task, that requires them to think beyond the concrete and obvious response.
- Require that metaphors and similes, idiomatic expressions, or specific literar elements be included in their writing.
- Ask students to make text-to-text and text-to-world connections.
- Require students to note relationship and point out to compare and contrst, cause and effect, problem and solution, sequence, steps, or change over time, etc.
- Ask students to tell the story from a different point of view.
- Ask students to place themselves into the story or time period and write from the first-person point of view.
- Include distracters
- Do not provide a visual prompt
- Have the students create their own pattern, graph, experiment, word problem, scenario, etc.
- Have students use the information in a completely new way.

Formative assessments are ongoing, frequent, normally brief, not too formal. They help the teacher to guide and improve instruction and learning, and they are not graded.

2.5.3 Summative Assessment

The summative assessment or assessment of learning, plays a critical role, according to Dr. Olenka Bilash (Bilash), there are various assessment about the summative it is a review of what the student has been learned at a certain point in time, such as at the end of a lesson unit, or course. The summative assessment is the process to gathering the learning experiences, the knowledge acquired and tests for achievement taken to the students. The results obtained evaluates the performance of the student. The teacher then focuses on this results which have to be precise and immediately will have a good grasp of where their students are in the learning process.

The summative assessment tells both the teacher and the student what are the areas that are learned, and which wil need more work input. This assessment of learning can take many forms:

- Performance task: The students have to complete a task, specific set of skills will be tested. Checklist or other form of scoring has to be used.
- Written product: Students are required to write essays, a previous activity, a learning experience, etc. Checklist or other form of scoring has to be used.
- Oral product: Students have to prepare an oral work. Checklist or other form of scoring has to be used.
- Test: A test will be taken to show what they know once the section, chapter, unit, theme has ended.
- Standardized test: Students must taken standardized type-tests.

2.6 Hypothesis System

2.6.1 Working Hypothesis

H1: There is a positive influence in the use of the Interactive White board (IWB) e-learning tool on the teaching and learning of English**.**

2.6.2 Null Hypothesis

H0: There is not any influence of the use of the Interactive White Board (IWB) e-learning tool on the teaching and learning of English.

PART THREE

THE METHODOLOGICAL FRAMEWORK

METHODOLOGICAL DESIGN

3.1 Research type and design

There are many studies and investigations about the importance to use an IWB in learning a foreing language or any other subject. This Thesis was based in the following Project: Pilot Project "Using the Interactive White Board in Teaching and Learning – An Evaluation of the Smart Classroom Pilot Project" or in a shorten version "Smart" by Edith Manny-Ikan form Henrietta Szold Institute, Israel; Osnat Dagan, from KadimaMada Educating for Life, Israel; Tal Berger Tikochinski and Rachel Zorman, from Henrietta Szold Institute, Israel. The address of this Pilot Project can be located at the following link:

http://www.ijello.org/Volume7/IJELLOv7p249-273Manny-Ikan763.pdf

This study was conducted in 2008, by an educational organization that works in 60 countries around the world. For the Pilot Project was equipped with "smart classrooms" in six middle and senior high schools in Israel, each school received 10 IWBs, 32 laptops, internet connection, software and teaching training. This Project accompanied a formative evaluation for two years in order to examine the effects and integrating technology into instruction on teachers, students and the school community, and the use of four types of questionnaires that were applied to the students in Israel.

The present thesis was based on this Pilot Project, trying to apply the most according to the reality and resources that count at Colegio Los Pinos located in Quito. This research is descriptive and of field*. The technique for collecting data is the survey and observation during class activity. The study is quantitative and transversal.* The questionnaires used in this survey, were the same questionnaires used in the Pilot Project described above.

Teacher questionnaires: The questionnaires were taken from the previous indicated Project, were three type of questionnaires given to the English teachers: First questionnaire: "Questionnaire of Teacher´s Attitudes toward Instruction Using the IWB", respondents were asked to describe and

characterize their instruction using the IWB; second questionnaire,: “Teacher Attitude towards Instruction Using the IWB”, respondents were evaluated their attitudes toward the training they received for instructing via the IWB, and the third questionnaire: “Questionnaire of Teacher Attitudes toward Training in Instruction Using the IWB”, were evaluated the teacher´s expectations regarding the place and task of the teacher and the students in a lesson that uses the IWB, the impact of the project on the school, advantages and major difficulties.

Student Questionnaire: This questionnaire was taken from the previous Project, “Questionnarie of Student´s Attitudes toward learning via the IWB”, It was evaluated the attitudes of the student towards the use of the IWB. The students were asked about their prior computer skills, their attitudes towards the use of the IWB know their desire to learn, motivation, learning skills, importance of the content, participation in class discussions, work in groups evaluation of achievements.

All this four questionnaires were administered during the 2012 – 2013 school year period.

The results obtained throughout this questionnaires were very impressive, the findings, conclusions and recommendations obtained in the “Pilot Project” in 2008, were similar to those obtained on the present survey.

3.2 POPULATION SIZE AND SAMPLE

The research will be applied to the group of students at Colegio Los Pinos, I tried to replicate the most of it to our reality by conducting a survey to the 7th grade “A” with 27 students, “B” with 21 students and “C” with 26 students, totaling a population of 74 students and conducted another survey of three types of questionnaires to 3 teachers at Colegio Los Pinos, were they have IWB in use for class since two years ago, and I was told that the school authorities are going to equip with a IWB to every classroom of the School.

3.3 FIELDING

The field work of this research will take place at the Colegio Los Pinos located in Quito. It offers services of basic and foreign education in the morning and in the afternoon.

This research was directed to students who were attending the 7th year of basic education, scholar period 2012-2013 and three English teachers that uses de IWB in their clases.

3.4 INSTRUMENTS FOR DATA COLLECTIONS

The instrument for gathering data was the observation of the students in class performance and a questionnaires (See Appendix 1) to the students of the 7th grade A, B and C parallels, about the Student's attitudes toward learning via the IWB; and three questionnaires for the teachers (see Appendix 2, 3, and 4), about Teacher's attitudes toward instruction using the IWB.

3.5 DATA PROCESSING AND ANALYSIS

A number of analysis was conducted on the various data gathered from the survey measures: The quantitative data that was gathered form the attitude questionnaires for students and teachers. The correlational data was gathered from the descriptive statistics and Chi-square which is a statistical test commonly used to compare observed data with data we would expect to obtain according to specific hypothesis. The transversal information was obtained during the periods of time 2012 - 2013, that were conducted the surveys to the teachers and students of Colegio Los Pinos.

3.5.1 Attitudes toward the number of IWBs and their placement in the school

At Colegio Los Pinos, all the laboratories work with an IWB, and some classes are equipped with an IWB. The teachers think that this is an excellent e-learning tool but the lack of utilization of the classrooms during a week schedule and the exposure to this technology is not enough. They feel that they should use more the IWB in class, but unfortunately the subjects

that uses more the IWB are English, Science, Math, the rest of subjects are delivered in the traditional way.

The teachers think that before doing any investment in acquiring more IWB for the School, they should first change their traditional ways of teaching and moving-on to the use of different methodolies and teaching styles integrating the IWB use.

3.5.2 Student Perspective: Will there be a change in the level of student engagement in learning? What kind of change?

The student's attitudes toward learning via the IWB based on student responses in the survey. Each of the three 7th grades A, B and C, gave different levels of the questions asked within the questionnaire. For this survey, all the students of the seventh grades were asked to fill out a questionnaire (see appendix 1). The following attitudes, among others, were also expressed by the students and were similar to the Pilot Project (Manny-Ikan, 2008) that this thesis was based on:

- Interest and Enjoyment: Students feel the class is more interesting, because they use pictures, articles that enriches the lesson received.
- Comprehension: All the subject material that they receive through the IWB is more comprehensible, it is totally visual is more pedagogical and they are able to review the saved lesson at home or any place.
- Efficiency: Students attitude is more positive toward learning with the IWB, is faster, runs smoothly, easy to work and lesson is presented in a more organized way.
- It is important to notice that, the student attitude is more positive toward learning with the IWB, when the students have greater exposure to the IWB.

PART FOUR

THE HYPOTHETIC TESTING

TESTING THE HYPOTHESIS

4.1 DATA MATRIX

Data of the students of 7 A

	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	NO ANSWER	7mo A
Enjoy learning					26	1	27
Studies are interesting			2	4	21		27
Can understand the learning material	1		1	8	17		27
I want to participate in the lesson		1	1	1	24		27
Studies are easier	1		1	11	14		27
Students are more focused	4	2	2	2	17		27
The teacher involves students in class discussions	1		3	2	21		27
I like to come to school	3	3	8	4	9		27
Students work in groups	2	2	1	12	10		27
The topics we learn are connected to my life and are relevant to me	1	4	8	3	11		27
The IWB help me with the lessons	1		1	4	20	1	27

Table 2: Data of the Students of 7 "A"

Data of the students of 7 B

	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	NO ANSWER	7mo B
Enjoy learning	1	2	2	6	8	2	21
Studies are interesting	4	1	5	7	3	1	21
Can understand the learning material	1	1	5	6	7	1	21
I want to participate in the lesson	3	4	4	2	7	1	21
Studies are easier	1	2	4	6	7	1	21
Students are more focused	2	3	6	5	5		21
The teacher involves students in class discussions	5	1	4	2	9		21
I like to come to school	6	3		5	6	1	21
Students work in groups	1	5	2	1	10	2	21
The topics we learn are connected to my life and are relevant to me		4	6	3	7	1	21
The IWB help me with the lessons	2		1	4	13	1	21

Table 3: Data of the Students of 7 “B”

Data of the students of the 7 C

	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	NO ANSWER	7mo C
Enjoy learning	1	3	3	11	8	0	26
Studies are interesting		2	9	12	3	0	26
Can understand the learning material	3	3	5	6	9	0	26
I want to participate in the lesson	1	2	1	5	17	0	26
Studies are easier	1	3	7	10	5	0	26
Students are more focused	2	6	5	9	4	0	26
The teacher involves students in class discussions	2	3	3	6	12	0	26
I like to come to school	10	2	4	8	2	0	26
Students work in groups	9	5	8	3	1	0	26
The topics we learn are connected to my life and are relevant to me	13	6	6	1		0	26
The IWB help me with the lessons	10	2	7	5	2	0	26

Table 4: Data of the Students of 7 “C”

Teachers First Questionnaire:

STATEMENT	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	
Enjoy teaching					3	3
I need to invest a lot of more work		1	2			3
I can more appropriately match the learning materials to the needs of different students				1	2	3
I have better access to learning materials and resources at different levels			1		2	3
I can teach topics in greater depth				1	2	3
I feel that my instruction is more professional			1		2	3
I am open to more up-to-date materials			1		2	3
I am strengthening my knowledge in the subject areas I teach				1	2	3
I can more easily fulfill the learning goals			1	1	1	3
I raise my expectations from student´s work				1	2	3
I feel that the students appreciate me more			1		2	3
There are fewer disciplines disturbances in the class		1			2	3
I am more dominant and meaningful in the school			1		2	3

Table 5: Teacher´s First Questionnaire

Teachers Second Questionnaire:

STATEMENT	LESS THAN A TRADITIONAL LESSON	NO DIFFERENCE FROM A TRADITIONAL LESSON	MORE THAN A TRADITIONAL LESSON	
Student interest level in the lesson			3	3
I provide tools for the students that help them learn			3	3
Student´s level of participation in the lesson		1	2	3
During the lesson students present presentations that the have prepared		2	1	3
Level of student´s concentration		1	2	3
I can guide the student´s to reach answers to questions a assignments on their own		1	2	3
The students like the subjet being learned			3	3
I use examples that the students bring during the lesson			3	3
I conduct discussions with the students			3	3
How much effort the students invest in learning in the class		1	2	3
The investment students make in doing their homework		2	1	3
The students work in groups		2	1	3
The students are bored during the lesson	3			3

Table 6: Teachers Second Questionnaire

Teachers Third Questionnaire:

STATEMENT	NOT AT ALL	A LITTLE	SOMEWHAT	MOSTLY	FULLY	
I feel able to teach without training for the next school year	1	1			1	3
Following training, I know how to integrate between the IWB and lerning materials in my content area				2	1	3
The training contributed to my technological knwledge of operating the IWB				2	1	3
The training contributed to my technological knowledge of my familiarity with the computer				1	2	3
Following the training, I can independently develop learning materials for the IWB (digital learning units)				1	2	3
The training contributed to my pedagogical knowledge in the content area that I teach					3	3

Table 7: Teacher´s Third Questionnaire

4.2 Graphical Exposition of results

STUDENTS - SCHOOL GIRLS

Students' Attitudes toward Learning via the IWB

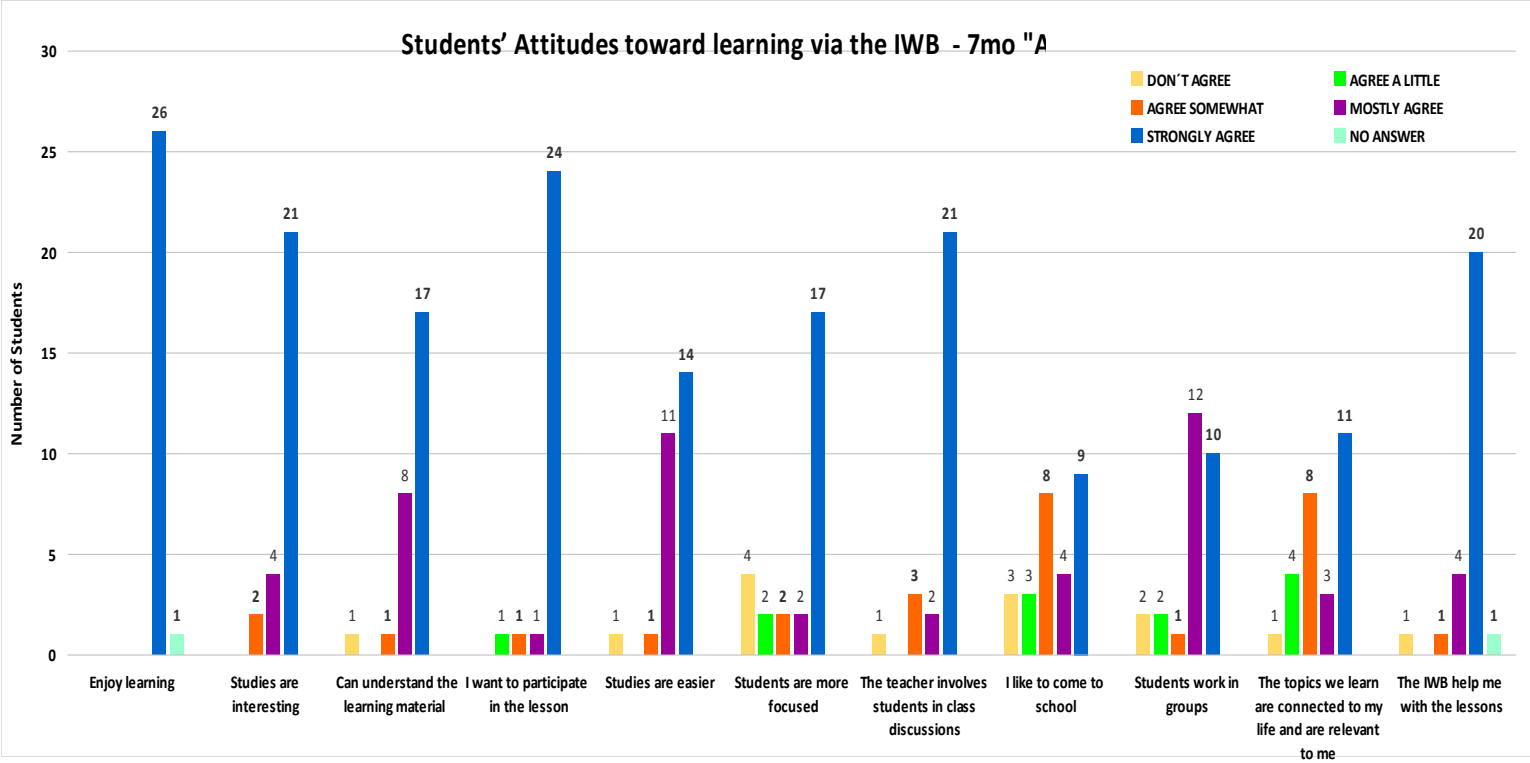
	N	Mean	Std. Deviation
Enjoy learning	71	**4,30**	1,06
Studies are interesting	73	**3,90**	1,12
Can understand the learning material	73	**3,99**	1,21
I want to participate in the lesson	73	**4,22**	1,26
Studies are easier	73	**3,93**	1,08
Students are more focused	74	**3,55**	1,39
The teacher involves students in class discussions	74	**4,00**	1,38
I like to come to school	73	**3,07**	1,53
Students work in groups	72	**3,31**	1,47
The topics we learn are connected to my life and are relevant to me	73	**3,01**	1,44
The IWB help me with the lessons	72	**3,76**	1,52

Scale: 1- don't agree, 2-agree a little, 3-agree somewhat, 4-mostly agree, 5-strongly agree

***Note**: Calculated real weighted average (not incl 0 answers, it means only includes total answered questions school girls - 7mo A, B & C)*

Table 8: Statistics Student´s Attitudes toward Learning via IWB

Based on student responses in this survey, it seems that learning via the IWB is pleasurable, interesting, efficient, and comprehensible to the students.



Graphic 1: Results Students 7 "A"

In this graphic we can see the whole perspective of the answers received by the students of the Seventh grade "A", it was measured the grade of agreement toward the attitudes of learning via the IWB, obtaining a higher percentage in almost all the answers, which means that this group really enjoys and likes to use this e-learning tool in their different activities.

It is important to analyze each of the questions and the answers received by the students of the seven grade “A”:

Statement:	**Enjoy learning**	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE		0,0%
STRONGLY AGREE	26	96,3%
NO ANSWER	1	3,7%
total	27	

Table 9: Enjoy Learning 7 ”A”

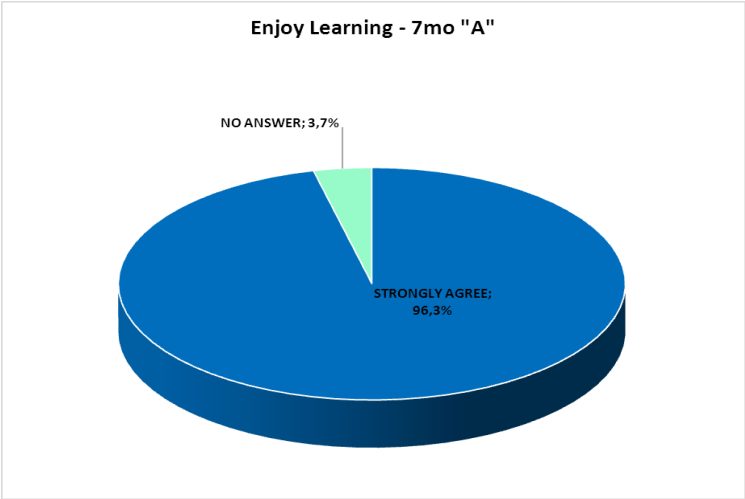


Figure 1: Enjoy Learning 7 ”A”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Enjoy learning” the girls strongly agree in a 96.3% and no answer a 3,7%, which means that they enjoy learning via the IWB.

Statement:	Studies are interesting	
INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE		0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	2	7,4%
MOSTLY AGREE	4	0,0%
STRONGLY AGREE	21	77,8%
NO ANSWER		0,0%
total	27	

Table 10: Studies are interesting 7 “A”

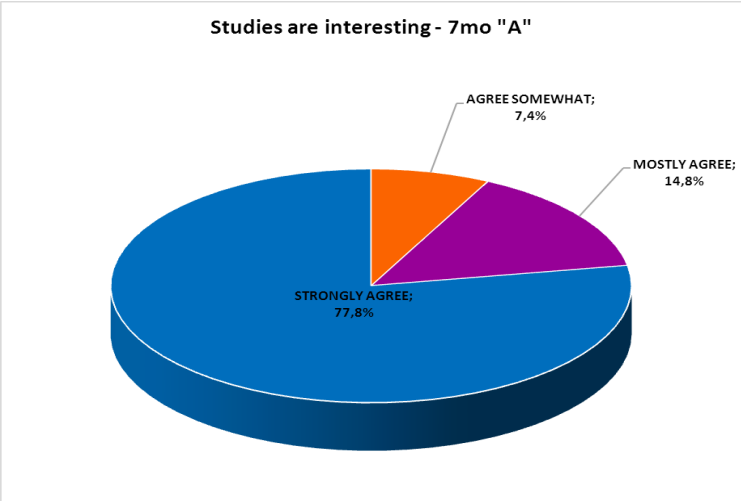


Figure 2: Studies are interesting 7 “A”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Studies are interesting” the 77,8 % strongly agree, the 14,8% mostly agree and only the 7,4% agree somewhat, which means that the students feels that studies are interesting with the use of the IWB.

Statement:	Can understand the learning material	
INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	3,7%
MOSTLY AGREE	8	0,0%
STRONGLY AGREE	17	63,0%
NO ANSWER		0,0%
total	27	

Table 11: Can understand the learning material 7 "A"

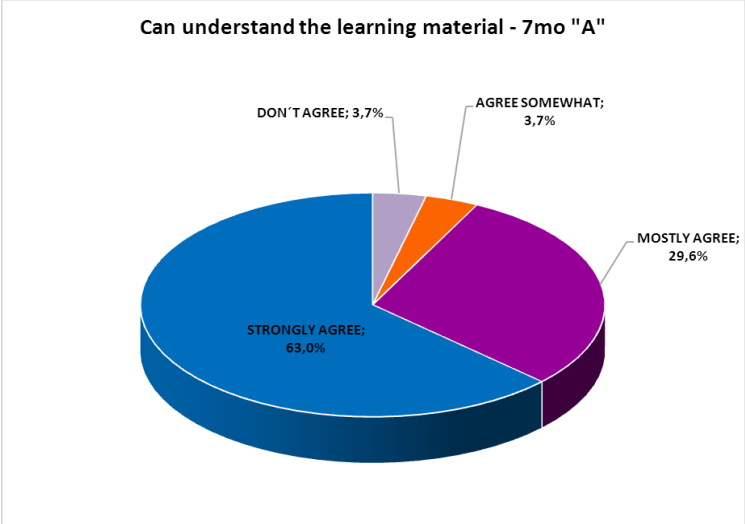


Figure 3: Can understand the learning material 7 "A"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Can understand the learning material" the 63,0 % strongly agree, the 29,6% mostly agree, the 3,7% agree somewhat and again a 3,7% do notagree; which means that this group of students can understand the learning material used for the IWB.

Statement: **I want to participate in the lesson**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE		0%
AGREE A LITTLE	1	3,7%
AGREE SOMEWHAT	1	3,7%
MOSTLY AGREE	1	0,0%
STRONGLY AGREE	24	88,9%
NO ANSWER		0,0%
total	27	

Table 12: I want to participate in the lesson 7 "A"

Figure: I want to participate in the lesson 7 "A"

SOURCE: Questionnaire

ANALYSIS

To the Statement "I want to participate in the lesson" the students anwers a 88,9% strongly agree, 3,7% mostly agree, 3,7% agree somewhat and 3,7% agree a little; which means that they want to participate actively in the lesson using the IWB.

Statement: **Studies are easier**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	3,7%
MOSTLY AGREE	11	0,0%
STRONGLY AGREE	14	51,9%
NO ANSWER		0,0%
total	27	

Table 13: Studies are easier 7 "A"

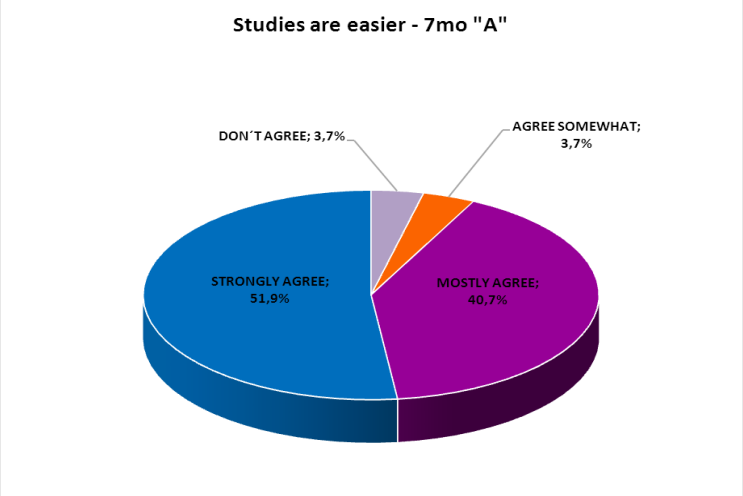


Figure 4: Studies are easier 7 "A"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Studies are easier" the 51,9% strongly agree, the 40,7% mostly agree, the 3,7% agree somewhat and doesn´t agree the 3.7%; which means that students feel that studies are easier using the IWB.

Statement: **Students are more focused**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	4	15%
AGREE A LITTLE	2	7,4%
AGREE SOMEWHAT	2	7,4%
MOSTLY AGREE	2	0,0%
STRONGLY AGREE	17	63,0%
NO ANSWER		0,0%
total	27	

Table 14: Students are more focused 7 "A"

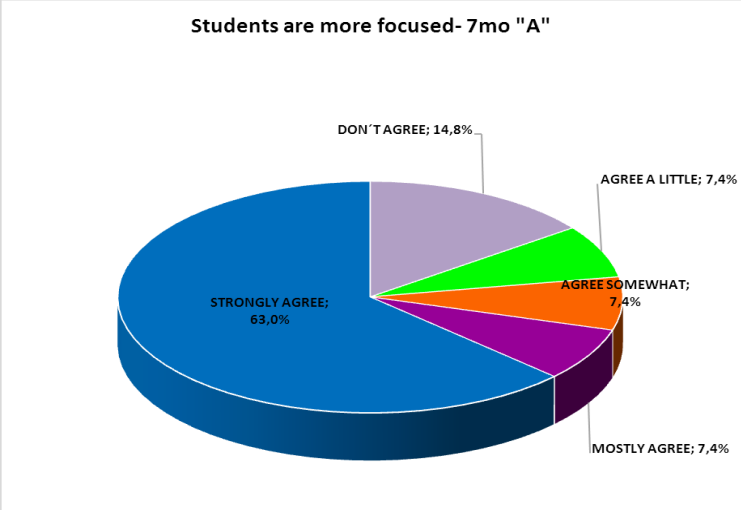


Figure 5: Students are more focused 7 "A"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Students are more focused" the 63,0% strongly agree, the 7,4% mostly agree, the 7,45 agree somewhat, the 7,4% agree a little and the 14,8% do notagree; which means that the students feel that are more focused with the use of the IWB.

Statement:	The teacher involves students in class discussions

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	3	11,1%
MOSTLY AGREE	2	0,0%
STRONGLY AGREE	21	77,8%
NO ANSWER		0,0%
total	27	

Table 15: Teacher involves students in class discussions 7 “A”

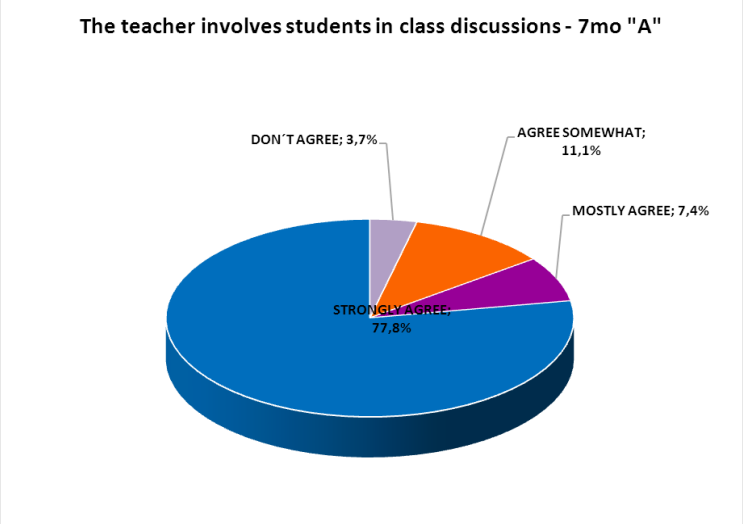


Figure 6: Teacher involves students in class discussions 7 “A”

SOURCE: Questionnaire

ANALYSIS

To the statement ”The teacher involves students in class discussion” the 77,8% strongly agree, the 7,4% mostly agree, the 11,1% agree somewhat and the 3,7% do notagree; which means that the students feel that the teacher involves them in class discussion when using the IWB.

Question: **Students work in groups**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	2	7%
AGREE A LITTLE	2	7,4%
AGREE SOMEWHAT	1	3,7%
MOSTLY AGREE	12	0,0%
STRONGLY AGREE	10	37,0%
NO ANSWER		0,0%
total	27	

Table 16: Students work in groups 7 “A”

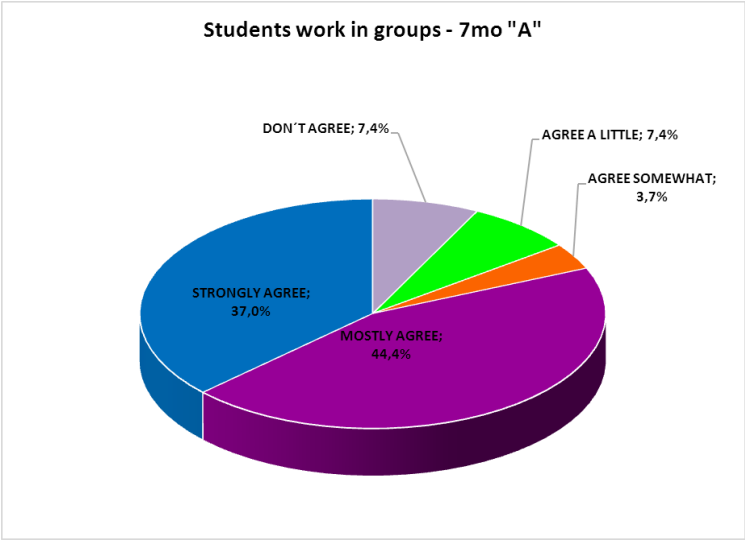


Figure 7: Students work in groups 7 “A”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Students work in groups” the 44,4 mostly agree, the 37,0% strongly agree, the 3,7% agree somewhat, the 7,4% agree a little and the 7,4% do notagree; which means that students mostly agree and that they need to work more in groups using the IWB

Statement:	The topics we learn are connected to my life and are relevant to me	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE	1	4%
AGREE A LITTLE	4	14,8%
AGREE SOMEWHAT	8	29,6%
MOSTLY AGREE	3	0,0%
STRONGLY AGREE	11	40,7%
NO ANSWER		0,0%
total	27	

Table 17: The topics we learn are connected to my life & are relevant to me

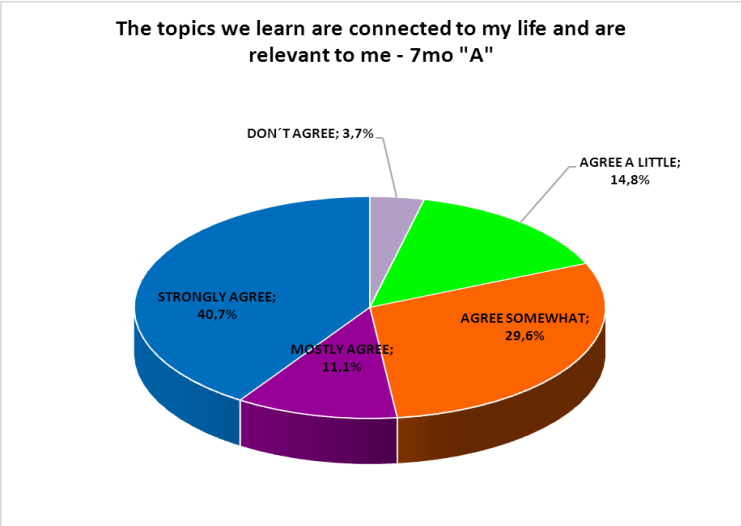


Figure 8: The topics we learn are connected to my life & are relevant to me

SOURCE: Questionnaire

ANALYSIS

To the Statement “The topics we learn are connected to my life and are relevant to me”, the 40,7% strongly agree, the 11,1% mostly agree, the 29,6% agree somewhat, the 14,8% agree a little and the 3,7% do notagree; which means that the students think that the topics learned are relevant for them using the IWB.

Statement:	The IWB help me with the lessons	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE	1	4%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	3,7%
MOSTLY AGREE	4	0,0%
STRONGLY AGREE	20	74,1%
NO ANSWER	1	3,7%
total	27	

Table 18: The IWB help me with the lessons 7 "A"

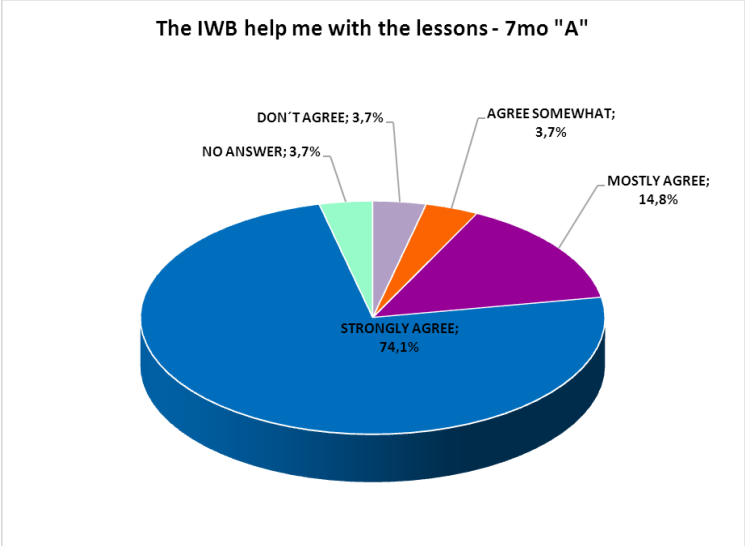


Figure 9: The IWB help me with the lessons 7 "A"

SOURCE: Questionnaire

ANALYSIS

To the Statement "The IWB help me with the lessons" the 74,1% strongly agree, the 14,8% mostly agree, the 3.7% agree somewhat, the 3,7% do notagree and 3,7% did not answer to the Statement; which means that the students think that the IWB help them with the lessons.

Statement: **I like to come to school**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	3	11%
AGREE A LITTLE	3	11,1%
AGREE SOMEWHAT	8	29,6%
MOSTLY AGREE	4	0,0%
STRONGLY AGREE	9	33,3%
NO ANSWER		0,0%
total	27	

Table 19: I like to come to school 7 "A"

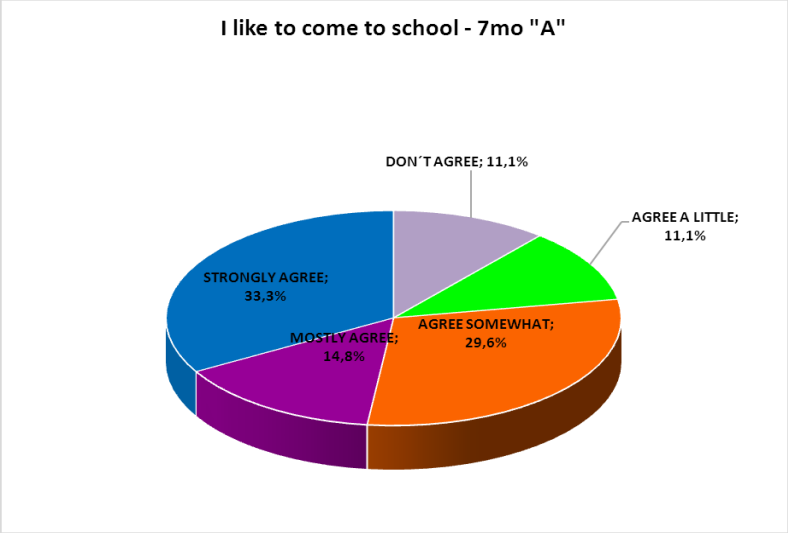
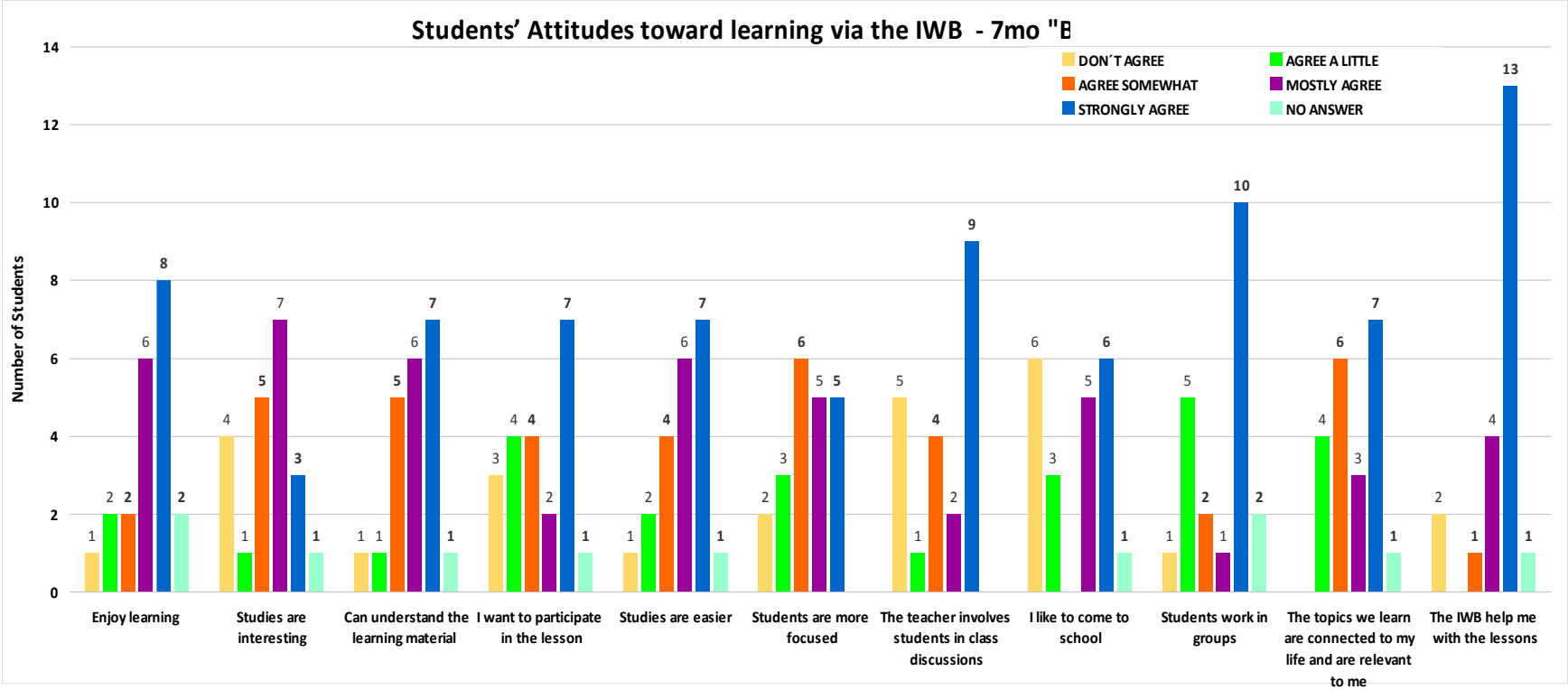


Figure 10: I like to come to school 7 "A"

SOURCE: Questionnaire

ANALYSIS

To the Statement "I like to come to school" the 33,3% strongly agree, the 34,8% mostly agree, the 29,6% agree somewhat, the 11,1% agree a little and the 11,1% do not agree; which means that the students in their majority likes to come to school.



Graphic 2: Student´s attitudes toward learning via the IWB 7 "B"

In this graphic we can see the whole perspective of the answers received by the students of the Seventh grade "B", it was measured the grade of agreement toward the attitudes of learning via the IWB, obtaining a lower percentage in almost all the answers, which means that this group enjoys and likes to use this e-learning tool in their different activities but in lesser grade than the students of grade "A".

It is important to analyze each of the statement and the answers received by the students of the seven grade “B”:

Statement: Enjoy learning

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4,8%
AGREE A LITTLE	2	9,5%
AGREE SOMEWHAT	2	9,5%
MOSTLY AGREE	6	28,6%
STRONGLY AGREE	8	38,1%
NO ANSWER	2	9,5%
Total	21	

Table 20: Enjoy learning 7 “B”

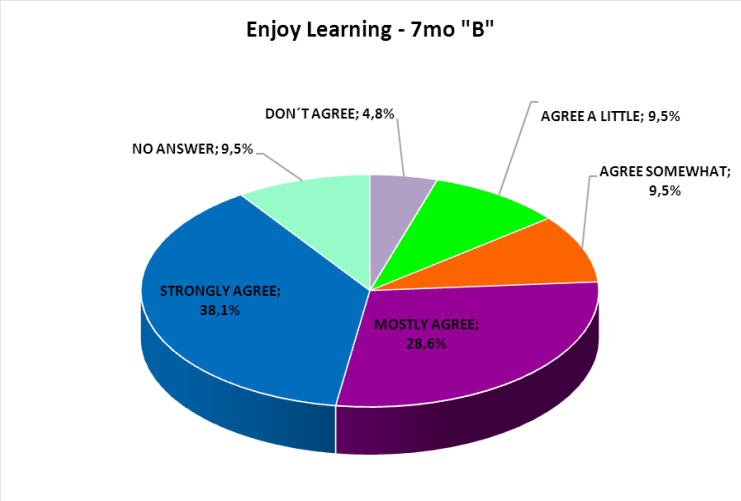


Figure 11: Enjoy learning 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Enjoy learning” the 38,1% strongly agree, the 28,6% mostly agree, the 9,5% agree somewhat, the 9,5% agree a little, the 4,8% do notagree and the 9,5% did notanswer the Statement; which means that in a less percentage, the students enjoy learning using the IWB.

Statement: **Studies are interesting**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	4	19,0%
AGREE A LITTLE	1	4,8%
AGREE SOMEWHAT	5	23,8%
MOSTLY AGREE	7	33,3%
STRONGLY AGREE	3	14,3%
NO ANSWER	1	4,8%
Total	21	

Table 21: Studies are interesting 7 "B"

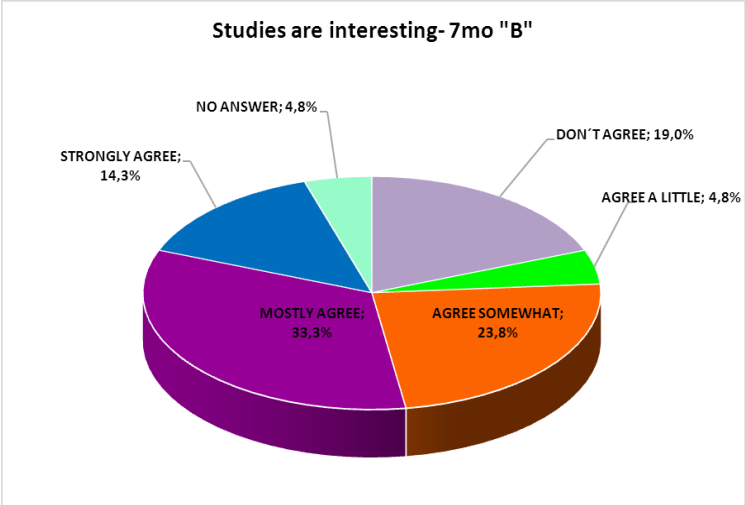


Figure 12: Studies are interesting 7 "B"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Studies are interesting" the 14,3% strongly agree, 33,3% mostly agree, the 23,8% agree somewhat, the 4,8% agree a little, the 19,0% do notagree, and was a 4,8% with no answer; which means that students feel the studies are mostly interesting with the use of the IWB.

Statement:	Can understand the learning material

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4,8%
AGREE A LITTLE	1	4,8%
AGREE SOMEWHAT	5	23,8%
MOSTLY AGREE	6	28,6%
STRONGLY AGREE	7	33,3%
NO ANSWER	1	4,8%
Total	21	

Table 22: Can understand the learning material 7 "B"

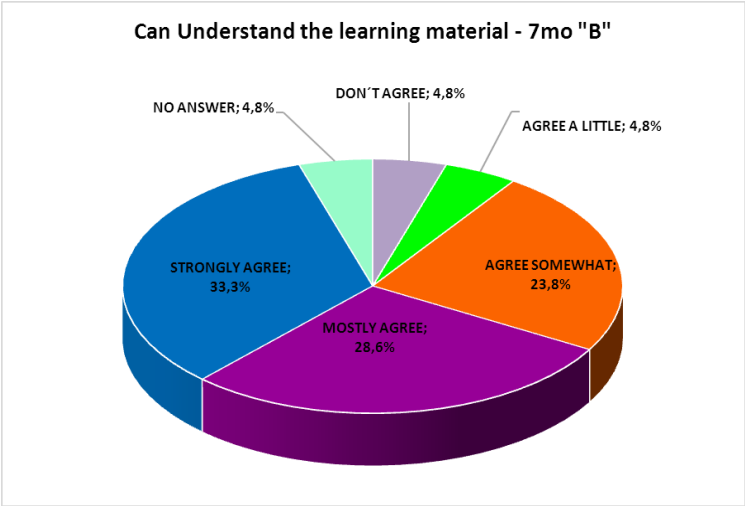


Figure 13: Can understand the learning material 7 "B"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Can understand the learning material" the 33,3% strongly agree, the 28,6% mostly agree, the 23,8% agree somewhat, the 4,8% agree a little, the 4,8% do notagree and 4,8% did notanswer; which means that the students can understan the learning material with the use of the IWB.

Statement: **I want to participate in the lesson**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	3	14,3%
AGREE A LITTLE	4	19,0%
AGREE SOMEWHAT	4	19,0%
MOSTLY AGREE	2	9,5%
STRONGLY AGREE	7	33,3%
NO ANSWER	1	4,8%
Total	21	

Table 23: I want to participate in the lesson 7 “B”

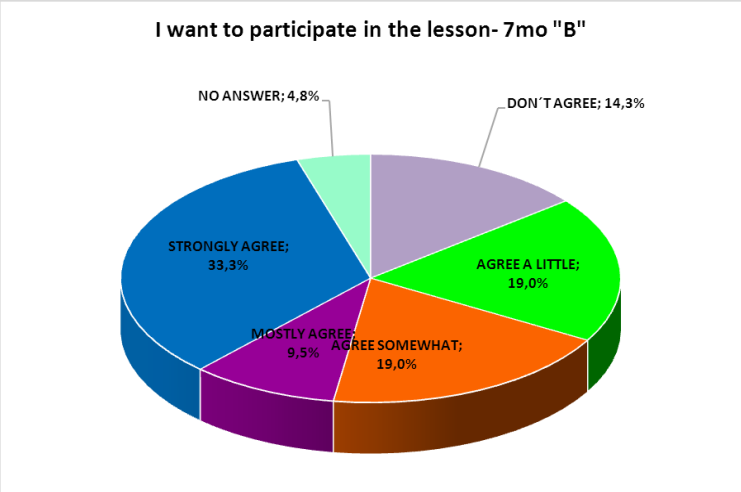


Figure 14: I want to participate in the lesson 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “I want to participate in the lesson” the 33,3% strongly agree, the 9,5% mostly agree, the 19,0% agree somewhat, the 19,0 agree a little, the 14,3% do notagree, and the 4,8% did notanswer the Statement; which means that the students want to participate in the lesson using the IWB.

Statement: **Studies are easier**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4,8%
AGREE A LITTLE	2	9,5%
AGREE SOMEWHAT	4	19,0%
MOSTLY AGREE	6	28,6%
STRONGLY AGREE	7	33,3%
NO ANSWER	1	4,8%
Total	21	

Table 24: Studies are easier 7 "B"

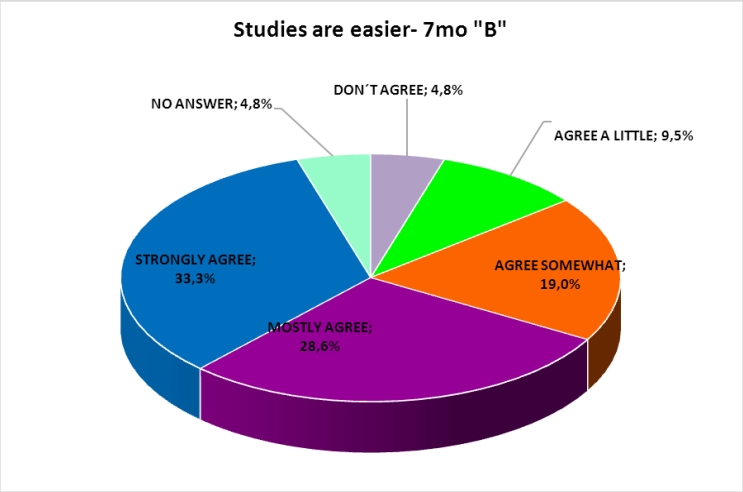


Figure 15: Studies are easier 7 "B"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Studies are easier" the 33,3% strongly agree, the 28,6% mostly agree, the 19,0% agree somewhat, the 9,5% agree a little, the 4,8% do notagree and 4,8 did notanswer the Statement; which means that the student´s studies are easier with the use of the IWB.

Statement: **Students are more focused**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	2	9,5%
AGREE A LITTLE	3	14,3%
AGREE SOMEWHAT	6	28,6%
MOSTLY AGREE	5	23,8%
STRONGLY AGREE	5	23,8%
NO ANSWER		0,0%
Total	21	

Table 25: Students are more focused 7 “B”

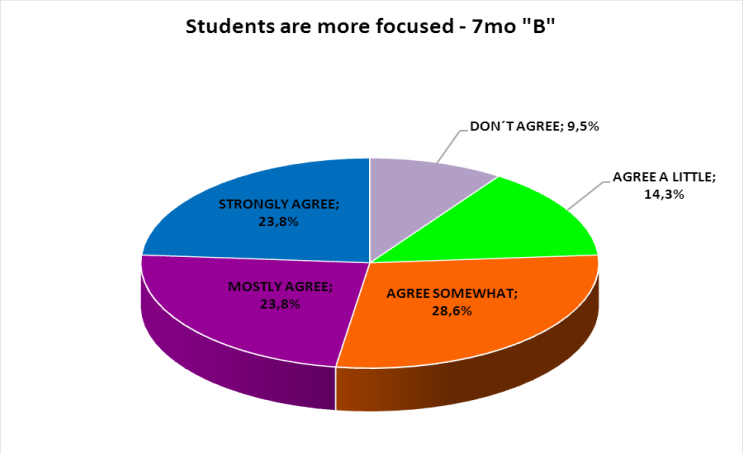


Figure 16: Students are more focused 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Students are more focused” the 23,8 mostly agree, the 28,6% agree somewhat, the 14,3% agree a little, the 9,5% do notagree; which means that students are more focused with the use of the IWB.

Statement:	The teacher involves students in class discussions

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	5	23,8%
AGREE A LITTLE	1	4,8%
AGREE SOMEWHAT	4	19,0%
MOSTLY AGREE	2	9,5%
STRONGLY AGREE	9	42,9%
NO ANSWER		0,0%
Total	21	

Table 26: The teacher involves students in class discussion 7 “B”

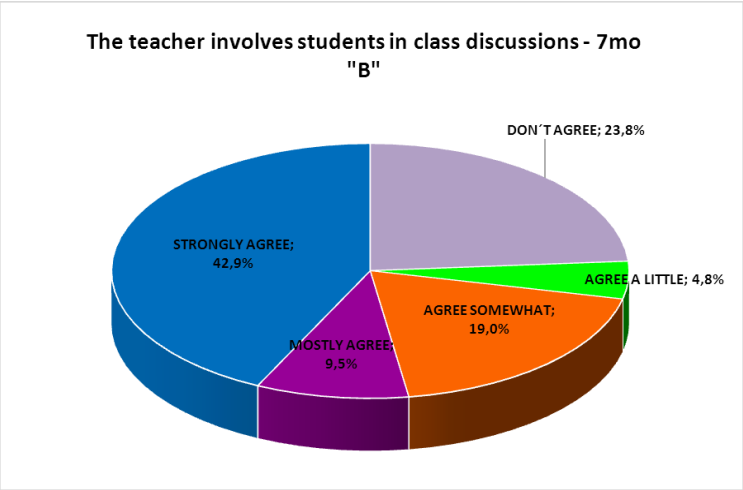


Figure 17: The teacher involves students in class discussion 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “The teacher involves students in class discussion” the 42,9% strongly agree, the 9,5 mostly agree, the 19,0% agree somewhat, the 4,8% agree a little and the 23,8 do notagree; which means that the students feel that their teacher involves them in the class discussions using the IWB.

Statement: **I like to come to school**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	6	28,6%
AGREE A LITTLE	3	14,3%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE	5	23,8%
STRONGLY AGREE	6	28,6%
NO ANSWER	1	4,8%
Total	21	

Table 27: I like to come to school 7 "B"

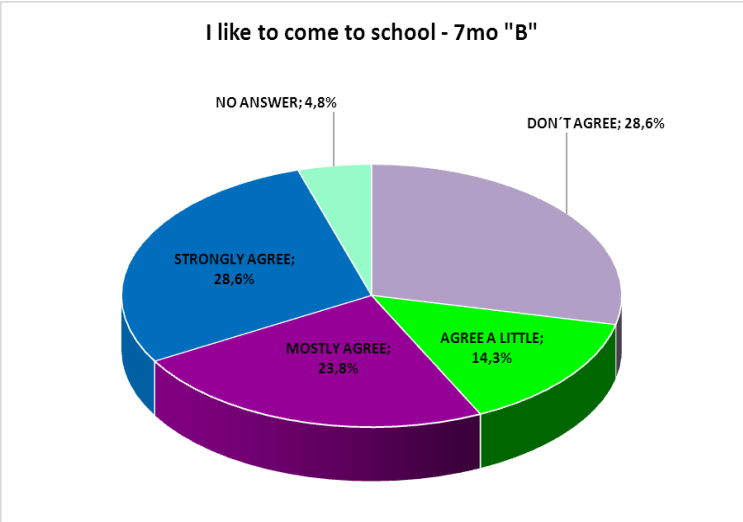


Figure 18: I like to come to school 7 "B"

SOURCE: Questionnaire

ANALYSIS

To the Statement "I like to come to school" the 28,6% strongly agree, the 23,8% mostly agree, the 14,3% agree a little, the 28,6% do notagree and 4,8% did notanswer the Statement; which means that the students obtaind the same average of strongly agree and do notagree coming to school.

Statement:	Students work in groups	
INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	4,8%
AGREE A LITTLE	5	23,8%
AGREE SOMEWHAT	2	9,5%
MOSTLY AGREE	1	4,8%
STRONGLY AGREE	10	47,6%
NO ANSWER	2	9,5%
Total	21	

Table 28: Students work in groups 7 “B”

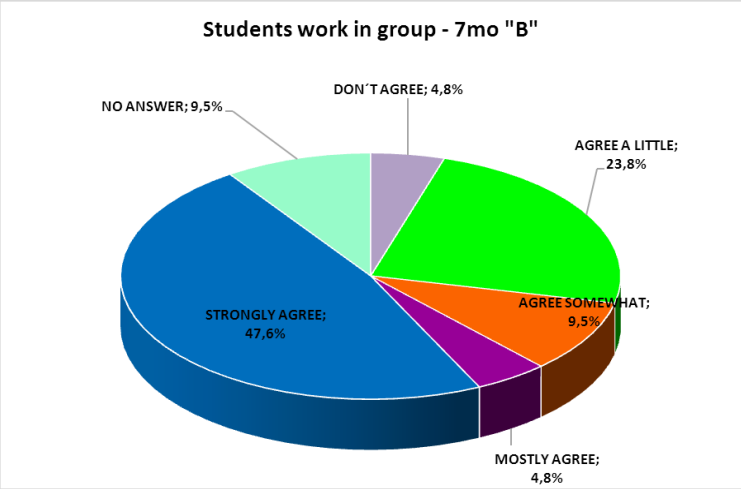


Figure 19: Students work in groups 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Students work in group” the 47,6% strongly agree, the 4,8% mostly agree, the 9,5% agree somewhat, the 23,8% agree a little, the 4,8% do not agree and the 9,5% did not answer to the Statement; which means that the students like to work in group when using the IWB.

Statement:	The topics we learn are connected to my life and are relevant to me	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE	4	19,0%
AGREE SOMEWHAT	6	28,6%
MOSTLY AGREE	3	14,3%
STRONGLY AGREE	7	33,3%
NO ANSWER	1	4,8%
Total	21	

Table 29: The topics we learn are connected to my life & are relevant to me 7 “B”

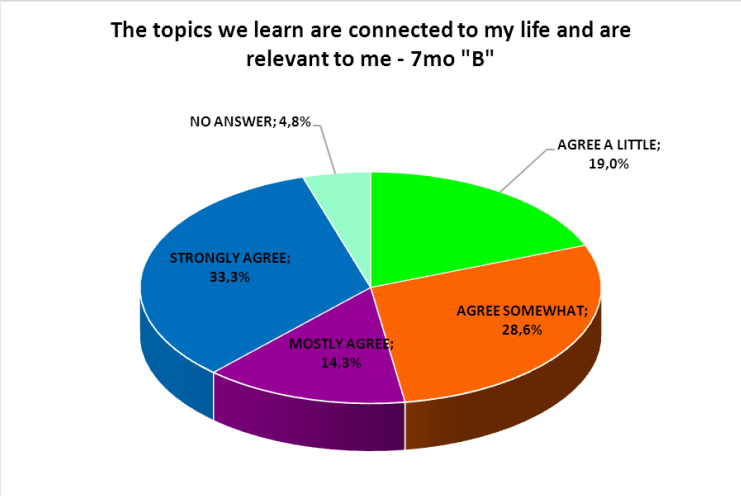


Figure 20: The topics we learn are connected to my life & are relevant to me 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “The topics we learn are connected to my life and are relevant to me” the 33,3% strongly agree, the 14,3% mostly agree, the 28,6% agree somewhat, the 19,0% agree a little, and the 4,8% did notanswer the Statement; which means that the students feel that what they learn is relevant and connected to their lifes.

Statement:	The IWB help me with the lessons	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE	2	9,5%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	4,8%
MOSTLY AGREE	4	19,0%
STRONGLY AGREE	13	61,9%
NO ANSWER	1	4,8%
Total	21	

Table 30: The IWB help me with the lessons 7 “B”

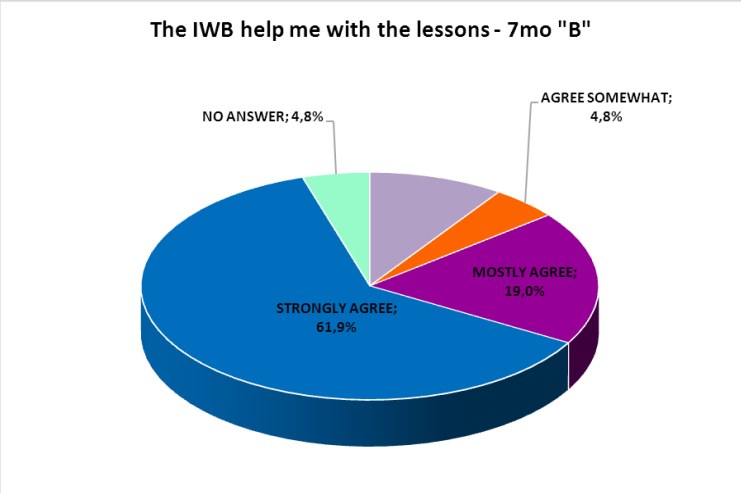
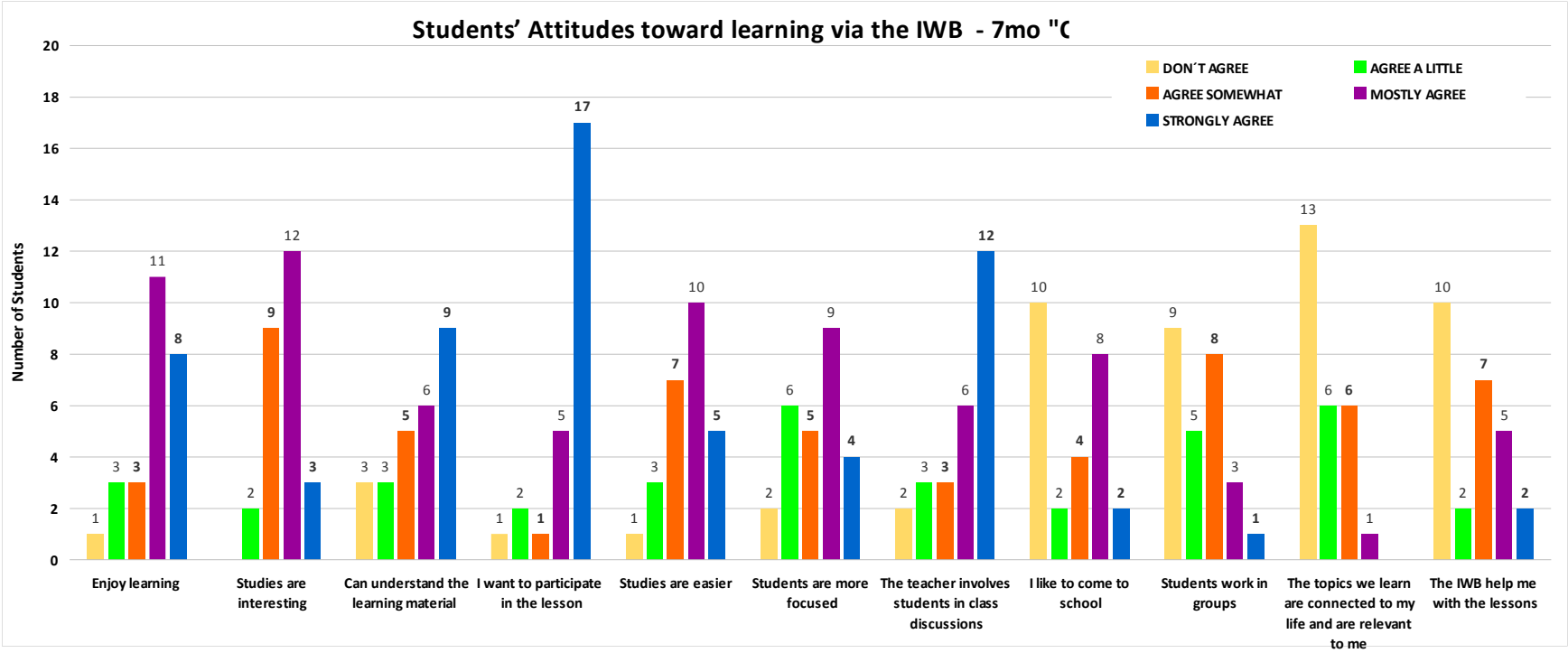


Figure 21: The IWB help me with the lessons 7 “B”

SOURCE: Questionnaire

ANALYSIS

To the Statement “The IWB help me with the lessons” the 61,9% strongly agree, the 19,0% mostly agree, the 4,8% agree somewhat, the 9,5% agree a little and 4,8% did not answer the Statement; which means that the students feels that the IWB help them with the lessons.



Graphic 3: Student´s Attitudes towar learning via the IWB 7 "C"

In this graphic we can see the whole perspective of the answers received by the students of the Seventh grade "C", it was measured the grade of agreement toward the attitudes of learning via the IWB, obtaining the lowest percentage in almost all the answers, which means that this group mostly agrees and likes to use this e-learning tool in their different activities but in lesser grade than the students of grades "A" and "B".

Statement: **Enjoy learning**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	3,8%
AGREE A LITTLE	3	11,5%
AGREE SOMEWHAT	3	11,5%
MOSTLY AGREE	11	42,3%
STRONGLY AGREE	8	30,8%
NO ANSWER	0	0,0%
Total students	26	

Table 31: Enjoy learning 7 "C"

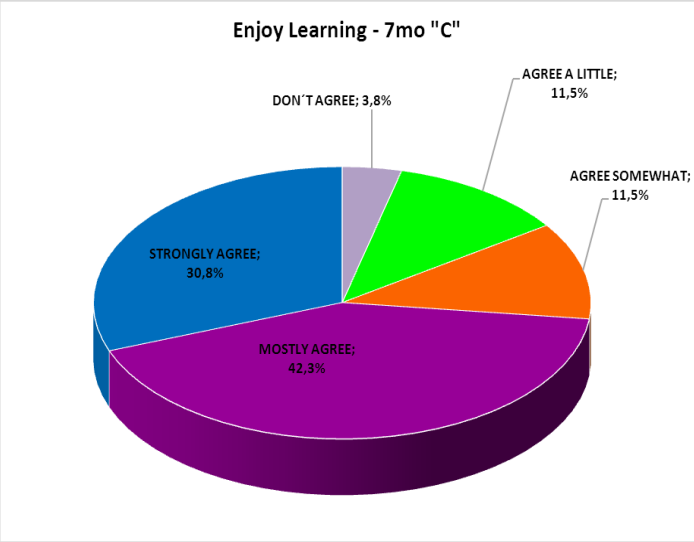


Figure 22: Enjoy learning 7 "C"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Enjoy learning" the 30,8% strongly agree, the 42,3% mostly agree, the 11,5% agree somewhat, the 11,5% agree a little, the 3,8% do notagree; which means that the students enjoy learning using the IWB.

Statement: **Studies are interesting**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE		0,0%
AGREE A LITTLE	2	7,7%
AGREE SOMEWHAT	9	34,6%
MOSTLY AGREE	12	46,2%
STRONGLY AGREE	3	11,5%
NO ANSWER	0	0,0%
Total students	26	

Table 32: Studies are interesting 7 “C”

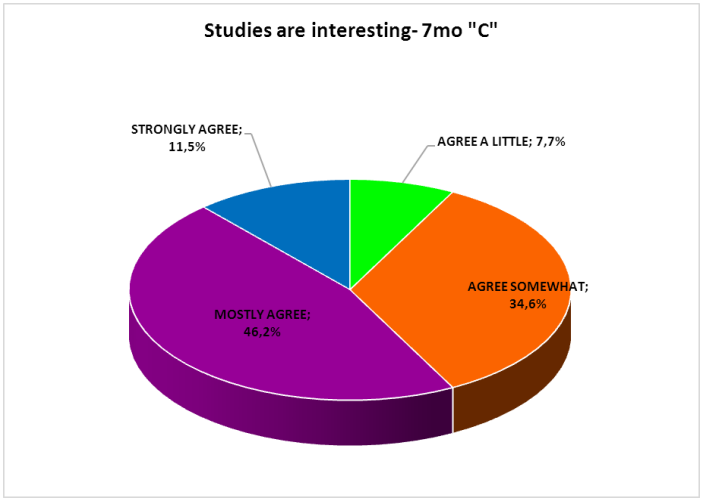


Figure 23: Studies are interesting 7 “C”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Studies are interesting” the 11,5% strongly agree; 46,2% mostly agree, the 34,6% agree somewhat, the 7,7% agree a little; do notagree and no answer was 0%; which means that students feel the studies are mostly interesting with the use of the IWB.

Statement:	Can understand the learning material	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE	3	11,5%
AGREE A LITTLE	3	11,5%
AGREE SOMEWHAT	5	19,2%
MOSTLY AGREE	6	23,1%
STRONGLY AGREE	9	34,6%
NO ANSWER	0	0,0%
Total students	26	

Table 33: Can understand the learning material 7 “C”

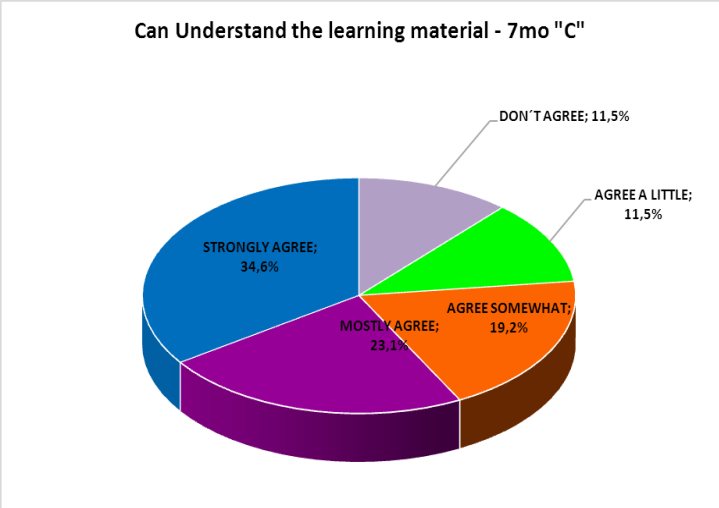


Figure 24: Can understand the learning material 7 “C”

SOURCE: Questionnaire

ANALYSIS

To the Statement “Can understand the learning material” The 34,6% strongly agree, the 23,1% mostly agree, the 19,2% agree somewhat, the 11,5% agree a little, the 11,5% do notagree; which means that the students can understand the learning material adequately with the use of the IWB.

Statement:	I want to participate in the lesson

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	3,8%
AGREE A LITTLE	2	7,7%
AGREE SOMEWHAT	1	3,8%
MOSTLY AGREE	5	19,2%
STRONGLY AGREE	17	65,4%
NO ANSWER	0	0,0%
Total students	26	

Table 34: I want to participate in the lesson 7 “C”

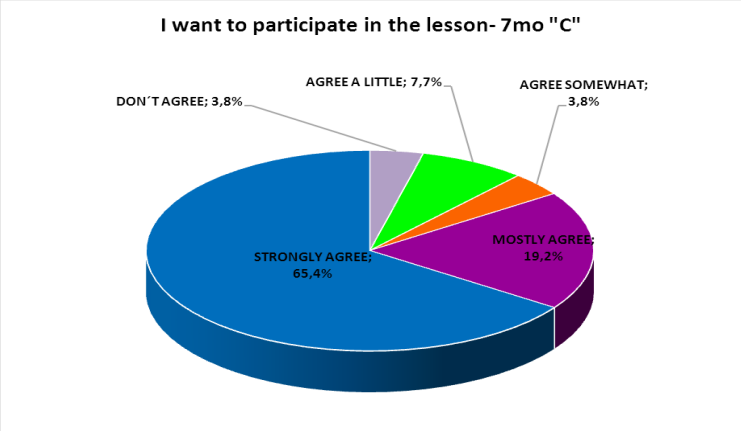


Figure 25: I want to participate in the lesson 7 “C”

SOURCE: Questionnaire

ANALYSIS

To the Statement “I want to participate in the lesson” the 65,4% strongly agree, the 19,2% mostly agree, the 3,8% agree somewhat, the 7.7% agree a little and the 3,8% dont´agree; which means that the students likes to participate in the lesson with the help of the IWB.

Statement: **Studies are easier**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	1	3,8%
AGREE A LITTLE	3	11,5%
AGREE SOMEWHAT	7	26,9%
MOSTLY AGREE	10	38,5%
STRONGLY AGREE	5	19,2%
NO ANSWER	0	0,0%
Total students	26	

Table 35: Studies are easier 7 "C"

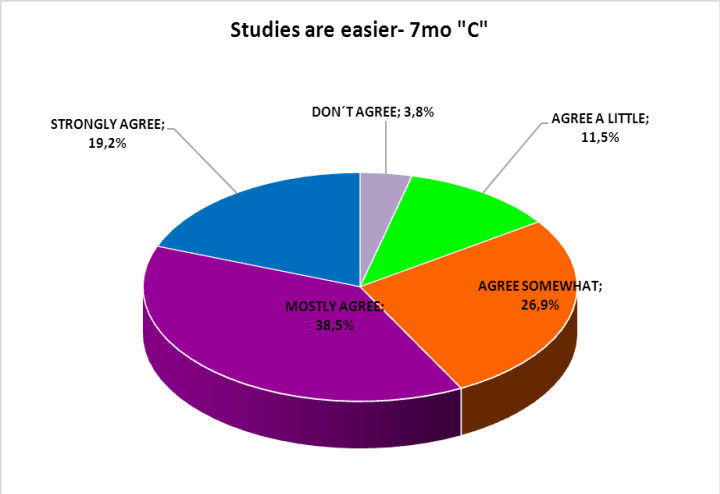


Figure 26: Studies are easier 7 "C"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Studies are easier" the 19,2% strongly agree, the 38,5% mostly agree, the 26,9% agree somewhat, the 11,5% agree a little, the 3,8% do notagree; which means that the students of this grade mostly agree that the studies are easier with the use of the IWB.

Statement: **Students are more focused**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	2	7,7%
AGREE A LITTLE	6	23,1%
AGREE SOMEWHAT	5	19,2%
MOSTLY AGREE	9	34,6%
STRONGLY AGREE	4	15,4%
NO ANSWER	0	0,0%
Total students	26	

Table 36: Students are more focused 7 "C"

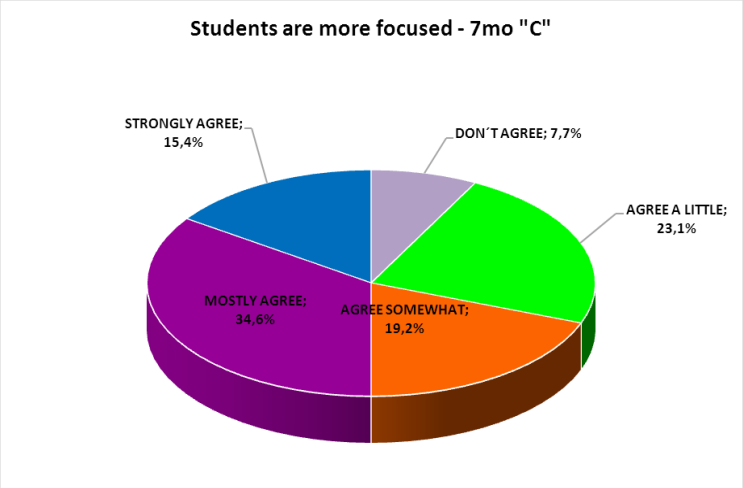


Figure 27: Students are more focused 7 "C"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Students are more focused" the 15,4% strongly agree, the 34,6% mostly agree, the 19,2% agree somewhat, the 23,1% agree a little, the 7,7% do notagree; which means that the students mostly agree in being more focused with the IWB use.

Statement:	The teacher involves students in class discussions	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE	2	7,7%
AGREE A LITTLE	3	11,5%
AGREE SOMEWHAT	3	11,5%
MOSTLY AGREE	6	23,1%
STRONGLY AGREE	12	46,2%
NO ANSWER	0	0,0%
Total students	26	

Table 37: Teacher involves students in class discussions 7 “C”

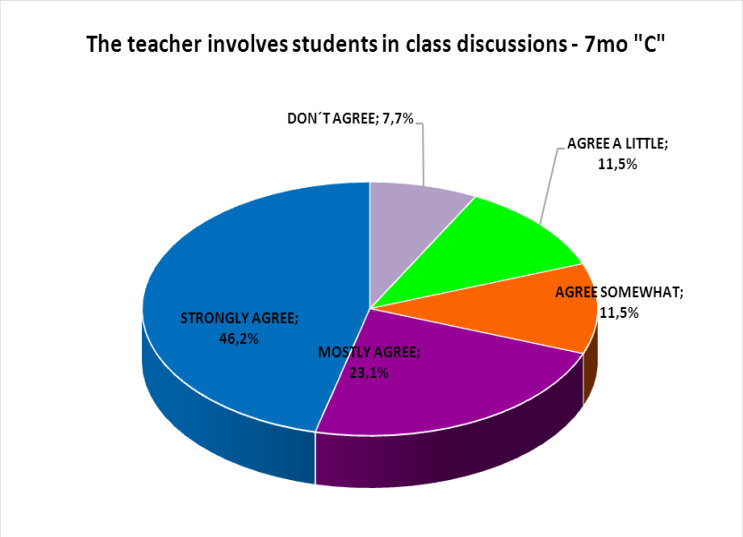


Figure 28: Teacher involves students in class discussions 7 “C”

SOURCE: Questionnaire

ANALYSIS

To the Statement “The teacher involves students in class discussion” the 46,2% strongly agree, the 23,1% mostly agree, the 11,5% agree somewhat, the 11,5% agree a little and the 7,7% do notagree; which means that the students strongly agree that the teacher involves them in class discussions when using the IWB.

Statement: **Students work in groups**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	9	34,6%
AGREE A LITTLE	5	19,2%
AGREE SOMEWHAT	8	30,8%
MOSTLY AGREE	3	11,5%
STRONGLY AGREE	1	3,8%
NO ANSWER	0	0,0%
Total students	26	

Table 38: Students work in groups 7 "C"

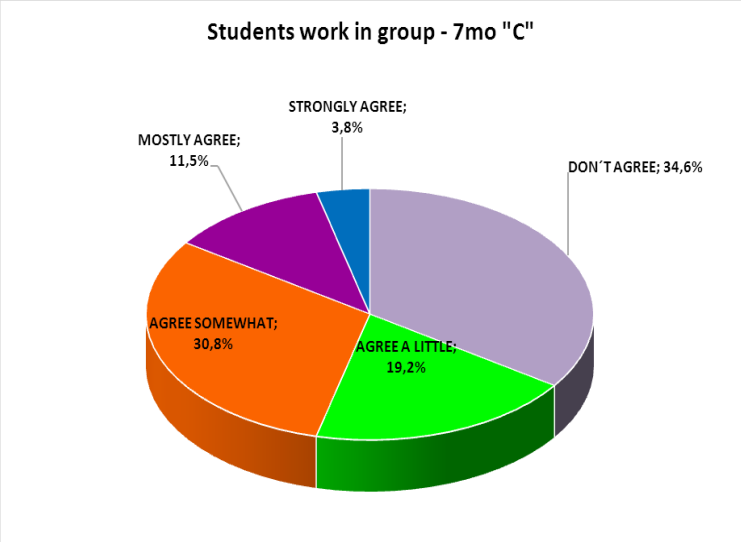


Figure 29: Students work in groups 7 "C"

SOURCE: Questionnaire

ANALYSIS

To the Statement "Students work in group" the 3,8% strongly agree, the 11,5% mostly agree, the 30,8% agree somewhat, the 19,2% agree a little and the 34,6% do notagree; which means that the students feel that they need to work more in groups using the IWB.

Statement: I like to come to school

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	10	38,5%
AGREE A LITTLE	2	7,7%
AGREE SOMEWHAT	4	15,4%
MOSTLY AGREE	8	30,8%
STRONGLY AGREE	2	7,7%
NO ANSWER	0	0,0%
Total students	26	

Table 39: I like to come to school 7 “C”

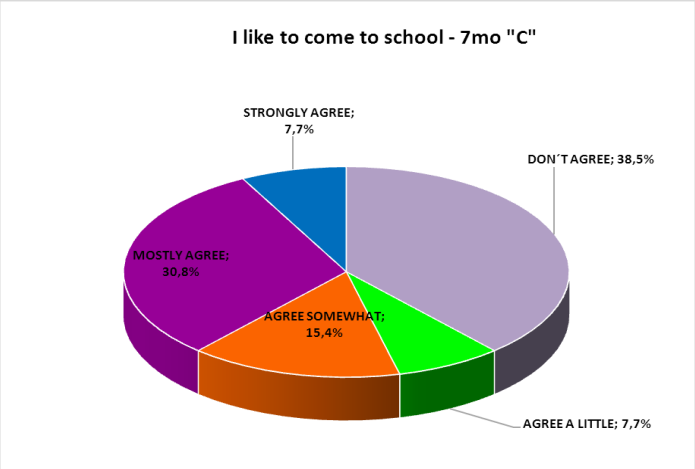


Figure 30: I like to come to school 7 “C”

SOURCE: Questionnaire

ANALYSIS

To the Statement “I like to come to school” the 7,7% strongly agree, the 30,8% mostly agree, the 15,4% agree somewhat, the 7,7% agree a little, the 38,5% do notagree; which means that there is a need to increase their interest in coming to school to the students of the grade “C”.

Statement:	The topics we learn are connected to my life and are relevant to me	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE	13	50,0%
AGREE A LITTLE	6	23,1%
AGREE SOMEWHAT	6	23,1%
MOSTLY AGREE	1	3,8%
STRONGLY AGREE		0,0%
NO ANSWER	0	0,0%
Total students	26	

Table 40: The topics we learn are connected to my life 7 "C"

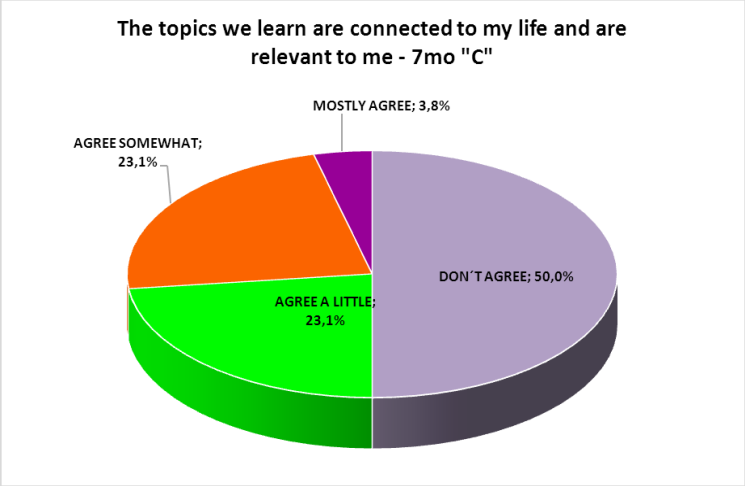


Figure 31: The topics we learn are connected to my life 7 "C"

SOURCE: Questionnaire

ANALYSIS

To the Statement "The topics we learn are connected to my life and are relevant to me" the 3,8% mostly agree, the 23,1% agree somewhat, the 23,1% agree a little, the 50,0% do notagree; which means that the students are not satisfy to what they are learning and they feel the topics are not relevant for them.

Statement:	The IWB help me with the lessons	
INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE	10	38,5%
AGREE A LITTLE	2	7,7%
AGREE SOMEWHAT	7	26,9%
MOSTLY AGREE	5	19,2%
STRONGLY AGREE	2	7,7%
NO ANSWER	0	0,0%
Total students	26	

Table 41: The IWB help me with the lessons 7 “C”

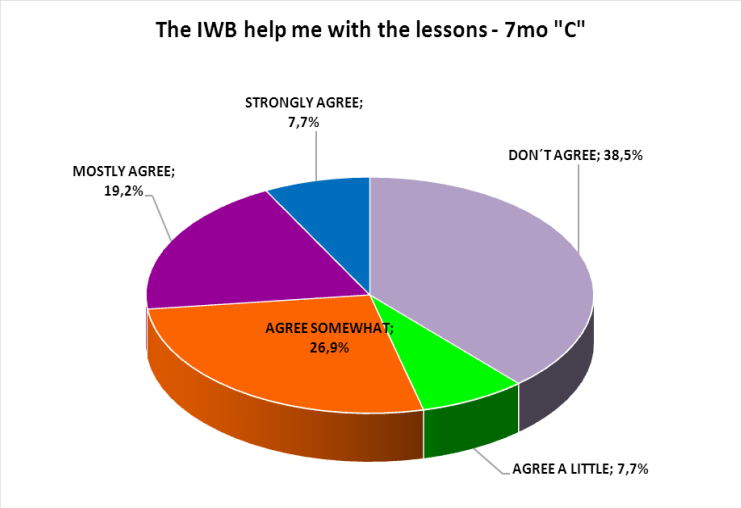


Figure 32: The IWB help me with the lessons 7 “C”

SOURCE: Questionnaire

ANALYSIS

To the Statement “The IWB help me with the lessons” the 7,7% strongly agree, the 19,2% mostly agree, the 26,9% agree somewhat, the 7,7% agree a little, the 38,5% do notagree; which means that the students feel that the use of the IWB is not helping them with the lesson.

4.2.1 Teacher Perspective: Will there be a change in teacher's instructional processes? What kind of change?

Method of using the IWB:

The three teachers were asked how they used the IWB during instruction. The main uses for the IWBs were for searching and surfing the internet, for projecting presentations, presenting new activities and including the students in the lesson, they also used it to see documentaries, movies and play-a-long song activities which help to the students pronunciation of the foreign language.

Interactive teaching

The teacher´s answers to the questionnaires were also similar to the findings in the Pilot Project (Manny-Ikan, 2008), that this thesis was based on. The answers indicated that they use the IWB, but they remain in the traditional work model. During class activity, teachers use internet research, games, and make their students manipulate the objects on the IWB and written excercises with the special pen. Teachers must improve their technical skills of the IWB, so they can enrich existing pedagogy. Collaboration between student-teacher improve and the lessons are interesting as the students are able to work in groups. The hidden potential of the IWB is sub-utilized and it is imperative to improve learning and instruction processes.

Teacher attitudes towards use of the IWB

Teachers indicated that although the preparation of the lessons using the IWB takes more time to do it, the result is great: student interest, motivation, and attention increases. They are able to create an interesting lesson for different learning styles (aural, tactile and visual), they can plan a better lesson, they find out that the didactic materials at hand are more easily adaptable for students with varying abilities, the lesson is shown more clearly. They feel that at the end of the lesson and using the IWB makes them more professional and enables the exposure of different materials.

TEACHERS

Teachers Attitudes toward Instructing Using the IWB

	N	Mean	Std. Deviation
Enjoy teaching	3	**5,00**	-
I need to invest a lot of more work	3	**2,67**	0,58
I can more appropriately match the learning materials to the needs of different students	3	**4,67**	0,58
I have better access to learning materials and resources at different levels	3	**4,33**	1,15
I can teach topics in greater depth	3	**4,67**	0,58
I feel that my instruction is more professional	3	**4,33**	1,15
I am open to more up-to-date materials	3	**4,33**	1,15
I am strengthening my knowledge in the subject areas I teach	3	**4,67**	0,58
I can more easily fulfill the learning goals	3	**4,00**	1,00
I raise my expectations from student´s work	3	**4,67**	0,58
I feel that the students appreciate me more	3	**4,33**	1,15
There are fewer disciplines disturbances in the class	3	**4,00**	1,73
I am more dominant and meaningful in the school	3	**4,33**	1,15

Scale: 1- don't agree, 2-agree a little, 3-agree somewhat, 4-mostly agree, 5-strongly agree

Table 42 Statistics 1st. Questionnaire Teachers Attitudes Instructing IWB

It appears that the Statements that were most agreed with relate to the teachers enjoying teaching (5,00 s.d. = 0) was the most agreed. The Statement that was least agreed was Teaching with the IWB requires a greater investment of work (2,67 s.d. = 0,58). The standard deviation illustrate that are few differences exist between the teachers.

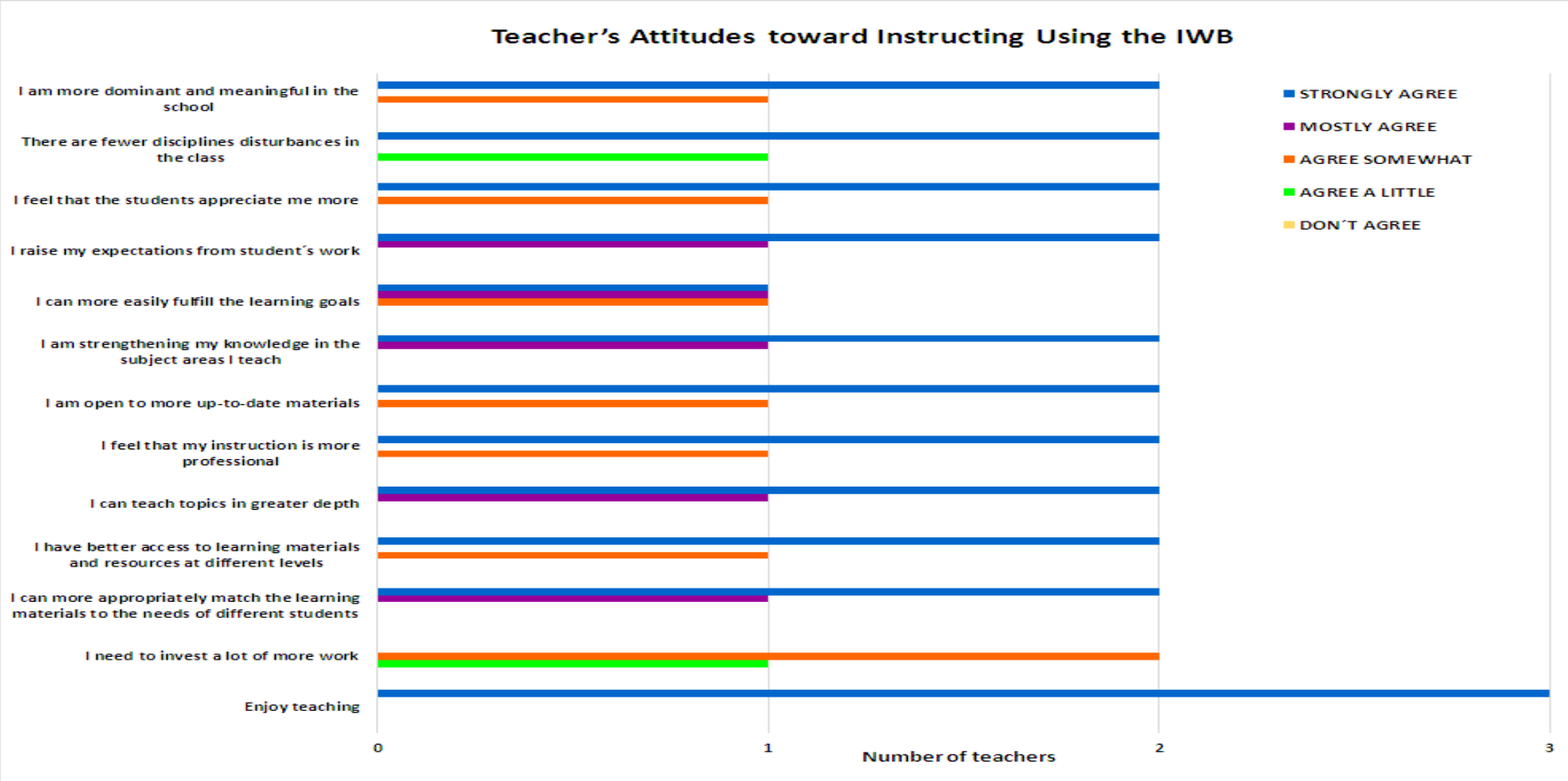
Teacher´s attitudes toward instruction using the IWB

TEACHERS	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	
Enjoy teaching	0,0%	0,0%	0,0%	0,0%	100,0%	100,0%
I need to invest a lot of more work	0,0%	33,3%	66,7%	0,0%	0,0%	100,0%
I can more appropriately match the learning materials to the needs of different students	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I have better access to learning materials and resources at different levels	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
I can teach topics in greater depth	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I feel that my instruction is more professional	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
I am open to more up-to-date materials	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
I am strengthening my knowledge in the subject areas I teach	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I can more easily fulfill the learning goals	0,0%	0,0%	33,3%	33,3%	33,3%	100,0%
I raise my expectations from student´s work	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I feel that the students appreciate me more	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
There are fewer disciplines disturbances in the class	0,0%	33,3%	0,0%	0,0%	66,7%	100,0%
I am more dominant and meaningful in the school	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%

Table 43: Percentages 1st. Questionnaire – Teacher´s Attitudes toward instruction using IWB

In this Table the teacher´s attitudes strongly agree, toward instruction using the IWB. They agreed to enjoy teaching while using the board during class activity.

Teachers´responses to the first questionnaire:



Graphic 4: Graphic of Teacher´s responses to First Questionnaire

In this graphic we can see the whole perspective of the answers received by the three teachers. It was measured the "Teacher´s attitudes towards instructing using the IWB" . They strongly agree instructing using IWB.

It is important to analyze each of the answers received by the teachers in the first questionnaire:

Statement:	**Enjoy teaching**	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE		0,0%
STRONGLY AGREE	3	100,0%
Total teachers	3	

Table 44: Enjoy teaching

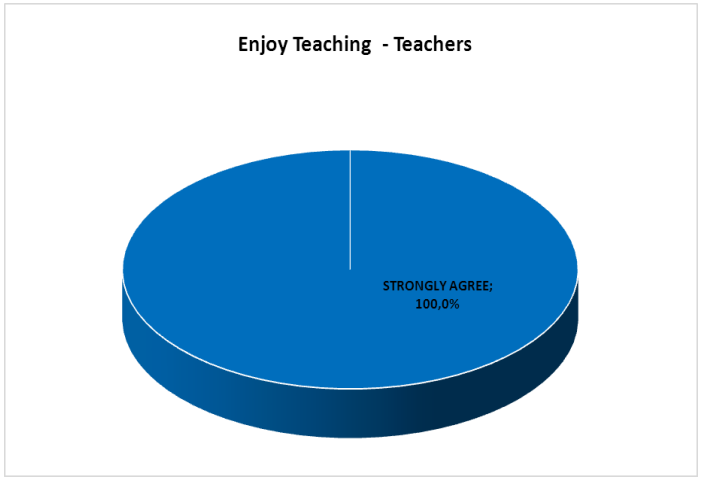


Figure 33: Enjoy teaching

SOURCE: Statement

ANALYSIS

To the Statement “Enjoy teaching” the 100% , which means that all the teachers strongly agree in enjoying teaching while using the IWB.

Statement: **I need to invest a lot of more work**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE		0,0%
AGREE A LITTLE	1	33,3%
AGREE SOMEWHAT	2	66,7%
MOSTLY AGREE		0,0%
STRONGLY AGREE		0,0%
Total teachers	3	

Table 45: I need to invest a lot of more work

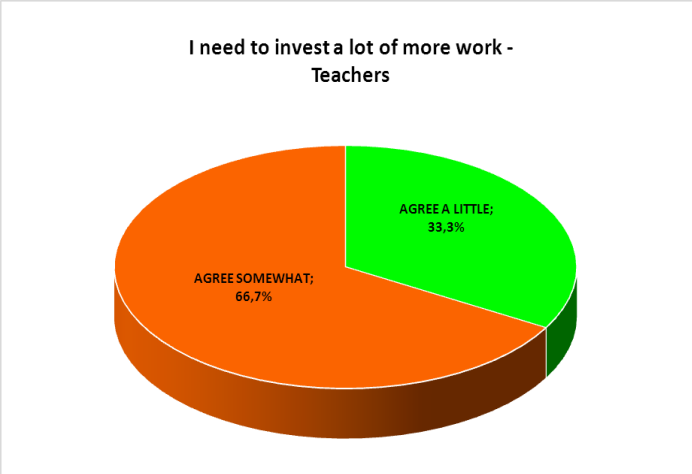


Figure 34: I need to invest a lot of more work

SOURCE: Questionnaire

ANALYSIS

To the Statement “I need to invest a lot of more work” the 66,7% agree somewhat and the 33,3 agree a little; which means that they feel the need to invest more work when using the IWB.

Statement:	I can more appropriately match the learning materials to the needs of different students	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE	1	33,3%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 46: I can more appropriately match the learning

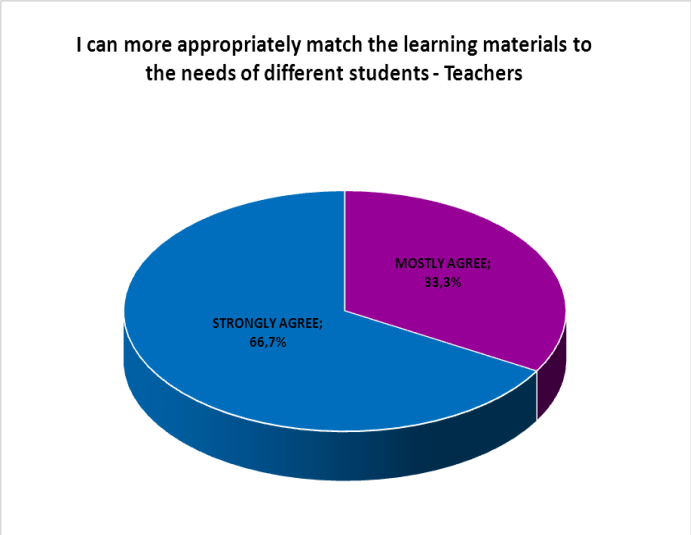


Figure 35: I can more appropriately match the learning

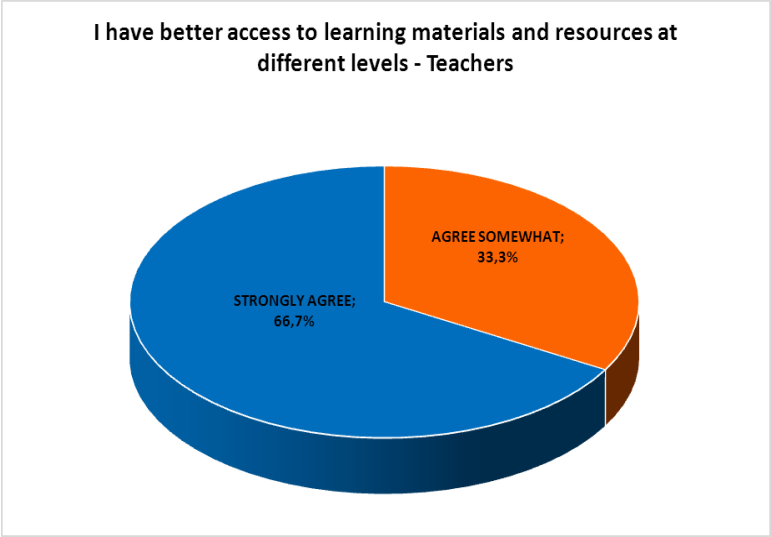
SOURCE: Questionnaire

ANALYSIS

To the Statement "I can more appropriately match the learning materials to the needs of different students" the 66,7% strongly agree and the 33,3 mostly agree; which means that the teachers feel that they can match the learning materials to the different needs of their students with the use of the IWB.

Statement:	I have better access to learning materials and resources at different levels	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	33,3%
MOSTLY AGREE		0,0%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 47: I have better Access to learning materials…



SOURCE: Questionnaire

ANALYSIS

To the Statement “I have better access to learning materials and resources at different levels” the 66,7% strongly agree and the 33,3% agree somewhat; which means that the teachers feel they have better access to learning material when using the IWB.

Statement:	I can teach topics in greater depth	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE	1	33,3%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 48: I can teach topics in greater depth

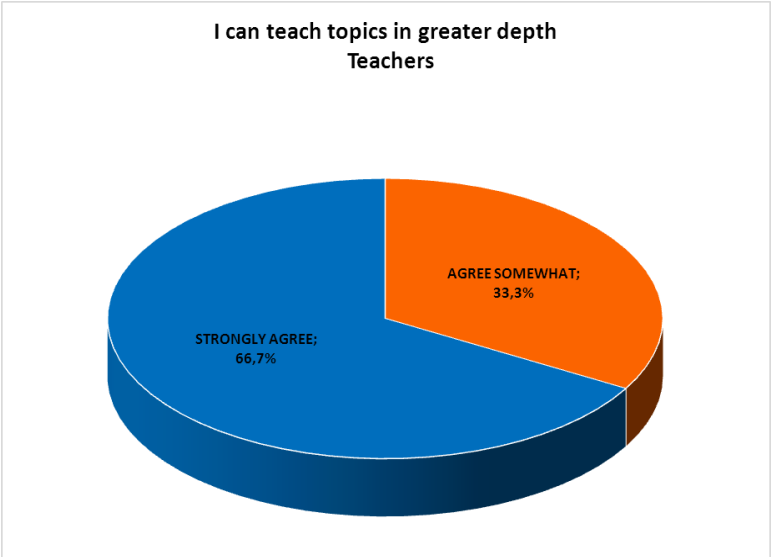


Figure 36: I can teach topics in greater depth

SOURCE: Questionnaire

ANALYSIS

To the Statement “I have better access to learning materials and resources at different levels” the 66,7% strongly agree and the 33,3% agree somewhat; which means that the teachers feel they have better access to learning material when using the IWB.

Statement:	I feel that my instruction is more professional	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	33,3%
MOSTLY AGREE		0,0%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 49: I feel that my instruction is more professional

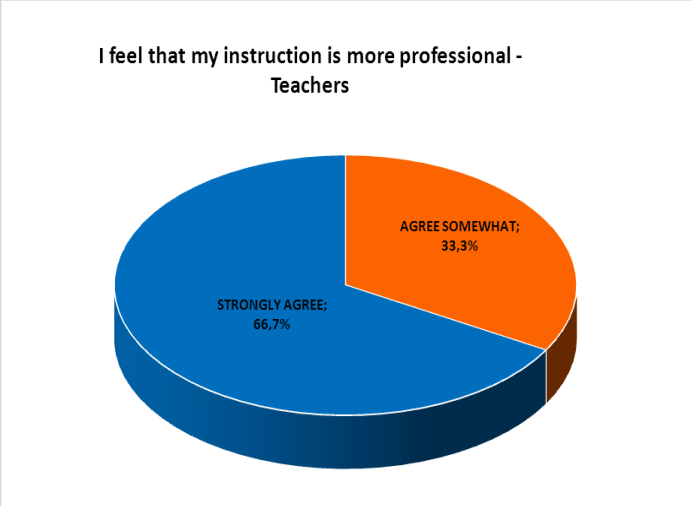


Figure 37: I feel that my instruction is more professional

SOURCE: Questionnaire

ANALYSIS

To the Statement “I feel that my instruction is more professional” the 66,7% strongly agree, and the 33,3% agree somewhat; which means, the teachers feel that they do a more professional job by using the IWB in class activity.

Statement:	I am open to more up-to-date materials	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	33,3%
MOSTLY AGREE		0,0%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 50: I am open to more up-to-date materials

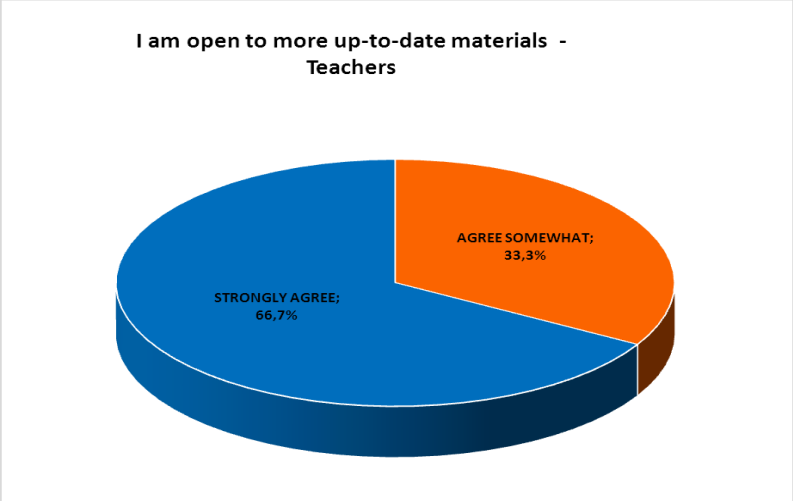


Figure 38: I am open to more up-to-date materials

SOURCE: Questionnaire

ANALYSIS

To the Statement “I am open to more up-to-date materials” the 66,7% strongly agree, and the 33,3% agree somewhat; which means, the teachers feel that they are more open to up-to-date materials by using the IWB in class activity.

Statement:	I am strengthening my knowledge in the subject areas I teach	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE	1	33,3%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 51: I am strengthening my knowledge in the subjects I teach

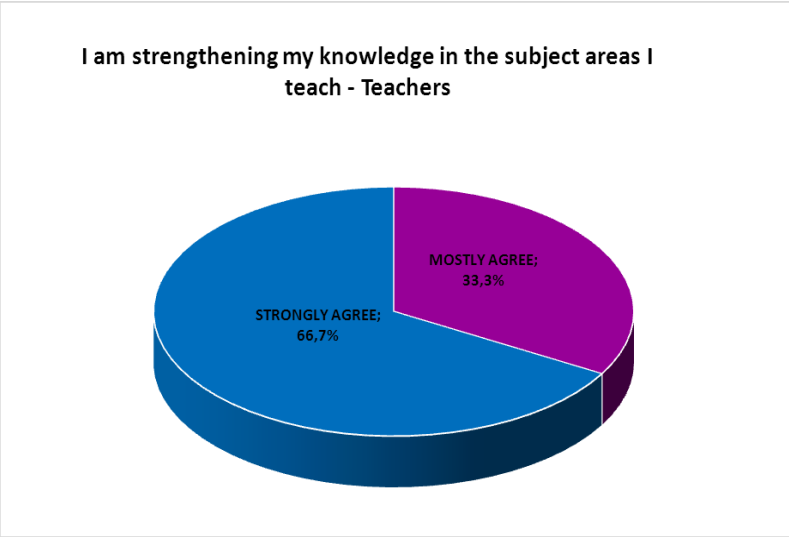


Figure 39: I am strengthening my knowledge in the subjects area I teach

SOURCE: Questionnaire

ANALYSIS

To the Statement “I am strengthening my knowledge in the subject areas I teach” the 66,7% strongly agree and the 33,3% mostly agree; which means that the teachers feel that they are strengthening their knowledge in the subject area they teach thanks to the help of the IWB during class activity.

Statement:	I can more easily fulfill the learning goals	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	33,3%
MOSTLY AGREE	1	33,3%
STRONGLY AGREE	1	33,3%
Total teachers	3	

Table 52: I can more easily fulfill the learning goals

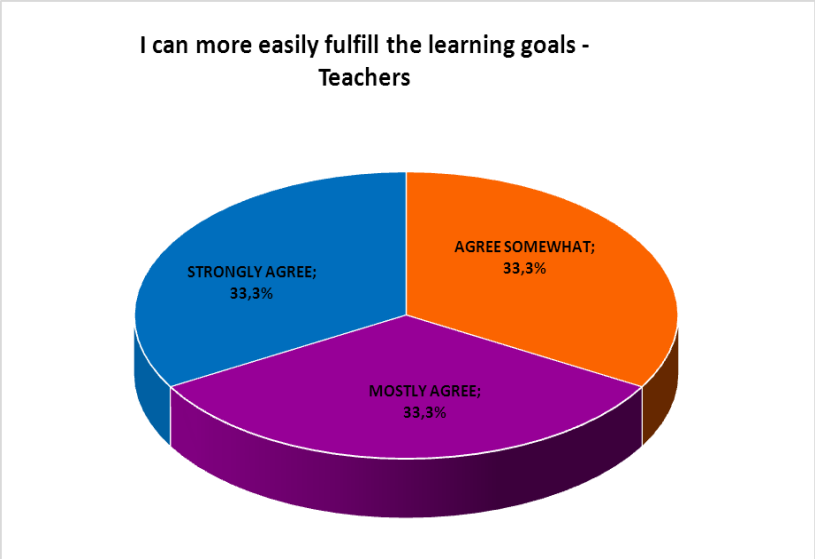


Figure 40: I can more easily fulfill the learning goals

SOURCE: Questionnaire

ANALYSIS

To the Statement “I can more easily fulfill the learning goals” the 33,3% strongly agree, the 33,3% mostly agree and the 33,3% agree somewhat; which means that all the three teachers feels the same by using the IWB to more easily fulfill the learning goals.

Statement: **I raise my expectations from student´s work**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE	1	33,3%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 53: I raise my expectations from student´s work

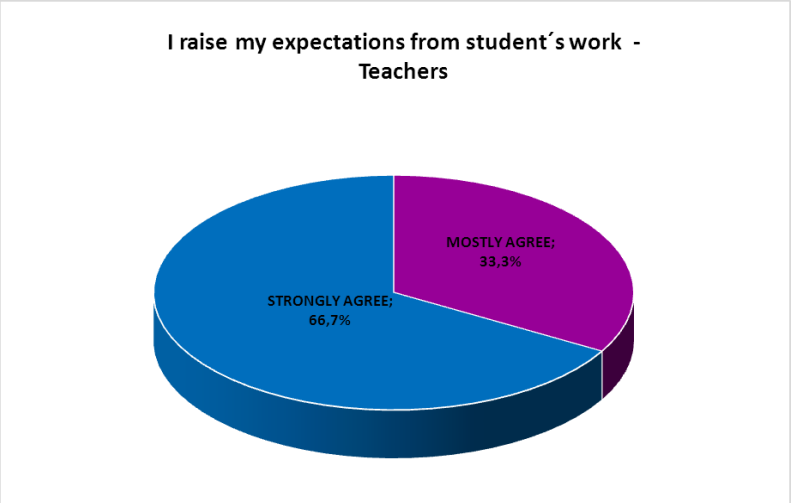


Figure 41: I raise my expectations from student´s work

SOURCE: Questionnaire

ANALYSIS

To the Statement “I raise my expectations from student´s work”, the 66,7% strongly agree and the 33,3% mostly agree; which means that when the teaches use the IWB, they raise their expectation from student´s work when they use the IWB in class activity.

Statement: **I feel that the students appreciate me more**

INDICATORS	FREQUENCY	PERCENTAGE
DO NOTAGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	33,3%
MOSTLY AGREE		0,0%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 54: I feel that the students appreciate me more

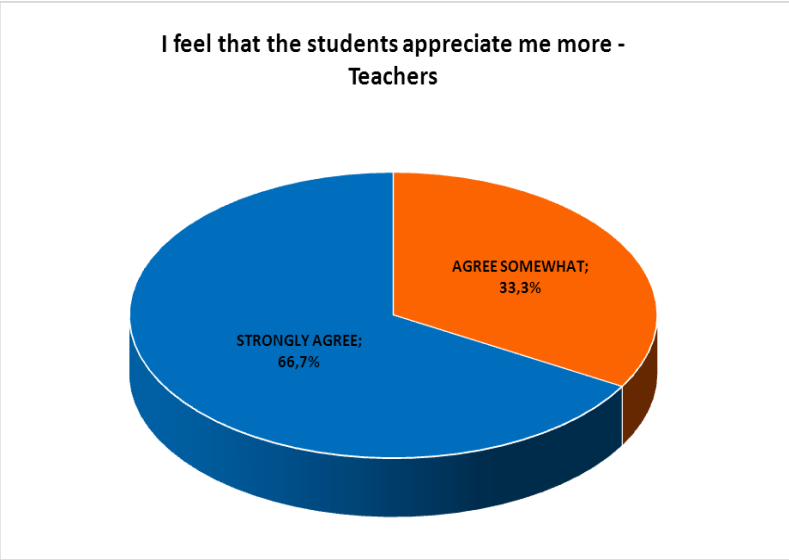


Figure 42: I feel that the students appreciate me more

SOURCE: Questionnaire

ANALYSIS

To the Statement “I feel that the students appreciate me more”, the 66,7% strongly agree and the 33,3% agree somewhat; which means that the teachers feels that the students appreciate them more because of the use of the IWB during class activity.

Statement:	There are fewer disciplines disturbances in the class	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOTAGREE		0,0%
AGREE A LITTLE	1	33,3%
AGREE SOMEWHAT		0,0%
MOSTLY AGREE		0,0%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 55: There are fewer disciplines disturbances in the class

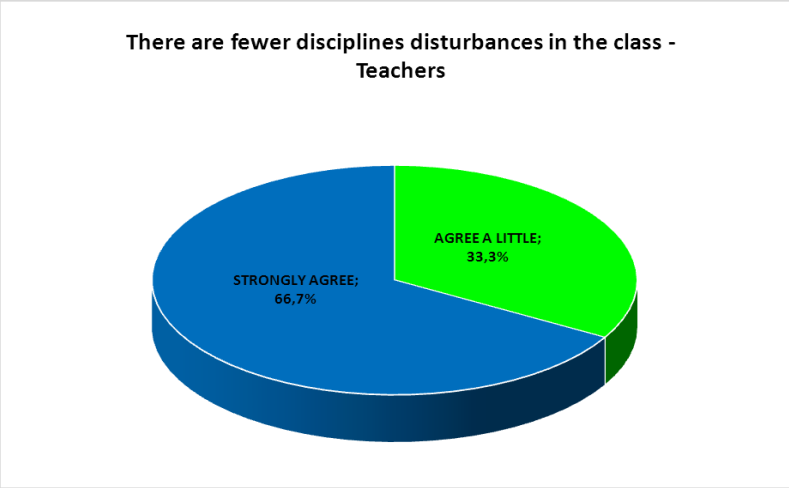


Figure 43: There are fewer disciplines disturbances in the class

SOURCE: Questionnaire

ANALYSIS

To the Statement “There are fewer disciplines disturances in the class” the 66,7% strongly agree and the 33,3% agree a little; wich means that the teachers feel that they can control much better the discipline disturbances when they use the IWB in class.

Statement:	I am more dominant and meaningful in the school	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
DO NOT AGREE		0,0%
AGREE A LITTLE		0,0%
AGREE SOMEWHAT	1	33,3%
MOSTLY AGREE		0,0%
STRONGLY AGREE	2	66,7%
Total teachers	3	

Table 56: I am more dominant and meaningful in the school

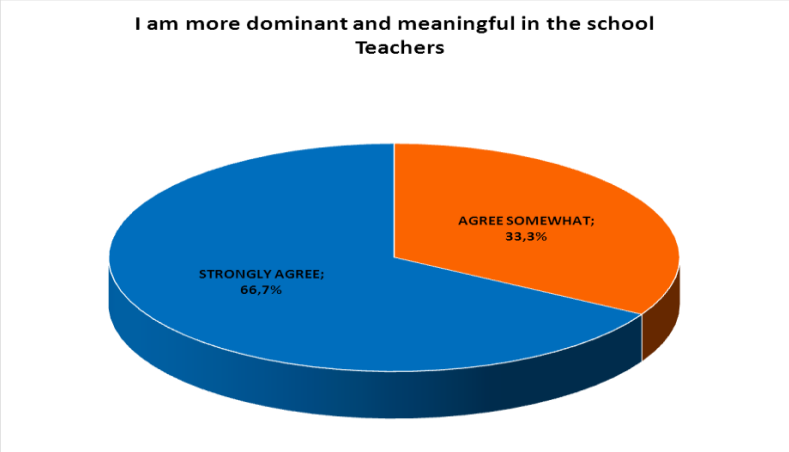


Figure 44: I am more dominant and meaningful in the school

SOURCE: Questionnaire

ANALYSIS

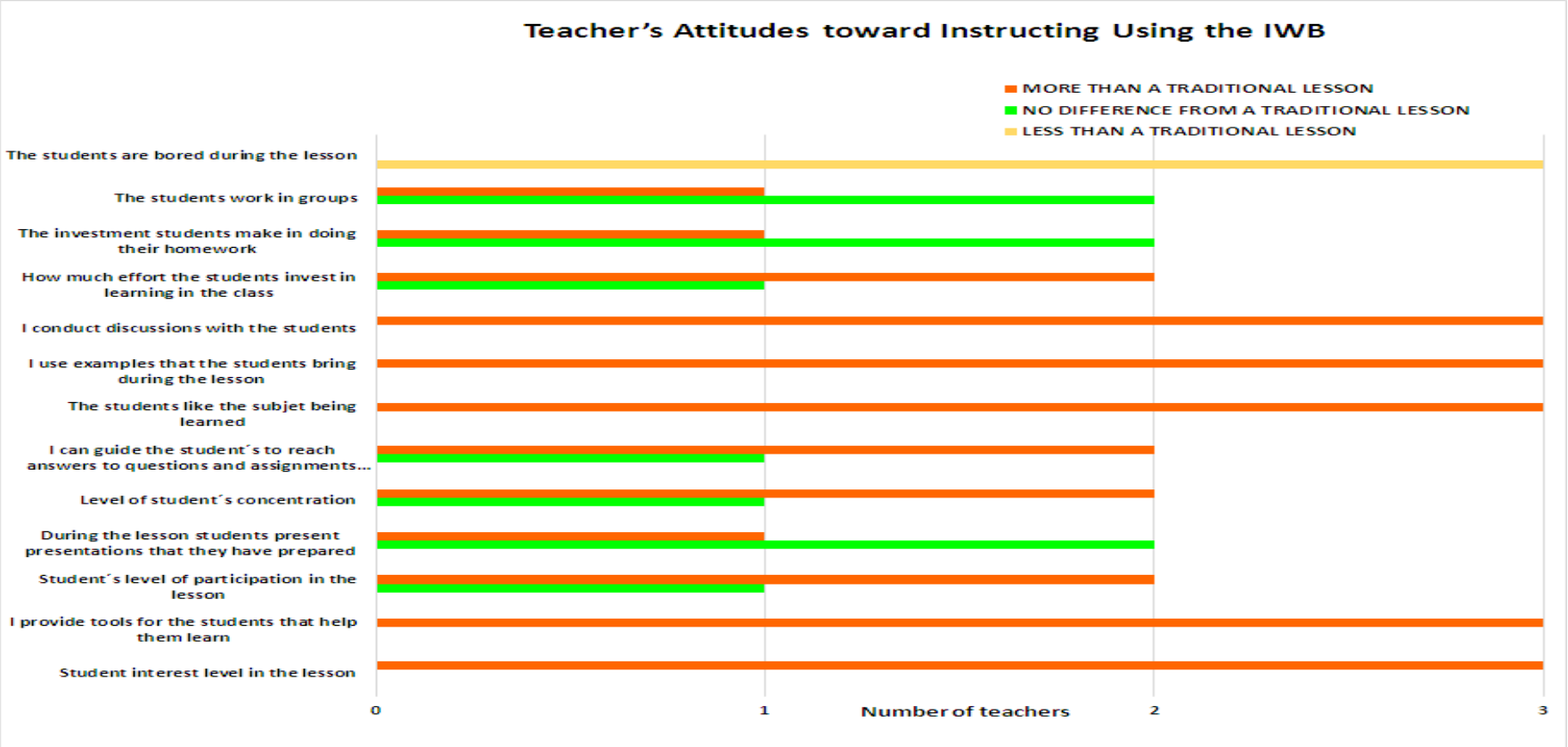
To the Statement "I am more dominant and meaningful in the schools", the 66,7% strongly agree and the 33,3% agree somewhat; which means that the teachers felt themselves more dominant and meaningful in the school because the teach with the IWB.

Teachers found the use of the IWB as a great tool that lead to greater variety, illustration, and motivation to learn. Instruction using the IWB is more enjoyable for teachers, but at the same time requires greater investment in planning lessons.

Teacher Attitudes toward Instructing Using the IWB			
	N	**Mean**	**Std. Deviation**
Enjoy teaching	3	**5,00**	-
I need to invest a lot of more work	3	**2,67**	0,58
I can more appropriately match the learning materials to the needs of different students	3	**4,67**	0,58
I have better access to learning materials and resources at different levels	3	**4,33**	1,15
I can teach topics in greater depth	3	**4,67**	0,58
I feel that my instruction is more professional	3	**4,33**	1,15
I am open to more up-to-date materials	3	**4,33**	1,15
I am strengthening my knowledge in the subject areas I teach	3	**4,67**	0,58
I can more easily fulfill the learning goals	3	**4,00**	1,00
I raise my expectations from student´s work	3	**4,67**	0,58
I feel that the students appreciate me more	3	**4,33**	1,15
There are fewer disciplines disturbances in the class	3	**4,00**	1,73
I am more dominant and meaningful in the school	3	**4,33**	1,15
Scale: 1- don't agree, 2-agree a little, 3-agree somewhat, 4-mostly agree, 5-strongly agree			

Table 57: Statistics Teacher´s Attitudes to Instructing IWB

Teachers´atitudes toward instructing using the IWB



Graphic 5: Teachers´s Attitudes instructing using IWB 2nd. Questionnaire

In the graphic we can see the whole perspective of the answers received by the three teachers toward their attitudes by instructing using the IWB. It was measured the “Teacher attitudes toward instructing using the IWB”, as a traditional lesson. The teachers agree that this type of teaching is more than a traditional lesson.

It is important to analyze each one of the answers received by the teacher's attitudes toward instructing using the IWB:

Statement:	Student interest level in the lesson	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON		0,0%
MORE THAN A TRADITIONAL LESSON	3	100,0%
Total teachers	**3**	

Table 58: Student interest level in the lesson

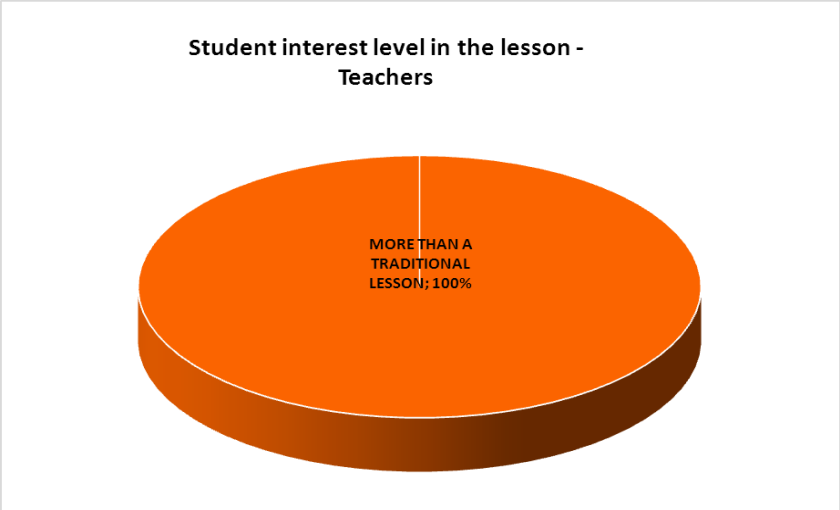


Figure 45: Student interest level in the lesson

SOURCE: Questionnaire

ANALYSIS

To the Statement "Student interest level in the lesson" the 100% of the teachers agree; which means that the teachers think that when they use the IWB, the classes are more than a traditional lesson class activity.

Statement:	I provide tools for the students that help them learn	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON		0,0%
MORE THAN A TRADITIONAL LESSON	3	100,0%
Total teachers	3	

Table 59: I provide tools for the students that help them learn

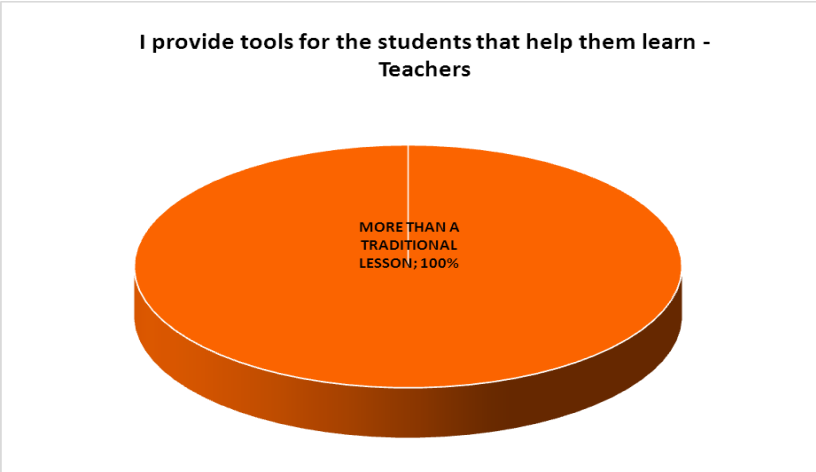


Figure 46: I provide tools for the students that help them learn

SOURCE: Questionnaire

ANALYSIS

To the Statement “I provide tools for the students that help them learn” the 100% of the teachers think that they provide more than a traditional lesson with the help of the IWB.

Statement:	Student´s level of participation in the lesson	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	1	33,3%
MORE THAN A TRADITIONAL LESSON	2	66,7%
Total teachers	3	

Table 60: Student´s level of participation in the lesson

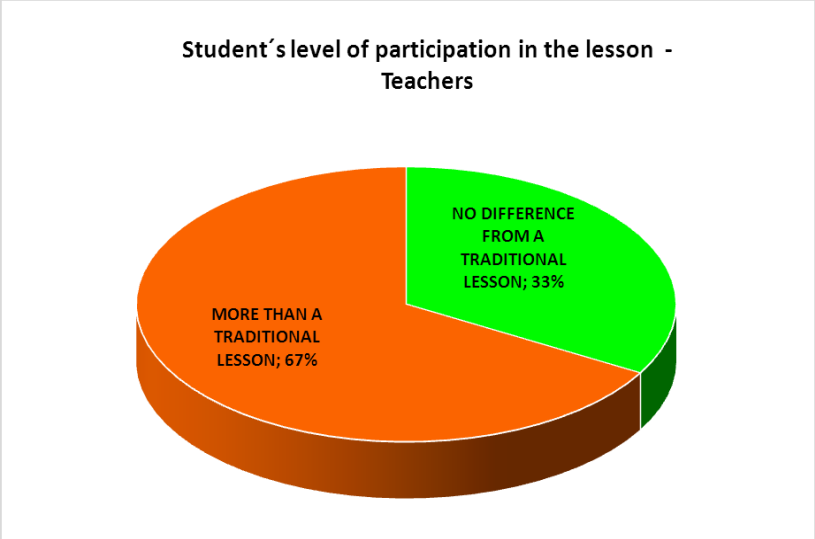


Figure 47: Student´s level of participation in the lesson

SOURCE: Questionnaire

ANALYSIS

To the Statement “Student´s level of participation in the lesson”, the 67% think is more than a traditional lesson and the 33% think there is no difference from a traditional lesson; which means that the teachers feel that the student´s level of participation increases with the use of the IWB.

Statement:	During the lesson students present presentations that they have prepared	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	2	66,7%
MORE THAN A TRADITIONAL LESSON	1	33,3%
Total teachers	3	

Table 61: Students present presentations they have prepared

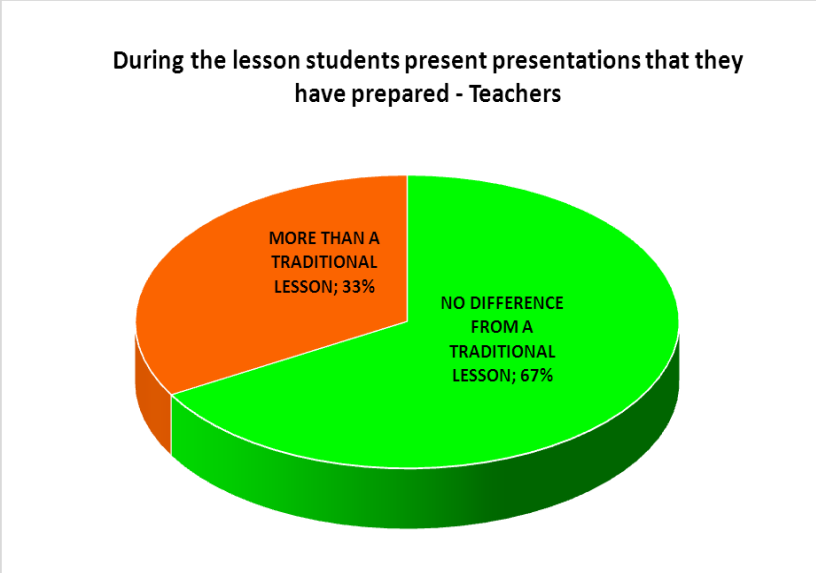


Figure 48: Students present presentations they have prepared

SOURCE: Questionnaire

ANALYSIS

To the Statement “During the lesson students present presentations that they have prepared”, the 67% the teachers think there is no difference from a traditional lesson and the 33% think that is more than a traditional lesson; which means that the teachers feel that with or without the IWB the students present presentations during the lesson.

Statement:	Level of student´s concentration	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	1	33,3%
MORE THAN A TRADITIONAL LESSON	2	66,7%
Total teachers	3	

Table 62: Level of student´s concentration

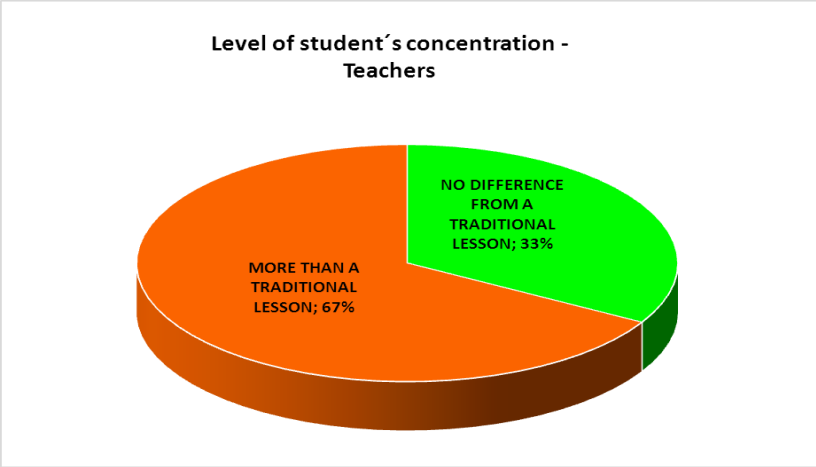


Figure 49: Level of student´s concentration

SOURCE: Questionnaire

ANALYSIS

To the Statement "Level of student´s concentration", the 67% of the teachers think is more than a traditional lesson and the 33% think there is no difference from a traditional lesson; which means that the level of student´s concentration increases with the help of the IWB.

Statement:	I can guide the student´s to reach answers to questions and assignments on their own	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	1	33,3%
MORE THAN A TRADITIONAL LESSON	2	66,7%
Total teachers	3	

Table 63: I can guide student´s reach answers on their own

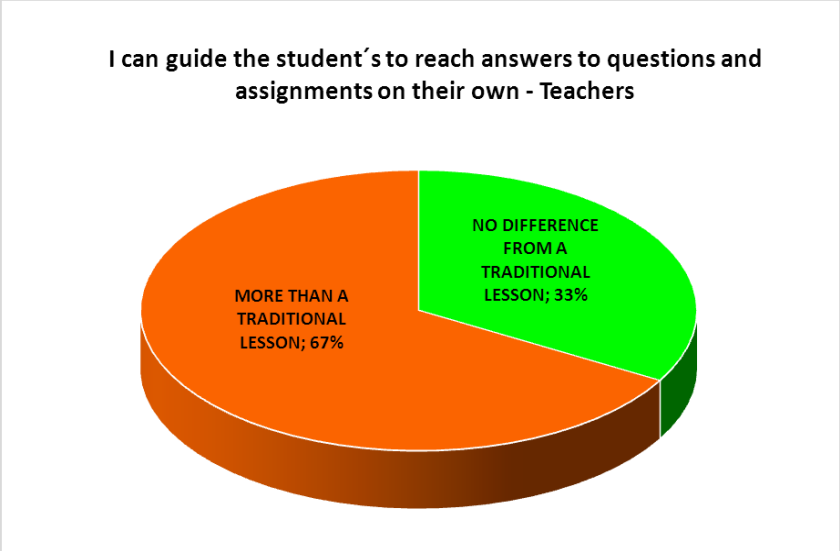


Figure 50: I can guide student´s reach answers on their own

SOURCE: Questionnaire

ANALYSIS

To the Statement “I can guide the student´s to reach answers to questions and assignments on their own”, the 67% of the teachers think is more than a traditional lesson and the 33% think that there is no difference from a traditional lesson; which means that the teachers feel that with the use of the IWB help to the students to reach answers to questions and assignments during class activity.

Statement:	The students like the subject being learned	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON		0,0%
MORE THAN A TRADITIONAL LESSON	3	100,0%
Total teachers	**3**	

Table 64: The students like the subject being learned

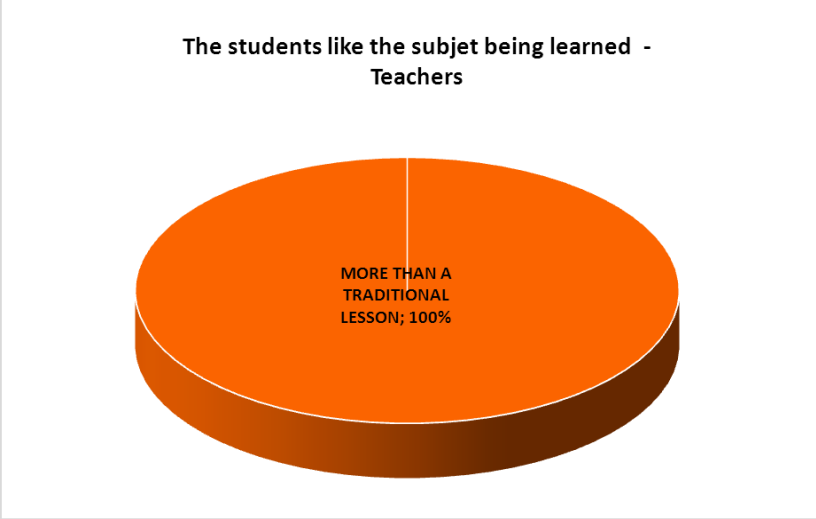


Figure 51: The students like the subject being learned

SOURCE: Questionnaire

ANALYSIS

To the Statement “The students like the subject being learned”, the 100% of the teachers agree that it is more than a traditional lesson; which means that their students like the subject being learned with the help of the IWB.

Statement:	I use examples that the students bring during the lesson	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON		0,0%
MORE THAN A TRADITIONAL LESSON	3	100,0%
Total teachers	**3**	

Table 65: I use examples that the students bring during the lesson

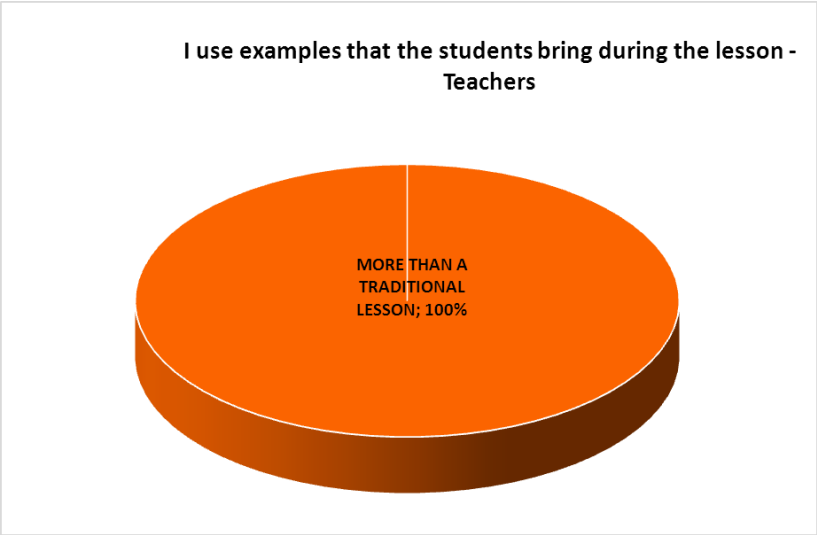


Figure 52: I use examples that the students bring during the lesson

SOURCE: Questionnaire

ANALYSIS

To the Statement “I use examples that the students bring during the lesson”, the 100% of the teachers think that it is more than a traditional lesson; which means that they think that when using examples that the students bring during the lesson makes the class much more interesting with the help of the IWB.

Statement:	I conduct discussions with the students	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON		0,0%
MORE THAN A TRADITIONAL LESSON	3	100,0%
Total teachers	3	

Table 66: I conduct discussions with the students

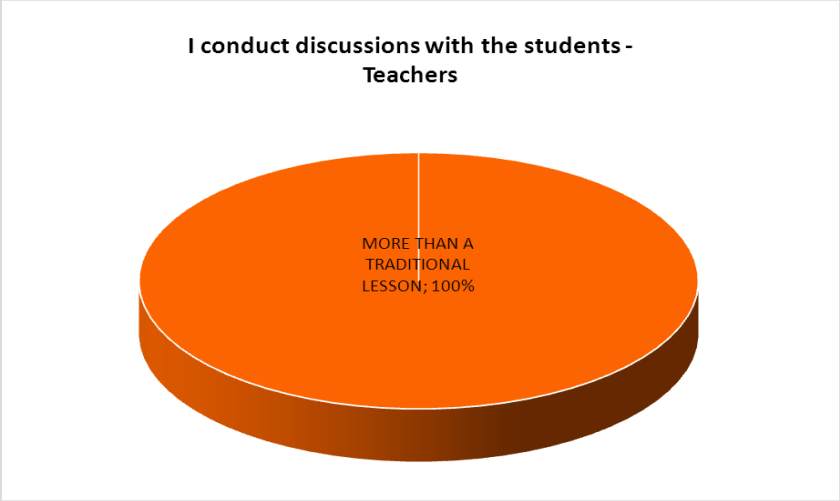


Figure 53: I conduct discussions with the students

SOURCE: Questionnaire

ANALYSIS

To the Statement “I conduct discussions with the students”, the 100% of the teachers think it is more than a traditional lesson; which means that the classes with the students are more active due to the use of the IWB.

Statement:	How much effort the students invest in learning in the class	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	1	33,3%
MORE THAN A TRADITIONAL LESSON	2	66,7%
Total teachers	**3**	

Table 67: How much effort the students invest in learning in the class

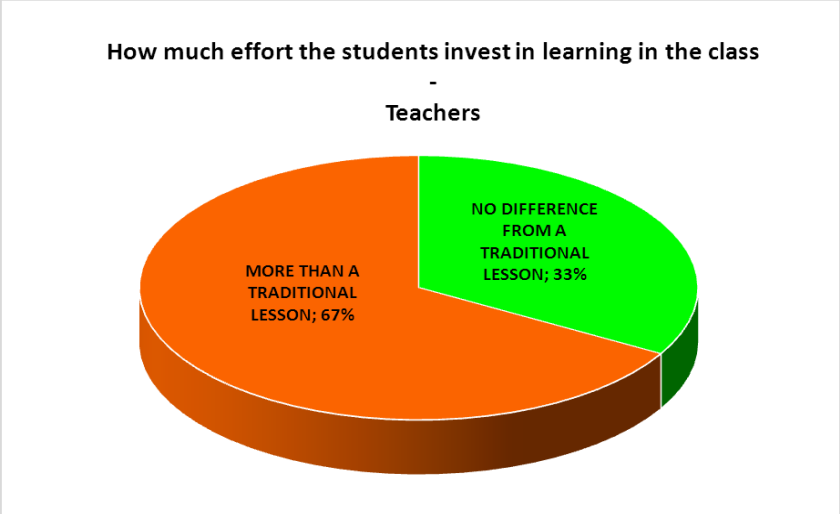


Figure 54: How much effort the students invest in learning in the class

SOURCE: Questionnaire

ANALYSIS

To the Statement “How much effort the students invest learning in the class” the 67% of the teachers think that it is more than a traditional lesson and the 33% thinks that there is no difference from a traditional lesson; which means that the teachers feel that the students invest more effort in the class when they work with the IWB.

Statement:	The investment students make in doing their homework	
INDICATORS	FREQUENCY	PERCENTAGE
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	2	66,7%
MORE THAN A TRADITIONAL LESSON	1	33,3%
Total teachers	3	

Table 68: The investment students make in doing their homework

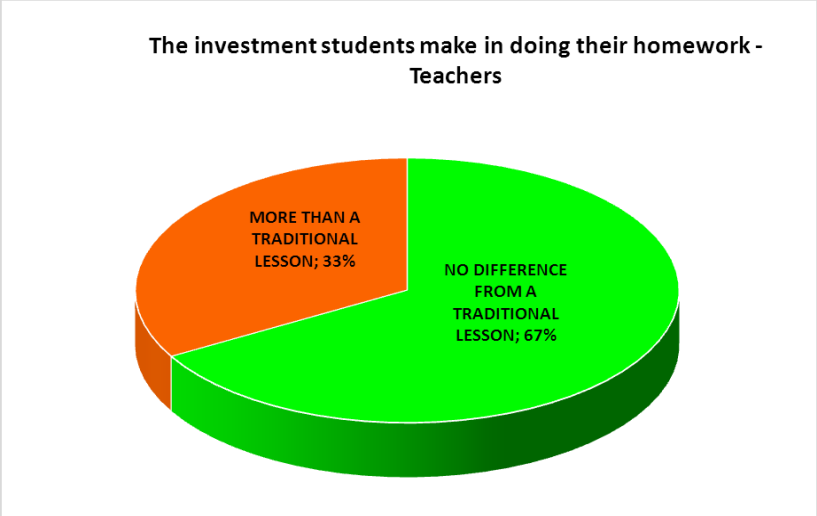


Figure 55: The investment students make in doing their homework

SOURCE: Questionnaire

ANALYSIS

To the Statement "The investment students make in doing their homework", the 33% of the teachers think that there is no difference from a traditional lesson and the 67% think that is more than a traditional lesson; which means that the teachers feel that there is no difference with or without the use of the IWB and the regular class when the students invest more time in doing their homework.

Statement:	The students work in groups	
INDICATORS	FREQUENCY	PERCENTAGE
LESS THAN A TRADITIONAL LESSON		0,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON	2	66,7%
MORE THAN A TRADITIONAL LESSON	1	33,3%
Total teachers	3	

Table 69: The students work in groups

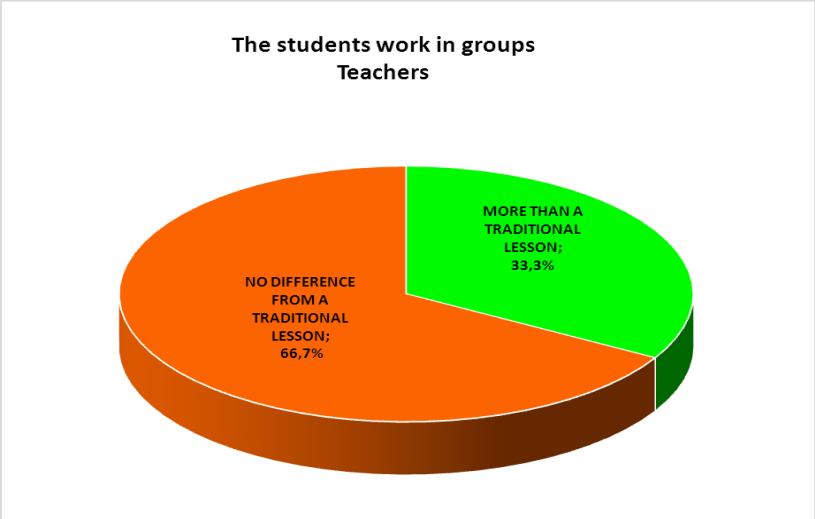


Figure 56: The students work in groups

SOURCE: Questionnaire

ANALYSIS

To the Statement “The students work in groups”; the 66,7% of the teachers think that there is no difference from a traditional lesson and the 33% think that is more than a traditional lesson; which means that the teachers feel that there is no difference with or without the use of the IWB and the regular class when the students invest more time in doing their homework.

Statement:	The students are bored during the lesson	
INDICATORS	FREQUENCY	PERCENTAGE
LESS THAN A TRADITIONAL LESSON	3	100,0%
NO DIFFERENCE FROM A TRADITIONAL LESSON		0,0%
MORE THAN A TRADITIONAL LESSON		0,0%
Total teachers	3	

Table 70: The students are bored during the lesson

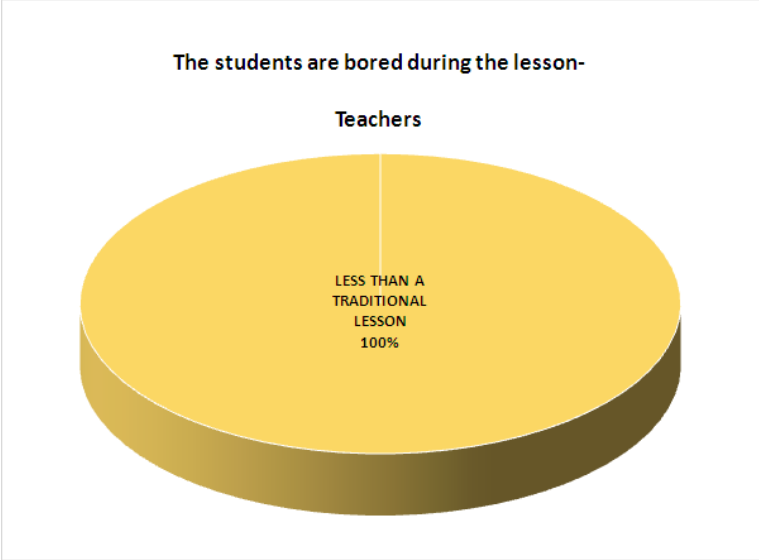


Figure 57: The students are bored during the lesson

SOURCE: Questionnaire

ANALYSIS

To the Statement “The students are bored during the lesson”, the 100% of the teachers think that there is less than a traditional lesson; which means that the teachers feel that there is less than a traditional lesson to work with or without the use of the IWB during class activity.

Teacher Attitudes toward Training in Instruction Using the IWB

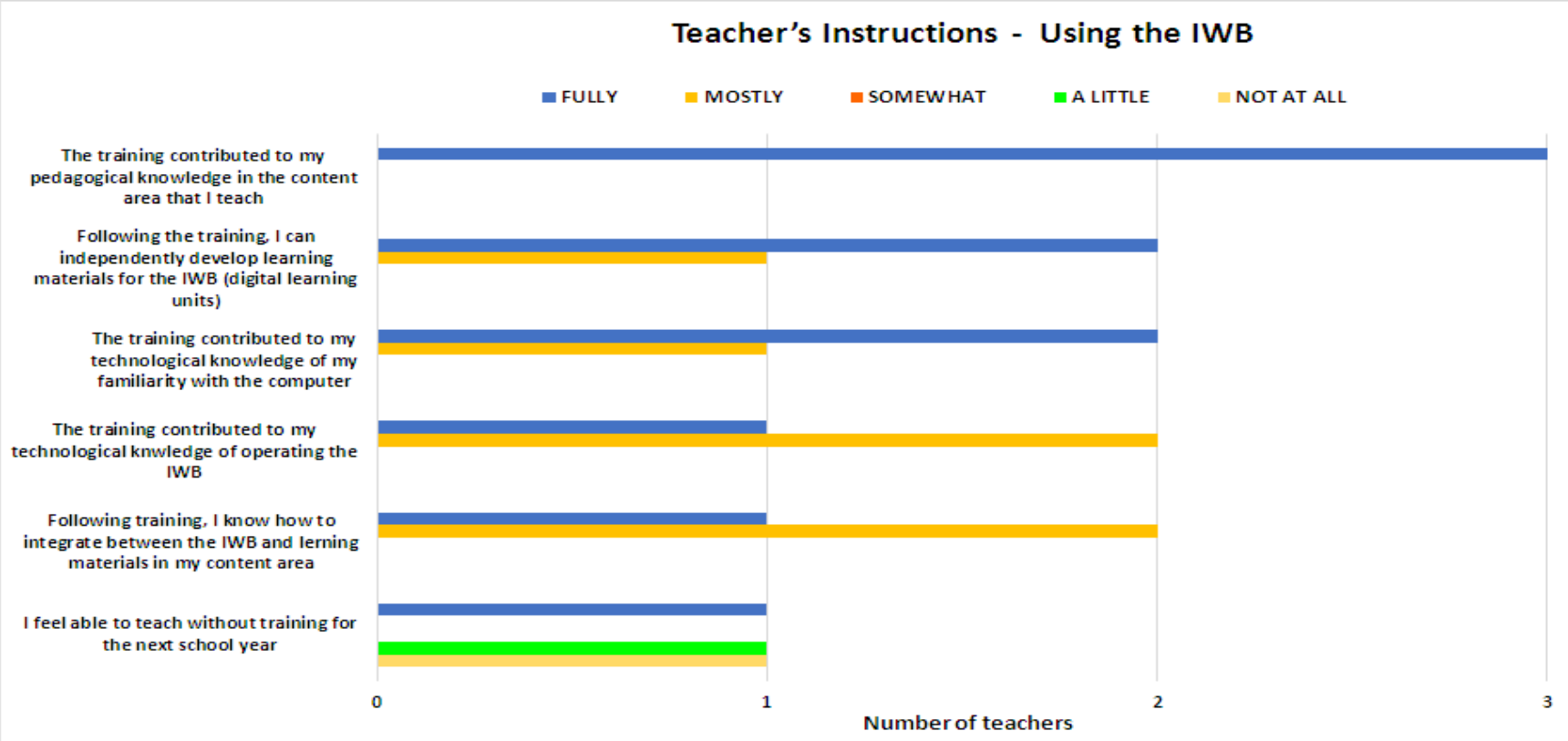
STATEMENT	N	Mean Excel	Std. Deviation Excel
I feel able to teach without training for the next school year	3	**2,67**	2,08
Following training, I know how to integrate between the IWB and learning materials in my content area	3	**4,33**	0,58
The training contributed to my technological knowledge of operating the IWB	3	**4,33**	0,58
The training contributed to my technological knowledge of my familiarity with the computer	3	**4,67**	0,58
Following the training, I can independently develop learning materials for the IWB (digital learning units)	3	**4,67**	0,58
The training contributed to my pedagogical knowledge in the content area that I teach	3	**5,00**	-

Scale: 1-not at all, 2-a little, 3-somewhat, 4-mostly, 5-fully

Table 71: Statistics Teachers´s Attitudes training IWB. 3rd Questionnaire.

It appears that teachers request following training to be able to integrate the IWB and learning material to class activity, together with additional technological training, despite the fact that their overall feeling is that they can instruct without training.

Third questionnaire Teachers´s Attitudes toward training the Instruction using the IWB.



Graphic 6: Teachers´s Attitudes to training Instruction using IWB. Third Questionnaire

In the graphic we can see the whole perspective of the answers received by the three teachers to the third questionnaire. It was measured the “Teacher´s Instructions using the IWB”. The teachers feel that they can fulfill their needs of teaching in a fully and mostly way, using the IWB.

It is important to analyze the answers received by the teachers in the third questionnaire: Teacher's instructions using the IWB.

Statement:	Following training, I know how to integrate between the IWB and lerning materials in my content area	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
NOT AT ALL		0,0%
A LITTLE		0,0%
SOMEWHAT		0,0%
MOSTLY	2	66,7%
FULLY	1	33,3%
Total teachers	3	

Table 72: How to integrate IWB in content areas

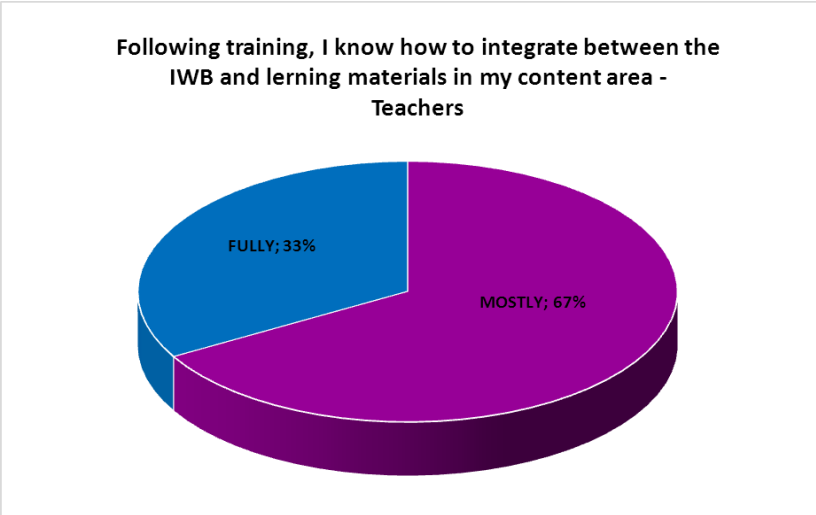


Figure 58: How to integrate IWB in content areas

SOURCE: Questionnaire

ANALYSIS

To the Statement "Following training, I know how to integrate between the IWB and learning materials in my content area", the 67% mostly agree with it and the 33% fully agree with the Statement; which means that the teachers feel that they can combine and integrate the learning material with the IWB.

Statement:	The training contributed to my technological knowledge of operating the IWB

INDICATORS	FREQUENCY	PERCENTAGE
NOT AT ALL		0,0%
A LITTLE		0,0%
SOMEWHAT		0,0%
MOSTLY	2	66,7%
FULLY	1	33,3%
Total teachers	3	

Table 73: Training contributed my knowledge operating the IWB

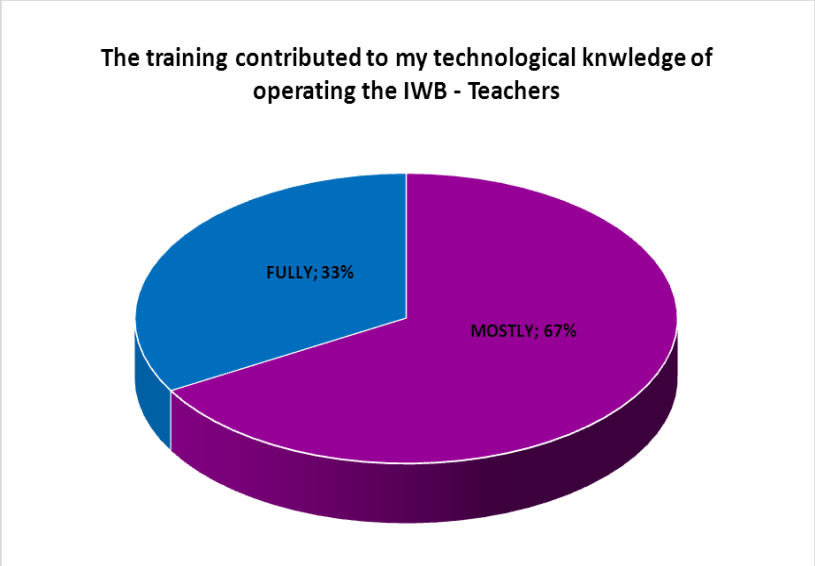


Figure 59: Training contributed my knowledge operating the IWB

SOURCE: Questionnaire

ANALYSIS

To the Statement "The training contributed my technological knowledge of operating the IWB", the 67% mostly agree with this and the 33% fully agree with it; which means that the teachers think that good training can contribute to operate the IWB adequately.

Statement:	The training contributed to my technological knowledge of my familiarity with the computer	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
NOT AT ALL		0,0%
A LITTLE		0,0%
SOMEWHAT		0,0%
MOSTLY	1	33,3%
FULLY	2	66,7%
Total teachers	3	

Table 74: Training contributed my familiarity with the computer

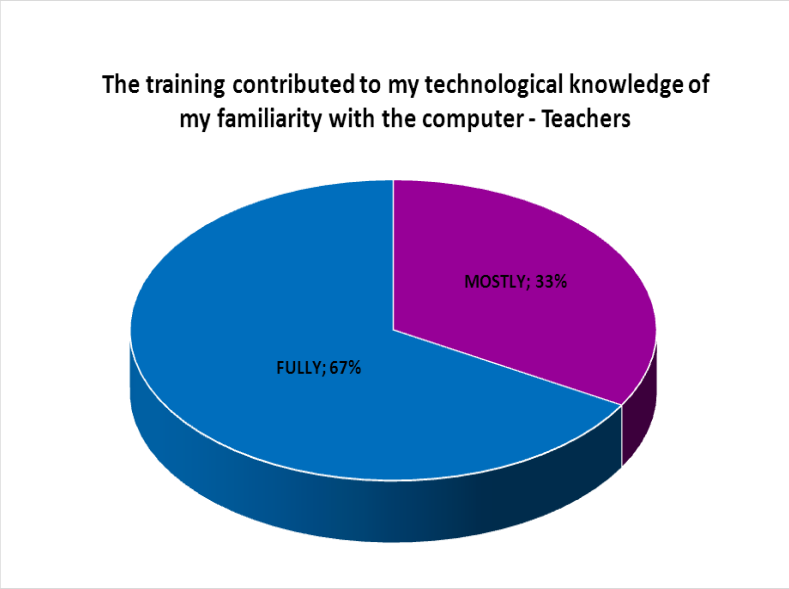


Figure 60: Training contributed my familiarity with the computer

SOURCE: Questionnaire

ANALYSIS

To the Statement "The training contributed to my technological knowledge of my familiarity with the computer", the 67% fully agree and the 33% mostly agree with this; which means that definitely a good training contributes in a great deal with the familiarity with the computer and the use of the IWB.

Statement:	Following the training, I can independently develop learning materials for the IWB (digital learning units)	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
NOT AT ALL		0,0%
A LITTLE		0,0%
SOMEWHAT		0,0%
MOSTLY	1	33,3%
FULLY	2	66,7%
Total teachers	3	

Table 75: Following training I develop digital material

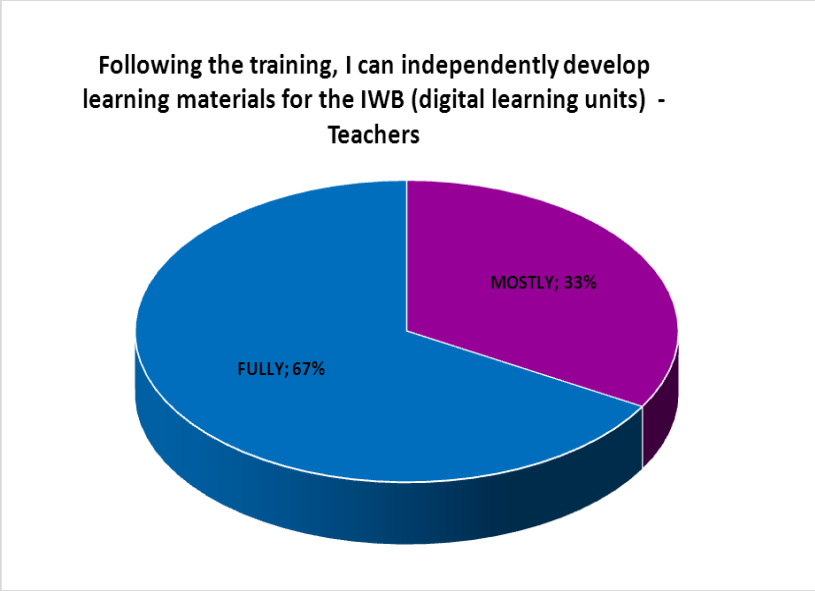


Figure 61: Following training I develop digital material

SOURCE: Questionnaire

ANALYSIS

To the Statement "Following the training, I can independently develop learning materials for the IWB (digital learning units)", the 67% of the teachers agree and the 33% mostly agree with this; which means that teachers starts to independently develop learning material for the IWB and their teaching.

Statement:	The training contributed to my pedagogical knowledge in the content area that I teach	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
NOT AT ALL		0,0%
A LITTLE		0,0%
SOMEWHAT		0,0%
MOSTLY		0,0%
FULLY	3	100,0%
Total teachers	3	

Table 76: Training contributed to pedagogical knowledge in content area

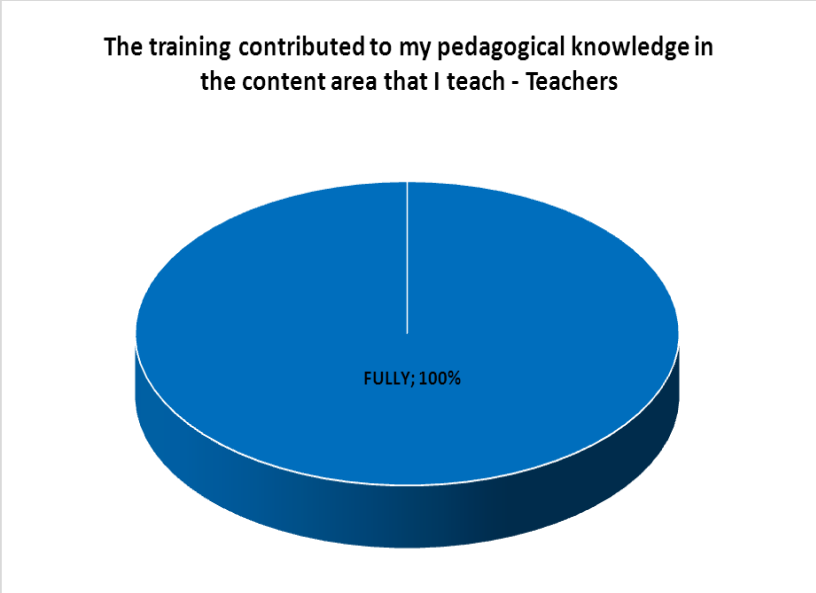


Figure 62: Training contributed to pedagogical knowledge in content area

SOURCE: Questionnaire

ANALYSIS

To the Statement "The training contributed to my pedagogical knowledge in the content area that I teach", the 100% of the teachers agree that good training contribute to their pedagogical knowledge and they can use adequately the IWB.

Statement:	I feel able to teach without training for the next school year	
INDICATORS	**FREQUENCY**	**PERCENTAGE**
NOT AT ALL	1	33,3%
A LITTLE	1	33,3%
SOMEWHAT		0,0%
MOSTLY		0,0%
FULLY	1	33,3%
Total teachers	3	

Table 77: I feel able to teach without training

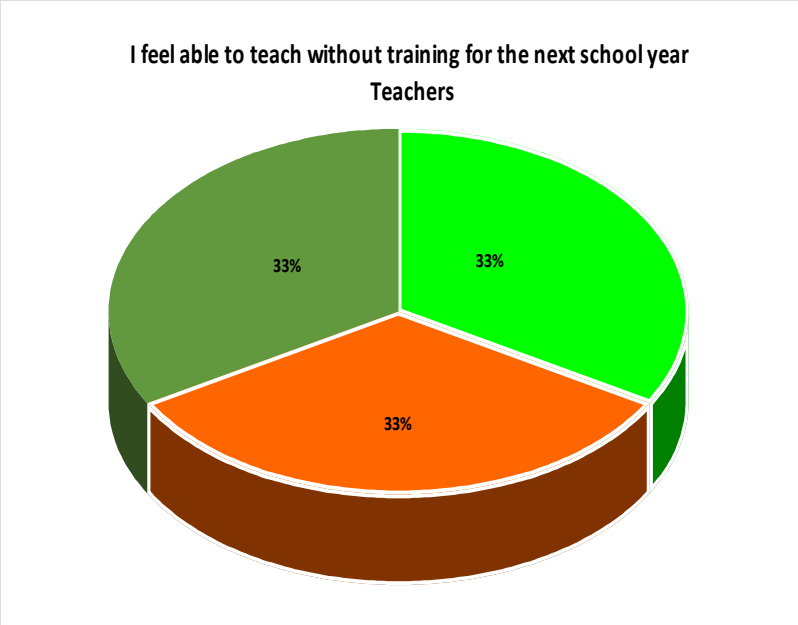


Figure 63: I feel able to teach without training

SOURCE: Questionnaire

ANALYSIS

To the Statement “I feel able to teach without training for the next school year, the teachers feels that they can do it in a little, mostly and somewhat in equal parts 33%; which means that they feel able to teach with or without training.

4.3 TESTING THE HYPOTHESIS

Students Data

STATEMENT	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	NO ANSWER	Total School girls who answer	Total School girls
Enjoy learning	2	5	5	17	42	3	71	74
Studies are interesting	4	3	16	23	27	1	73	74
Can understand the learning material	5	4	11	20	33	1	73	74
I want to participate in the lesson	4	7	6	8	48	1	73	74
Studies are easier	3	5	12	27	26	1	73	74
Students are more focused	8	11	13	16	26	0	74	74
The teacher involves students in class discussions	8	4	10	10	42	0	74	74
I like to come to school	19	8	12	17	17	1	73	74
Students work in groups	12	12	11	16	21	2	72	74
The topics we learn are connected to my life and are relevant to me	14	14	20	7	18	1	73	74
The IWB help me with the lessons	13	2	9	13	35	2	72	74
# Answers	**92**	**75**	**125**	**174**	**335**	**13**	**801**	**814**

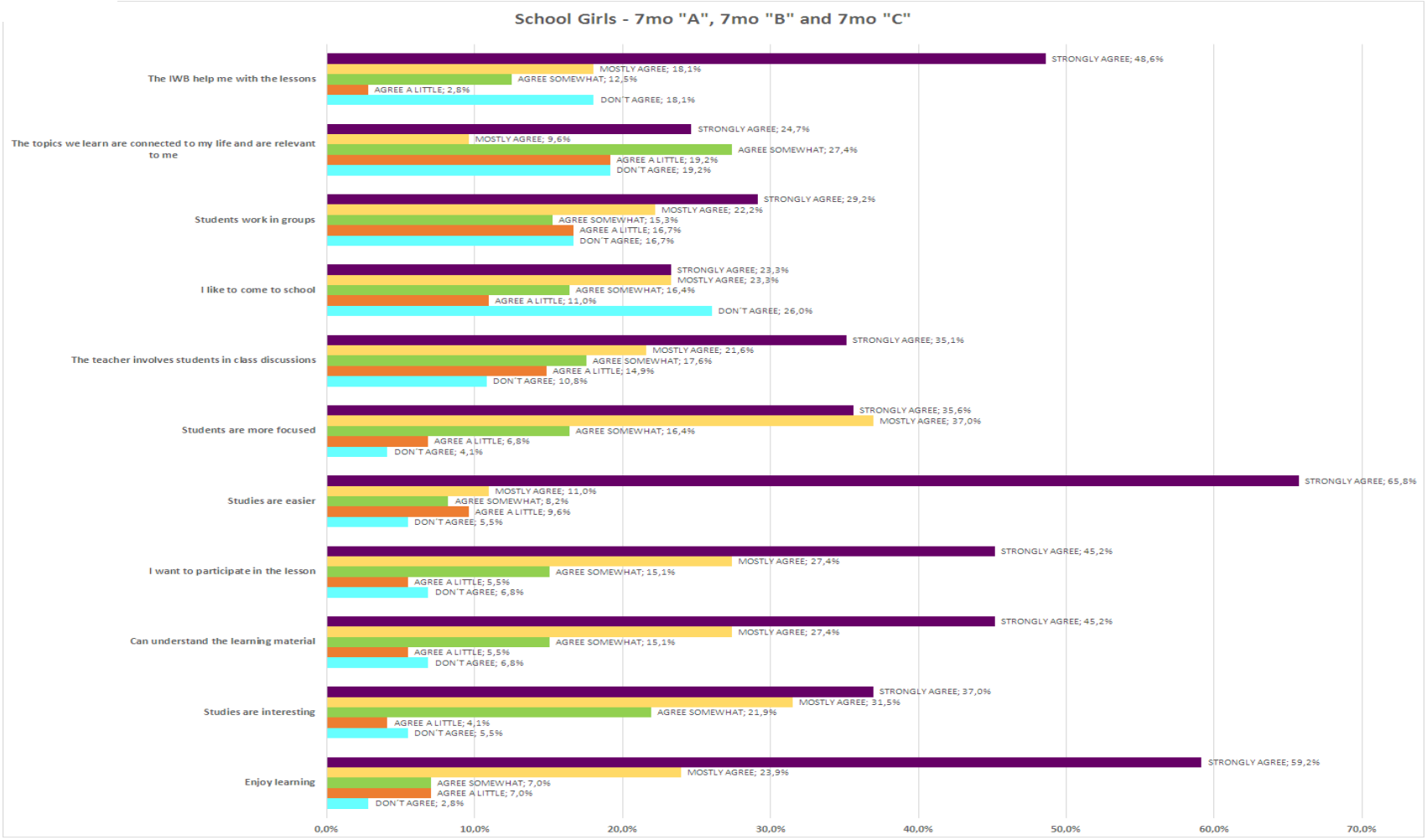
Table 78: Student´s Attitudes learning via IWB - s 7 A,B &

Student's attitudes toward learning via IWB – seventh grade "A", "B" and "C"

SCHOOL GIRLS (INC ONLY STUDENTS WHO ANSWER - REAL)	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	
Enjoy learning	2,8%	7,0%	7,0%	23,9%	59,2%	100,0%
Studies are interesting	5,5%	4,1%	21,9%	31,5%	37,0%	100,0%
Can understand the learning material	6,8%	5,5%	15,1%	27,4%	45,2%	100,0%
I want to participate in the lesson	6,8%	5,5%	15,1%	27,4%	45,2%	100,0%
Studies are easier	5,5%	9,6%	8,2%	11,0%	65,8%	100,0%
Students are more focused	4,1%	6,8%	16,4%	37,0%	35,6%	100,0%
The teacher involves students in class discussions	10,8%	14,9%	17,6%	21,6%	35,1%	100,0%
I like to come to school	26,0%	11,0%	16,4%	23,3%	23,3%	100,0%
Students work in groups	16,7%	16,7%	15,3%	22,2%	29,2%	100,0%
The topics we learn are connected to my life and are relevant to me	19,2%	19,2%	27,4%	9,6%	24,7%	100,0%
The IWB help me with the lessons	18,1%	2,8%	12,5%	18,1%	48,6%	100,0%

Table 79: StatisticsStudent´s Attitudes to learning IWB 7 A,B & C.

In this Table all the students of the seventh grade A, B and C but only the ones that answer the questionnaire, where valued their answers and the highest percentage were in mostly agree and strongly agree; which means that the student´s attitudes toward learning via IWB is accepted by them.



Graphic 7: Students Attitudes – 7 “A”, “B” and “C”

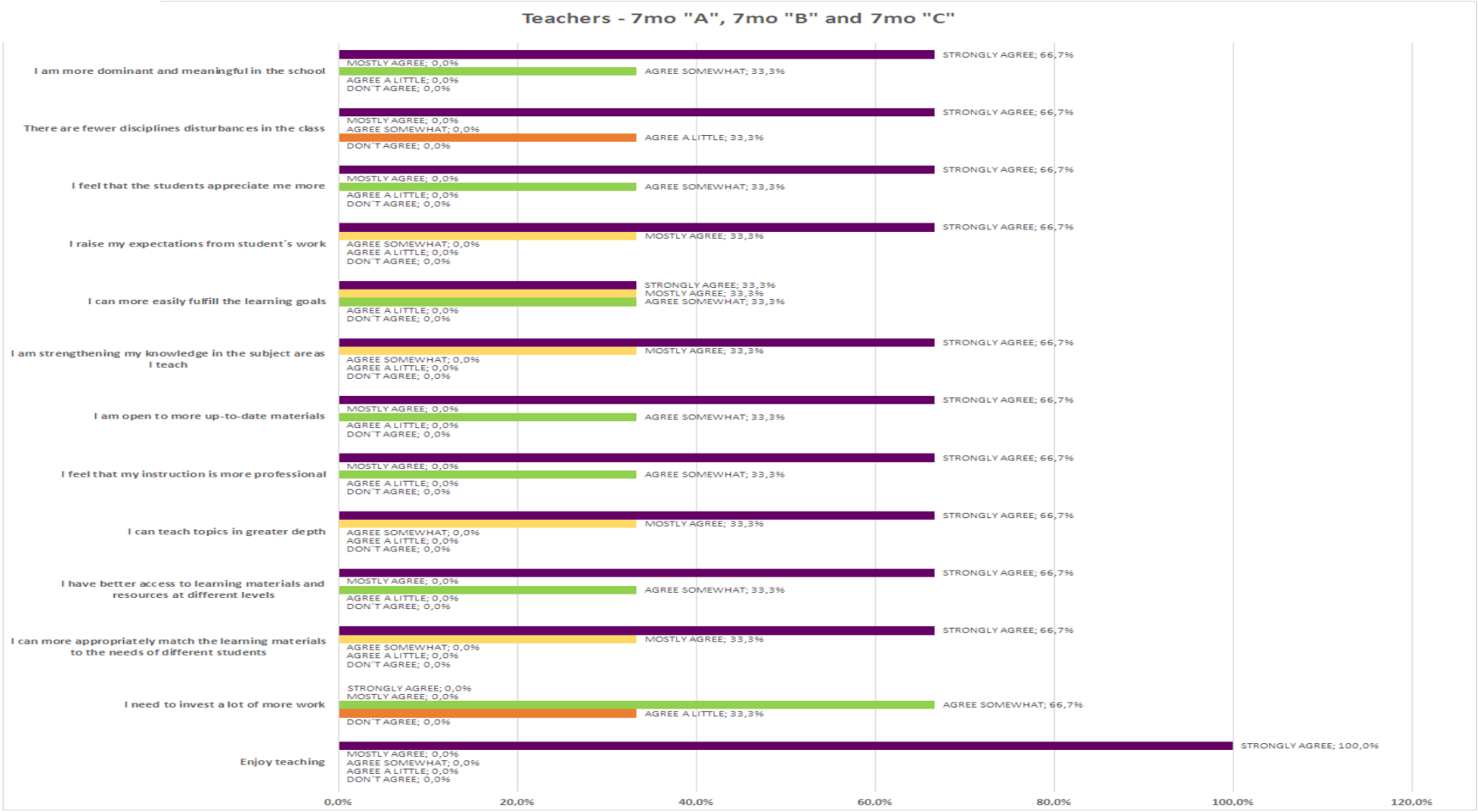
In this graph the higher percentage is located in mostly agree and strongly agree; which means that all the students of the grades

Teacher´s attitudes toward instruction using the IWB

TEACHERS	DON´T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE	
Enjoy teaching	0,0%	0,0%	0,0%	0,0%	100,0%	100,0%
I need to invest a lot of more work	0,0%	33,3%	66,7%	0,0%	0,0%	100,0%
I can more appropriately match the learning materials to the needs of different students	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I have better access to learning materials and resources at different levels	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
I can teach topics in greater depth	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I feel that my instruction is more professional	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
I am open to more up-to-date materials	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
I am strengthening my knowledge in the subject areas I teach	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I can more easily fulfill the learning goals	0,0%	0,0%	33,3%	33,3%	33,3%	100,0%
I raise my expectations from student´s work	0,0%	0,0%	0,0%	33,3%	66,7%	100,0%
I feel that the students appreciate me more	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%
There are fewer disciplines disturbances in the class	0,0%	33,3%	0,0%	0,0%	66,7%	100,0%
I am more dominant and meaningful in the school	0,0%	0,0%	33,3%	0,0%	66,7%	100,0%

Table 80: Statistics First Questionnaire – Teacher´s Attitudes instruction IWB

In this Table the teacher´s attitudes strongly agree, toward instruction using the IWB. They agreed to enjoy teaching while using the board during class activity.



Graphic 8: Teachers´Attitudes to Instruction IWB. 1st. Questionnaire

In this graphic the bars shows that all the teachers strongly agree the use of the IWB while instructing.

4.3.1 Testing the Hypothesis using the Chi Square Distribution

Df	0.995	0.99	0.975	0.95	0.90	0.10	0.05	0.025	0.01	0.005
1	---	---	0.001	0.004	0.016	2.706	3.841	5.024	6.635	7.879
2	0.010	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	14.860
5	0.412	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086	16.750
6	0.676	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	18.548
7	0.989	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	20.278
8	1.344	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090	21.955
9	1.735	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	23.589
10	2.156	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	28.300
13	3.565	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	29.819
14	4.075	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	35.718
18	6.265	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	38.582
20	7.434	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	39.997
21	8.034	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	41.401
22	8.643	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	42.796
23	9.260	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	45.559
25	10.520	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	46.928
26	11.160	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	48.290
27	11.808	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154	79.490
60	35.534	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	91.952
70	43.275	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	104.215
80	51.172	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	140.169

Table 81: Chi Square Distribution

Compute Results Students of 7 A

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	0	0	0	0	26	*26*
Studies are interesting	0	0	2	4	21	*27*
Can understand leaning material	1	0	1	8	17	*27*
I want to participate in the lesson	0	1	1	1	24	*27*
Studies are easier	1	0	1	11	14	*27*
Students are more foucused	4	2	2	2	17	*27*
Teacher involves students in class discussions	1	0	3	2	21	*27*
I like to come to school	3	3	8	4	9	*27*
Students work in groups	2	2	1	12	10	*27*
Topics learned are connected to my life and are relevant to me	1	4	8	3	11	*27*
IWB help me with the lessons	1	0	1	4	20	*26*
	14	*12*	*28*	*51*	*190*	*295*

DF	*Chi Square*	*P*
40	115.7946	0.0000

Table 82: Chi Square results - 7 “A”

Compute Results Students of 7 A
***Show*: Expected counts**

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	0 1.2339	0 1.0576	0 2.4678	0 4.4949	26 16.7458	*26*
Studies are interesting	0 1.2814	0 1.0983	2 2.5627	4 4.6678	21 17.3898	*27*
Can understand leaning material	1 1.2814	0 1.0983	1 2.5627	8 4.6678	17 17.3898	*27*
I want to participate in the lesson	0 1.2814	1 1.0983	1 2.5627	1 4.6678	24 17.3898	*27*
Studies are easier	1 1.2814	0 1.0983	1 2.5627	11 4.6678	14 17.3898	*27*
Students are more foucused	4 1.2814	2 1.0983	2 2.5627	2 4.6678	17 17.3898	*27*
Teacher involves students in class discussions	1 1.2814	0 1.0983	3 2.5627	2 4.6678	21 17.3898	*27*
I like to come to school	3 1.2814	3 1.0983	8 2.5627	4 4.6678	9 17.3898	*27*
Students work in groups	2 1.2814	2 1.0983	1 2.5627	12 4.6678	10 17.3898	*27*
Topics learned are connected to my life and are relevant to me	1 1.2814	4 1.0983	8 2.5627	3 4.6678	11 17.3898	*27*
IWB help me with the lessons	1 1.2339	0 1.0576	1 2.4678	4 4.4949	20 16.7458	*26*
	14	*12*	*28*	*51*	*190*	*295*

DF	*Chi Square*	*P*
40	115.7946	0.0000

Table 83: Chi Square – Expected counts - 7 “A”

Compute Results Students of 7 A

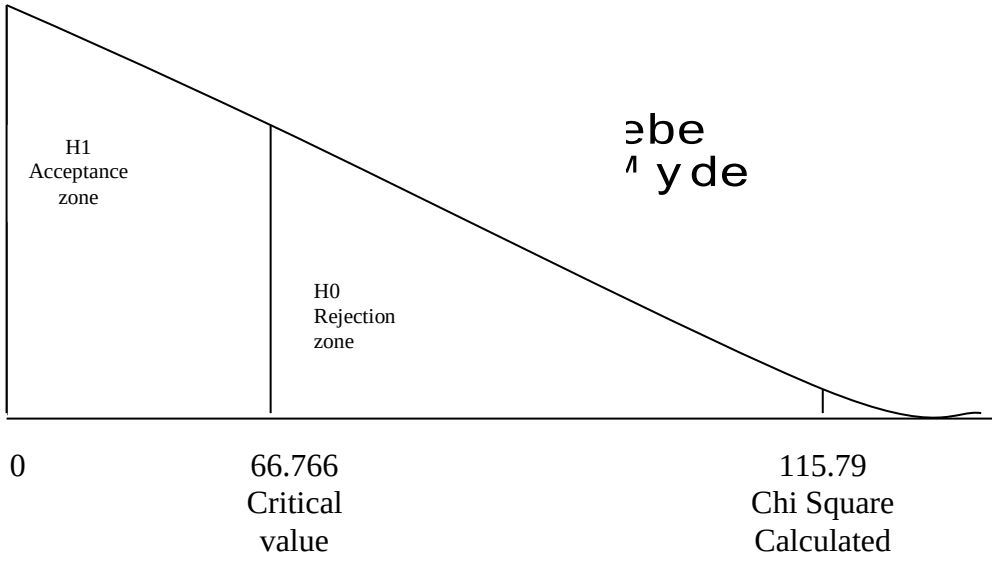
***Show*: Chi-square differences**

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	0 1.2339	0 1.0576	0 2.4678	0 4.4949	26 5.1142	*26*
Studies are interesting	0 1.2814	0 1.0983	2 0.1236	4 0.0955	21 0.7495	*27*
Can understand leaning material	1 0.0618	0 1.0983	1 0.9529	8 2.3788	17 0.0087	*27*
I want to participate in the lesson	0 1.2814	1 0.0088	1 0.9529	1 2.8820	24 2.5126	*27*
Studies are easier	1 0.0618	0 1.0983	1 0.9529	11 8.5901	14 0.6608	*27*
Students are more foucused	4 5.7681	2 0.7403	2 0.1236	2 1.5247	17 0.0087	*27*
Teacher involves students in class discussions	1 0.0618	0 1.0983	3 0.0746	2 1.5247	21 0.7495	*27*
I like to come to school	3 2.3052	3 3.2927	8 11.5363	4 0.0955	9 4.0477	*27*
Students work in groups	2 0.4030	2 0.7403	1 0.9529	12 11.5175	10 3.1403	*27*
Topics learned are connected to my life and are relevant to me	1 0.0618	4 7.6662	8 11.5363	3 0.5959	11 2.3479	*27*
IWB help me with the lessons	1 0.0443	0 1.0576	1 0.8730	4 0.0545	20 0.6324	*26*
	14	*12*	*28*	*51*	*190*	*295*

DF	*Chi Square*	*P*
40	115.7946	0.0000

Table 84: Chi-Square – Differences 7 “A”

Chi Square Student of 7 A



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is rejected: The H1 or Working Hipótesis: There is a positive influence of the IWB e-learning tool, is accepted.

Graphic 9: Chi Square - 7 "A"

Compute Results Students of 7 B

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	1	2	2	6	8	*19*
Studies are interesting	4	1	5	7	3	*20*
Can understand leaning material	1	1	5	6	7	*20*
I want to participate in the lesson	3	4	4	2	7	*20*
Studies are easier	1	2	4	6	7	*20*
Students are more foucused	2	3	6	5	5	*21*
Teacher involves students in class discussions	5	1	4	2	9	*21*
I like to come to school	6	3	0	5	6	*20*
Students work in groups	1	5	2	1	10	*19*
Topics learned are connected to my life and are relevant to me	0	4	6	3	7	*20*
IWB help me with the lessons	2	0	1	4	13	*20*
	26	*26*	*39*	*47*	*82*	*220*

DF	*Chi Square*	*P*
40	55.8954	0.0487

Table 85: Chi-Square results – 7 “B”

Compute Results Students of 7 B

***Show*: Expected counts**

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	1 2.2455	2 2.2455	2 3.3682	6 4.0591	8 7.0818	*19*
Studies are interesting	4 2.3636	1 2.3636	5 3.5455	7 4.2727	3 7.4545	*20*
Can understand leaning material	1 2.3636	1 2.3636	5 3.5455	6 4.2727	7 7.4545	*20*
I want to participate in the lesson	3 2.3636	4 2.3636	4 3.5455	2 4.2727	7 7.4545	*20*
Studies are easier	1 2.3636	2 2.3636	4 3.5455	6 4.2727	7 7.4545	*20*
Students are more foucused	2 2.4818	3 2.4818	6 3.7227	5 4.4864	5 7.8273	*21*
Teacher involves students in class discussions	5 2.4818	1 2.4818	4 3.7227	2 4.4864	9 7.8273	*21*
I like to come to school	6 2.3636	3 2.3636	0 3.5455	5 4.2727	6 7.4545	*20*
Students work in groups	1 2.2455	5 2.2455	2 3.3682	1 4.0591	10 7.0818	*19*
Topics learned are connected to my life and are relevant to me	0 2.3636	4 2.3636	6 3.5455	3 4.2727	7 7.4545	*20*
IWB help me with the lessons	2 2.3636	0 2.3636	1 3.5455	4 4.2727	13 7.4545	*20*
	26	*26*	*39*	*47*	*82*	*220*

DF	*Chi Square*	*P*
40	55.8954	0.0487

Table 86: Chi-Square – Expected counts – 7 “B”

Compute Results Students of 7 B

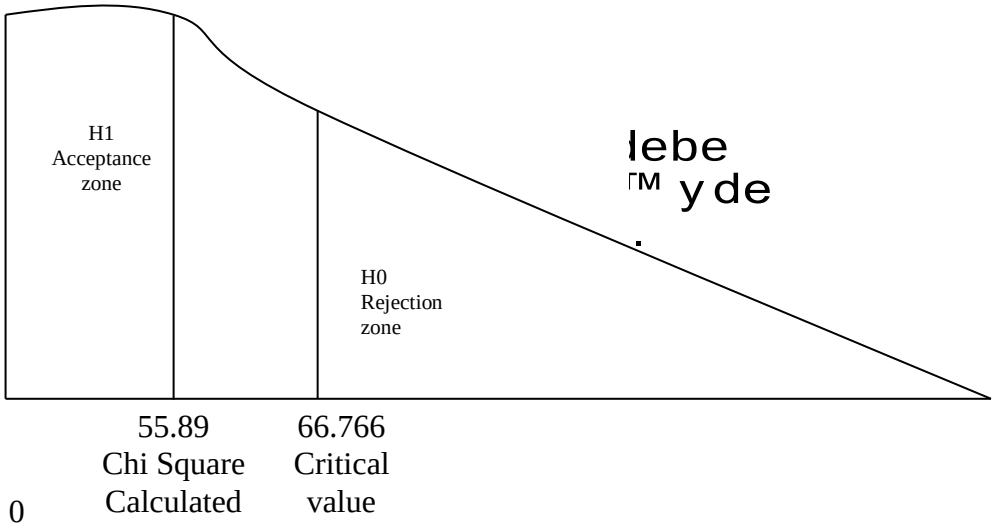
***Show*: Chi-square differences**

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	1 0.6908	2 0.0268	2 0.5558	6 0.9281	8 0.1190	*19*
Studies are interesting	4 1.1329	1 0.7867	5 0.5967	7 1.7408	3 2.6619	*20*
Can understand leaning material	1 0.7867	1 0.7867	5 0.5967	6 0.6983	7 0.0277	*20*
I want to participate in the lesson	3 0.1713	4 1.1329	4 0.0583	2 1.2089	7 0.0277	*20*
Studies are easier	1 0.7867	2 0.0559	4 0.0583	6 0.6983	7 0.0277	*20*
Students are more foucused	2 0.0935	3 0.1082	6 1.3931	5 0.0588	5 1.0212	*21*
Teacher involves students in class discussions	5 2.5551	1 0.8847	4 0.0207	2 1.3780	9 0.1757	*21*
I like to come to school	6 5.5944	3 0.1713	0 3.5455	5 0.1238	6 0.2838	*20*
Students work in groups	1 0.6908	5 3.3791	2 0.5558	1 2.3055	10 1.2025	*19*
Topics learned are connected to my life and are relevant to me	0 2.3636	4 1.1329	6 1.6993	3 0.3791	7 0.0277	*20*
IWB help me with the lessons	2 0.0559	0 2.3636	1 1.8275	4 0.0174	13 4.1253	*20*
	26	*26*	*39*	*47*	*82*	*220*

DF	*Chi Square*	*P*
40	55.8954	0.0487

Table 87: Chi-Square differences - 7 “B”

STUDENTS 7B



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is rejected: The H1 or Working Hipótesis: There is a positive influence of the IWB e-learning tool, is accepted.

Graphic 10: Chi-Square – 7 "B"

Compute Results Students of 7 C

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	1	3	3	11	8	*26*
Studies are interesting	0	2	9	12	3	*26*
Can understand leaning material	3	3	5	6	9	*26*
I want to participate in the lesson	1	2	1	5	17	*26*
Studies are easier	1	3	7	10	5	*26*
Students are more foucused	2	6	5	9	4	*26*
Teacher involves students in class discussions	2	3	3	6	12	*26*
I like to come to school	10	2	4	8	2	*26*
Students work in groups	9	5	8	3	1	*26*
Topics we learn are connected to my life and are relevant to me	13	6	6	1	0	*26*
IWB help me with the lessons	10	2	7	5	2	*26*
	52	*37*	*58*	*76*	*63*	*286*

DF	*Chi Square*	*P*
40	130.8981	0.0000

Table 88: Chi-Square results – 7 “C”

Compute Results Students of 7 C

Show: Expected counts

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	1 4.7273	3 3.3636	3 5.2727	11 6.9091	8 5.7273	*26*
Studies are interesting	0 4.7273	2 3.3636	9 5.2727	12 6.9091	3 5.7273	*26*
Can understand leaning material	3 4.7273	3 3.3636	5 5.2727	6 6.9091	9 5.7273	*26*
I want to participate in the lesson	1 4.7273	2 3.3636	1 5.2727	5 6.9091	17 5.7273	*26*
Studies are easier	1 4.7273	3 3.3636	7 5.2727	10 6.9091	5 5.7273	*26*
Students are more foucused	2 4.7273	6 3.3636	5 5.2727	9 6.9091	4 5.7273	*26*
Teacher involves students in class discussions	2 4.7273	3 3.3636	3 5.2727	6 6.9091	12 5.7273	*26*
I like to come to school	10 4.7273	2 3.3636	4 5.2727	8 6.9091	2 5.7273	*26*
Students work in groups	9 4.7273	5 3.3636	8 5.2727	3 6.9091	1 5.7273	*26*
Topics we learn are connected to my life and are relevant to me	13 4.7273	6 3.3636	6 5.2727	1 6.9091	0 5.7273	*26*
IWB help me with the lessons	10 4.7273	2 3.3636	7 5.2727	5 6.9091	2 5.7273	*26*
	52	*37*	*58*	*76*	*63*	*286*

DF	*Chi Square*	*P*
40	130.8981	0.0000

Table 89: Chi-Square Expected counts – 7 “C”

Compute Results Students of 7 C

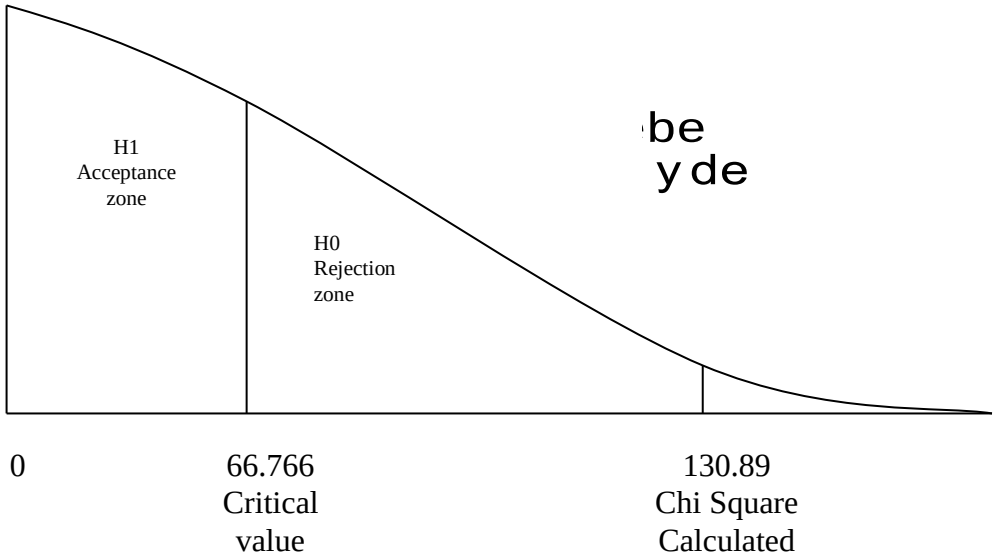
Show: Chi-square differences

STATEMENT	*DONT AGREE*	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy learning	1 2.9388	3 0.0393	3 0.9796	11 2.4222	8 0.9019	*26*
Studies are interesting	0 4.7273	2 0.5528	9 2.6348	12 3.7512	3 1.2987	*26*
Can understand leaning material	3 0.6311	3 0.0393	5 0.0141	6 0.1196	9 1.8701	*26*
I want to participate in the lesson	1 2.9388	2 0.5528	1 3.4624	5 0.5275	17 22.1876	*26*
Studies are easier	1 2.9388	3 0.0393	7 0.5658	10 1.3828	5 0.0924	*26*
Students are more foucused	2 1.5734	6 2.0663	5 0.0141	9 0.6328	4 0.5209	*26*
Teacher involves students in class discussions	2 1.5734	3 0.0393	3 0.9796	6 0.1196	12 6.8701	*26*
I like to come to school	10 5.8811	2 0.5528	4 0.3072	8 0.1722	2 2.4257	*26*
Students work in groups	9 3.8619	5 0.7961	8 1.4107	3 2.2117	1 3.9019	*26*
Topics we learn are connected to my life and are relevant to me	13 14.4773	6 2.0663	6 0.1003	1 5.0538	0 5.7273	*26*
IWB help me with the lessons	10 5.8811	2 0.5528	7 0.5658	5 0.5275	2 2.4257	*26*
	52	*37*	*58*	*76*	*63*	*286*

DF	*Chi Square*	*P*
40	130.8981	0.0000

Table 90: Chi-Square differences – 7 “C”

Chi Square Graph 7 C



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is rejected: The H1 or Working Hipótesis: There is a positive influence of the IWB e-learning tool, is accepted.

Graphic 11: Chi-Square – 7 "C"

First Questionnaire for the teachers:

STATEMENT	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy teaching	0	0	0	3	*3*
I need to invest a lot of more work	1	2	0	0	*3*
I can more appropriately match the learning materials to the needs of different students	0	0	1	2	*3*
I have better access to learning materials and resources at different levels	0	1	0	2	*3*
I can teach topics in greater depth	0	0	1	2	*3*
I feel that my instruction is more professional	0	1	0	2	*3*
I am open to more up-to-date materials	0	1	0	2	*3*
I am strengthening my knowledge in the subject areas I teach	0	0	1	2	*3*
I can more easily fulfill the learning goals	0	1	1	1	*3*
I raise my expectations from students work	0	0	1	2	*3*
I feel that the students appreciate me more	0	1	0	2	*3*
There are fewer disciplines disturbances in the class	1	0	0	2	*3*
I am more dominant and meaningful in the school	0	1	0	2	*3*
	2	*8*	*5*	*24*	*39*

DF	*Chi Square*	*P*
36	30.3333	0.7346

Table 91: Chi-Square results - First Questionnaire for teachers

First Questionnaire for the teachers
***Show*: Expected counts**

STATEMENT	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy teaching	0 0.1538	0 0.6154	0 0.3846	3 1.8462	*3*
I need to invest a lot of more work	1 0.1538	2 0.6154	0 0.3846	0 1.8462	*3*
I can more appropriately match the learning materials to the needs of different students	0 0.1538	0 0.6154	1 0.3846	2 1.8462	*3*
I have better access to learning materials and resources at different levels	0 0.1538	1 0.6154	0 0.3846	2 1.8462	*3*
I can teach topics in greater depth	0 0.1538	0 0.6154	1 0.3846	2 1.8462	*3*
I feel that my instruction is more professional	0 0.1538	1 0.6154	0 0.3846	2 1.8462	*3*
I am open to more up-to-date materials	0 0.1538	1 0.6154	0 0.3846	2 1.8462	*3*
I am strengthening my knowledge in the subject areas I teach	0 0.1538	0 0.6154	1 0.3846	2 1.8462	*3*
I can more easily fulfill the learning goals	0 0.1538	1 0.6154	1 0.3846	1 1.8462	*3*
I raise my expectations from students work	0 0.1538	0 0.6154	1 0.3846	2 1.8462	*3*
I feel that the students appreciate me more	0 0.1538	1 0.6154	0 0.3846	2 1.8462	*3*
There are fewer disciplines disturbances in the class	1 0.1538	0 0.6154	0 0.3846	2 1.8462	*3*
I am more dominant and meaningful in the school	0 0.1538	1 0.6154	0 0.3846	2 1.8462	*3*
	2	*8*	*5*	*24*	*39*

DF	*Chi Square*	*P*
36	30.3333	0.7346

Table 92: Chi-Square Expected counts – 1st.Questionnaire teachers

First Questionnaire for the teachers

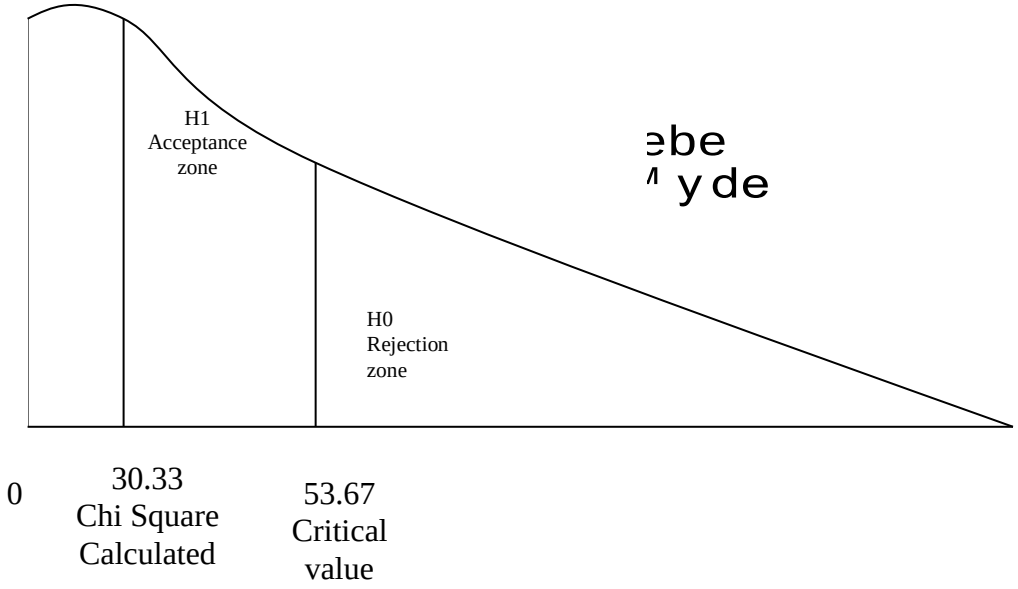
Show: Chi-square differences

STATEMENT	*AGREE A LITTLE*	*AGREE SOMEWHAT*	*MOSTLY AGREE*	*STRONGLY AGREE*	
Enjoy teaching	0 0.1538	0 0.6154	0 0.3846	3 0.7212	*3*
I need to invest a lot of more work	1 4.6538	2 3.1154	0 0.3846	0 1.8462	*3*
I can more appropriately match the learning materials to the needs of different students	0 0.1538	0 0.6154	1 0.9846	2 0.0128	*3*
I have better access to learning materials and resources at different levels	0 0.1538	1 0.2404	0 0.3846	2 0.0128	*3*
I can teach topics in greater depth	0 0.1538	0 0.6154	1 0.9846	2 0.0128	*3*
I feel that my instruction is more professional	0 0.1538	1 0.2404	0 0.3846	2 0.0128	*3*
I am open to more up-to-date materials	0 0.1538	1 0.2404	0 0.3846	2 0.0128	*3*
I am strengthening my knowledge in the subject areas I teach	0 0.1538	0 0.6154	1 0.9846	2 0.0128	*3*
I can more easily fulfill the learning goals	0 0.1538	1 0.2404	1 0.9846	1 0.3878	*3*
I raise my expectations from students work	0 0.1538	0 0.6154	1 0.9846	2 0.0128	*3*
I feel that the students appreciate me more	0 0.1538	1 0.2404	0 0.3846	2 0.0128	*3*
There are fewer disciplines disturbances in the class	1 4.6538	0 0.6154	0 0.3846	2 0.0128	*3*
I am more dominant and meaningful in the school	0 0.1538	1 0.2404	0 0.3846	2 0.0128	*3*
	2	*8*	*5*	*24*	*39*

DF	*Chi Square*	*P*
36	30.3333	0.7346

Table 93: Chi-Square differences – 1st Questionnaire teachers

Chi Square Graph for First Questionnaire to teachers



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is accepted: The H1 or Working Hipótesis: There is a positive influence of the IWB e-learning tool, is rejected.

Graphic 12: Chi-Square 1st. Questionnaire teachers

Second Questionnaire for the teachers

Compute Results

STATEMENT	*LESS THAN A TRADITIONAL LESSON*	*NO DIFFERENCE FROM A TRADITIONAL LESSON*	*MORE THAN A TRADITIONAL LESSON*	
Studen interest level in the lesson	0	0	3	*3*
I provide tools for the students that help them learn	0	0	3	*3*
Student´s level of participation in the lesson	0	1	2	*3*
During the lesson students present presentations that they have prepared	0	2	1	*3*
Level of student´s concentration	0	1	2	*3*
I can guide the student´s to reach answers to questions and assignments on their own	0	1	2	*3*
The students like the subject being learned	0	0	3	*3*
I use examples that the students bring during the lesson	0	0	3	*3*
I conduct discussions with the students	0	0	3	*3*
How much effort the students invest in learning in the class	0	1	2	*3*
The investment students make in doing their homework	0	2	1	*3*
The students work in groups	0	2	1	*3*
The students are bored during the lesson	3	0	0	*3*
	3	*10*	*26*	*39*

DF	*Chi Square*	*P*
24	52.8000	0.0006

Table 94: Chi-Square results – 2nd Questionnaire teachers

Second Questionnaire for the teachers

Compute Results : *Show*: Expected counts

STATEMENT	*LESS THAN A TRADITIONAL LESSON*	*NO DIFFERENCE FROM A TRADITIONAL LESSON*	*MORE THAN A TRADITIONAL LESSON*	
Studen interest level in the lesson	0 0.2308	0 0.7692	3 2.0000	*3*
I provide tools for the students that help them learn	0 0.2308	0 0.7692	3 2.0000	*3*
Student´s level of participation in the lesson	0 0.2308	1 0.7692	2 2.0000	*3*
During the lesson students present presentations that they have prepared	0 0.2308	2 0.7692	1 2.0000	*3*
Level of student´s concentration	0 0.2308	1 0.7692	2 2.0000	*3*
I can guide the student´s to reach answers to questions and assignments on their own	0 0.2308	1 0.7692	2 2.0000	*3*
The students like the subject being learned	0 0.2308	0 0.7692	3 2.0000	*3*
I use examples that the students bring during the lesson	0 0.2308	0 0.7692	3 2.0000	*3*
I conduct discussions with the students	0 0.2308	0 0.7692	3 2.0000	*3*
How much effort the students invest in learning in the class	0 0.2308	1 0.7692	2 2.0000	*3*
The investment students make in doing their homework	0 0.2308	2 0.7692	1 2.0000	*3*
The students work in groups	0 0.2308	2 0.7692	1 2.0000	*3*
The students are bored during the lesson	3 0.2308	0 0.7692	0 2.0000	*3*
	3	*10*	*26*	*39*

DF	*Chi Square*	*P*
24	52.8000	0.0006

Table 95: Chi-Square expected counts – 2nd Questionnaire teachers

Second Questionnaire for the teachers

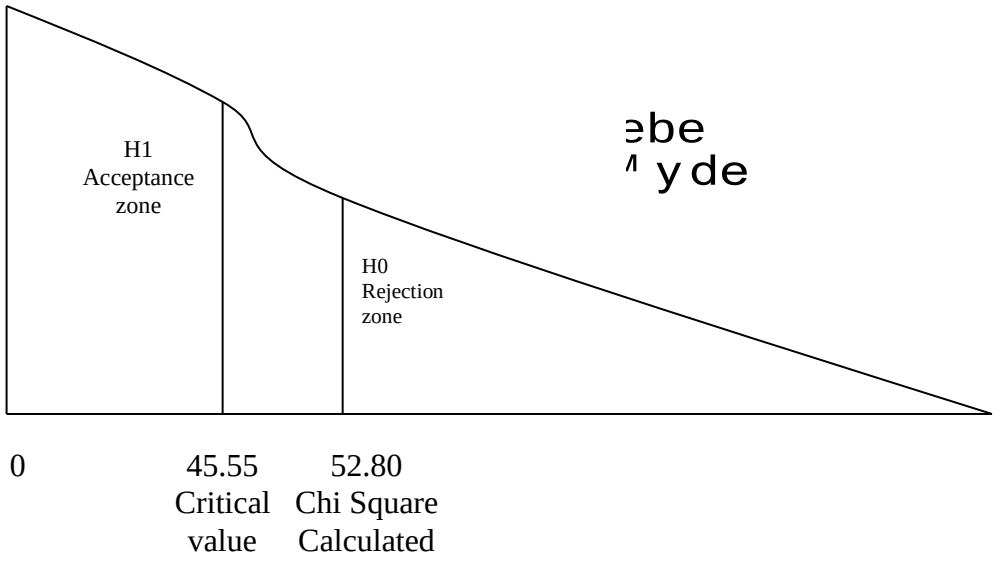
Compute Results: *Show*: Chi-square differences

STATEMENT	***LESS THAN A TRADITIONAL LESSON***	***NO DIFFERENCE FROM A TRADITIONAL LESSON***	***MORE THAN A TRADITIONAL LESSON***	
Studen interest level in the lesson	0 0.2308	0 0.7692	3 0.5000	*3*
I provide tools for the students that help them learn	0 0.2308	0 0.7692	3 0.5000	*3*
Student´s level of participation in the lesson	0 0.2308	1 0.0692	2 0.0000	*3*
During the lesson students present presentations that they have prepared	0 0.2308	2 1.9692	1 0.5000	*3*
Level of student´s concentration	0 0.2308	1 0.0692	2 0.0000	*3*
I can guide the student´s to reach answers to questions and assignments on their own	0 0.2308	1 0.0692	2 0.0000	*3*
The students like the subject being learned	0 0.2308	0 0.7692	3 0.5000	*3*
I use examples that the students bring during the lesson	0 0.2308	0 0.7692	3 0.5000	*3*
I conduct discussions with the students	0 0.2308	0 0.7692	3 0.5000	*3*
How much effort the students invest in learning in the class	0 0.2308	1 0.0692	2 0.0000	*3*
The investment students make in doing their homework	0 0.2308	2 1.9692	1 0.5000	*3*
The students work in groups	0 0.2308	2 1.9692	1 0.5000	*3*
The students are bored during the lesson	3 33.2308	0 0.7692	0 2.0000	*3*
	3	*10*	*26*	*39*

DF	*Chi Square*	*P*
24	52.8000	0.0006

Table 96: Chi-Square differences – 2nd Questionnaire teachers

Chi Square Graph for the Second Questionnaire for the teachers



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is rejected: The H1 or Working Hipótesis: There is a positive influence of the IWB e-learning tool, is accepted.

Graphic 13: Chi-Square – 2nd. Questionnaire teachers

Third Questionnaire for the teachers

Compute Results

STATEMENT	***NOT AT ALL***	***A LITTLE***	***MOSTLY***	***FULLY***	
I feel able to teach	1	1	0	1	*3*
Following training, I know how to integrate between the IWB and learning materials in my content area	0	0	2	1	*3*
The training contributed to my technological knowledge of operating the IWB	0	0	2	1	*3*
The training contributed to my technological knowledge of my familiarity with the computer	0	0	1	2	*3*
Following the training, I can idependently develop lerning materials for the IWB (digital learning units)	0	0	1	2	*3*
The training contributed to my pedagogical knowlege in the content area that I teach	0	0	0	3	*3*
	1	*1*	*6*	*10*	*18*

DF	*Chi Square*	*P*
15	16.0000	0.3821

Table 97: Chi-Square results – 3rd Questionnaire teachers

Third Questionnaire for the teachers

Compute Results

Show: Expected counts

STATEMENT	***NOT AT ALL***	***A LITTLE***	***MOSTLY***	***FULLY***	
I feel able to teach	1 0.1667	1 0.1667	0 1.0000	1 1.6667	*3*
Following training, I know how to integrate between the IWB and learning materials in my content area	0 0.1667	0 0.1667	2 1.0000	1 1.6667	*3*
The training contributed to my technological knowledge of operating the IWB	0 0.1667	0 0.1667	2 1.0000	1 1.6667	*3*
The training contributed to my technological knowledge of my familiarity with the computer	0 0.1667	0 0.1667	1 1.0000	2 1.6667	*3*
Following the training, I can idependently develop lerning materials for the IWB (digital learning units)	0 0.1667	0 0.1667	1 1.0000	2 1.6667	*3*
The training contributed to my pedagogical knowlege in the content area that I teach	0 0.1667	0 0.1667	0 1.0000	3 1.6667	*3*
	1	*1*	*6*	*10*	*18*

DF	*Chi Square*	*P*
15	16.0000	0.3821

Table 98: Chi-Square expected counts – 3rd. Questionnaire teachers

Third Questionnaire for the teachers

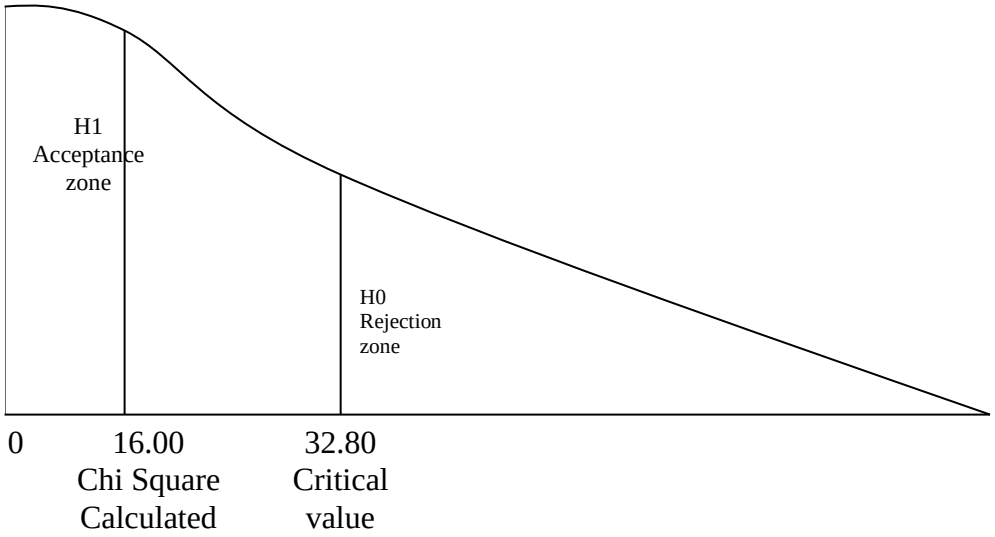
Compute Results
Show: Chi-square differences

STATEMENT	***NOT AT ALL***	***A LITTLE***	***MOSTLY***	***FULLY***	
I feel able to teach	1 4.1667	1 4.1667	0 1.0000	1 0.2667	*3*
Following training, I know how to integrate between the IWB and learning materials in my content area	0 0.1667	0 0.1667	2 1.0000	1 0.2667	*3*
The training contributed to my technological knowledge of operating the IWB	0 0.1667	0 0.1667	2 1.0000	1 0.2667	*3*
The training contributed to my technological knowledge of my familiarity with the computer	0 0.1667	0 0.1667	1 0.0000	2 0.0667	*3*
Following the training, I can idependently develop lerning materials for the IWB (digital learning units)	0 0.1667	0 0.1667	1 0.0000	2 0.0667	*3*
The training contributed to my pedagogical knowlege in the content area that I teach	0 0.1667	0 0.1667	0 1.0000	3 1.0667	*3*
	1	*1*	*6*	*10*	*18*

DF	*Chi Square*	*P*
15	16.0000	0.3821

Table 99: Chi-Square differences- 3rd Questionnaire teachers

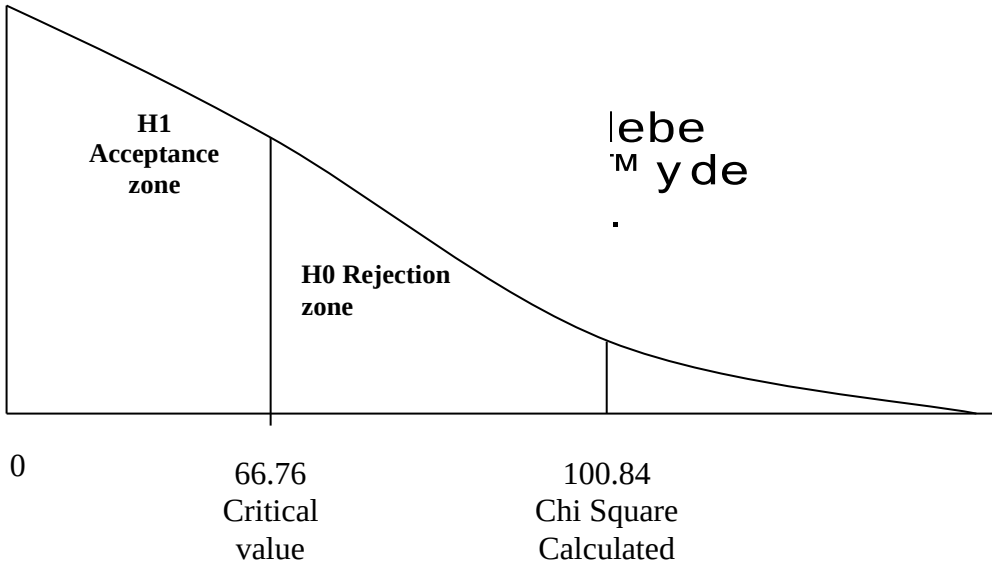
Chi Square Graph for Third Questionnaire to teachers



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is accepted: The H1 or Working Hipotesis: There is a positive influence of the IWB e-learning tool, is rejected.

Graphic 14: Chi-Square – 3rd Questionnaire teachers

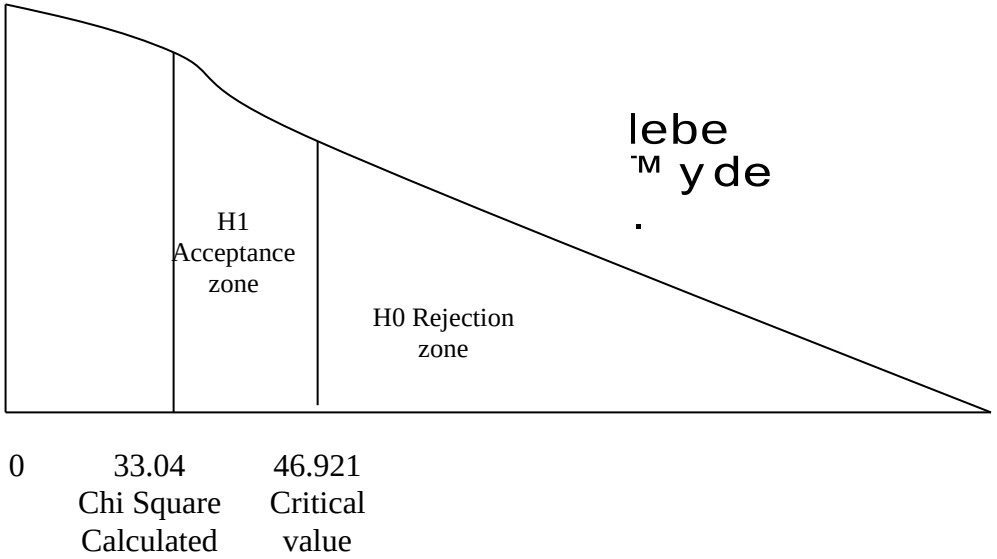
Chi Square Graph Average for the Students



The H0 or Null Hipothesis: There is not any influence of the IWB on the teaching of English, is rejected: The H1 or Working Hipotesis: There is a positive influence of the IWB e-learning tool, is accepted.

Graphic 15: Chi-Square Average Students 7 "A", "B" & "C"

Chi Square Graph Average for the Teachers



The H0 or Null Hipótesis: There is not any influence of the IWB on the teaching of English, is accepted: The H1 or Working Hipotesis: There is a positive influence of the IWB e-learning tool, is rejected.

Graphic 16: Chi-Square Average teachers

4.3.2 Analysis of results

- **Major Difficulties and Challenges in the Survey.** :There were no difficulties nor challenges, because all the collaboration in the gathering of the data throught the questionnaires were obtained immediately from teachers and the students of the 7th Grade “A”, “B” and “C”.
- **Shortage of IWBs in the school:** Not all the teachers at the Colegio Los Pinos use the IWB, making it very difficult to create continuity in the learning throughout the school.
- **Pedagogical use of the IWB in a manner that takes advantage of their added value:** According to the teachers, the IWBs are being used regularly, but not as much as it should be. A very important issue is that the adequate or correct use of the IWB is from a pedagogical standpoint, and specifically use the board to improve the learning far beyond the first “attraction” of the technology.
- **Technological difficulties operating the IWBs:** Sometimes there are few technical malfunctions in the operation of the IWBs, nevertheless, they solve this problems with technical support.
- **Over-burdening of the teachers:** When the teachers prepared the lessons for instruction using the IWB, takes a large amount of time the elaboration of didactical material; in addition to the regular tasks and responsibilities and professional development that teachers already participate in, this gave them additional burden on teachers activities.

4.4 CONCLUSIONS

Students perspective:

- The IWB is a powerful e-learning tool that allows students to enjoy more the learning in a 83.1% while interacting 72.6% and receiving the lesson through this device.
- Students feel that activities are more “fun” and they are more engaged in a 72.6% and motivated to pay attention to the teacher, they feel are less bored while using the IWB in class.

- Students are able to improve their ability to work in groups, promoting the collaborative work in class, however the results obtained 51.4% indicated that the half of the students wanted to do it while the other half disagreed it.

Teachers perspective:

- The IWB allows a more enjoyable teaching in a 100%, pedagogic interactive, visual and easy understandable class activity for teaching English as a foreign language in greater depth.
- Teachers were able to access to more and up-dated learning material in a 66.7% and resources during class activity, fullfiling the curriculum content and strengthening their knowledge in teaching English as a foreign language.
- Teachers need to invest a lot of work in creating all the digital material and preparing the lessons in a 66.7%, nevertheless, they think that they can achieve their goals either in the traditional class or with the IWB e-learning tool.
- At Colegio Los Pinos only the 45% of the classrooms are equipped with and IWB, they are doing it in phases.

Chi Square conclusions:

- The results obtained with the Chi Square were also very important, the students rejected the Null Hypothesis which states that there is not any influence of the IWB on the teaching English and they accepted the Working Hypothesis which states that there is a positive influence of the IWB e-learning tool. This means that new generations of students likes the use of new technology such as the IWB in class activity, they really enjoy and agree the use of this techniques.
- The results obtained in the Chi Square of the teachers is the contrary, they accept the Null Hypothesis which states that there is not any influence of the IWB on the teaching English and they rejected the Working hypothesis which states that there is a positive influence of the IWB e-learning tool. This means that they think the traditional way of teaching instead of changing for new teaching styles using e-tools such as the IWB.

4.5 Recommendations

- Increase the use of the IWB to allow the students to enjoy, learn and interact more while they learn the lesson with this device.
- Motivate to the students to use more the IWB so they will be engage in class, pay more attention and feel less bore during class.
- Whenever possible stimulate within the students activities to work in groups and promote the collaborative work in projects to learn English as a foreing language through the use of the IWB.
- Increase the use of the IWB in class activity as part of the curriculum planning maximizing the learning experience taken to the highest level of understandable class activity of English as a foreing language in greater depth.
- Teachers must be more creative in the selection of didactic material and resources to prepare the class with the use of the IWB and teach English as a foreign language in a more amusing and exciting way.
- In order to avoid burden of teachers while preparing interactive lessons will be helpful to create a database of lessons using technological elements and share among the teachers improving the IWB board use.
- At Colegio Los Pinos it is recommended to keep equipping with an IWB in the classes that still do not count with this e-learning tool.
- New generations of students likes the use of new technology such as the IWB in class activity, they really enjoy and agree the use of this techniques,- **LETS USE IT MORE……**
- It is important to change the pedagogy from the traditional or regular type learning to the integration of new teaching styles with the IWB e-learning tool in class in a more often in class activity to ease the teaching and learning of English as a foreign language.

PART FIVE

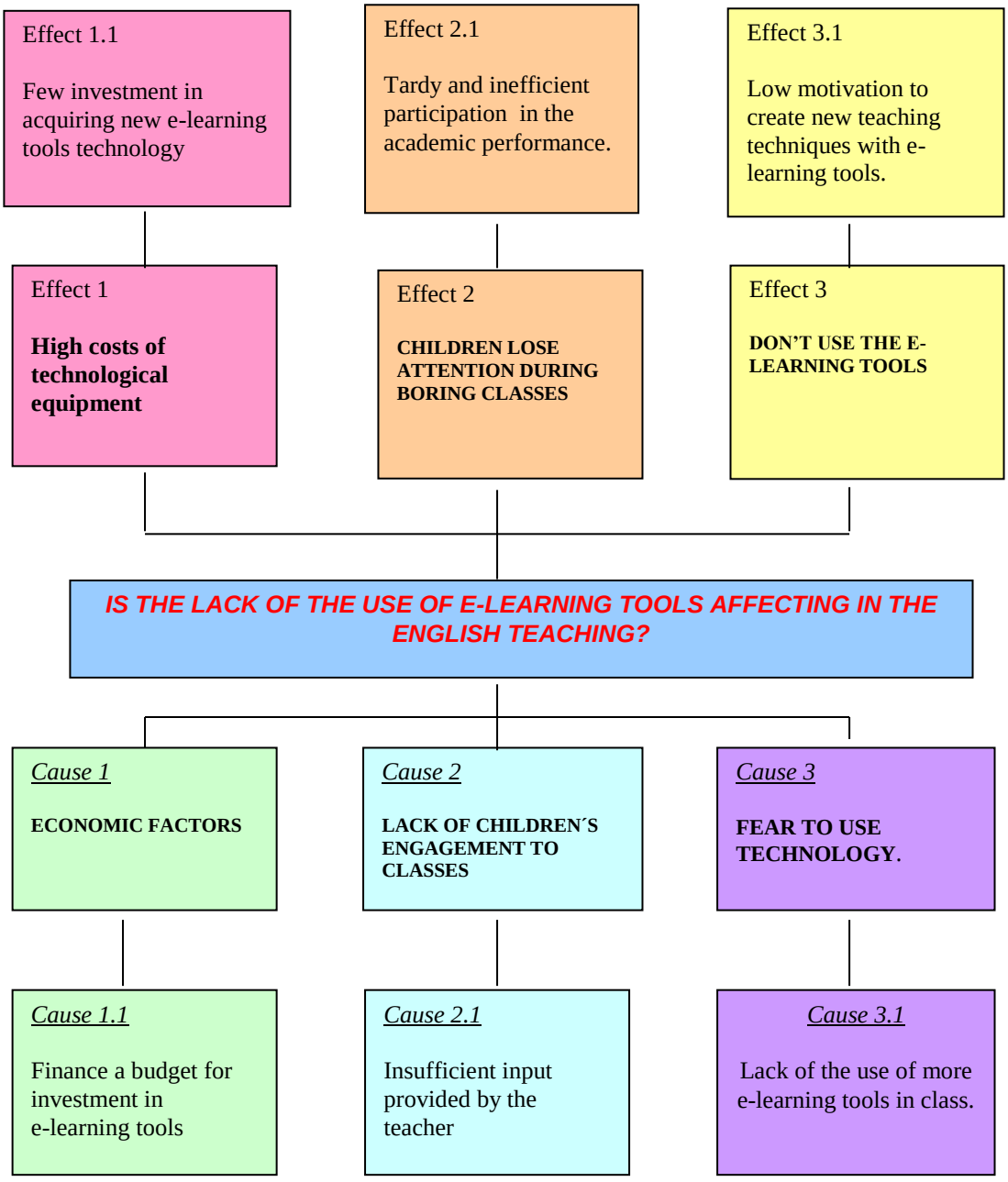
THE PROPOSAL

5.1 Analysis of the people involved

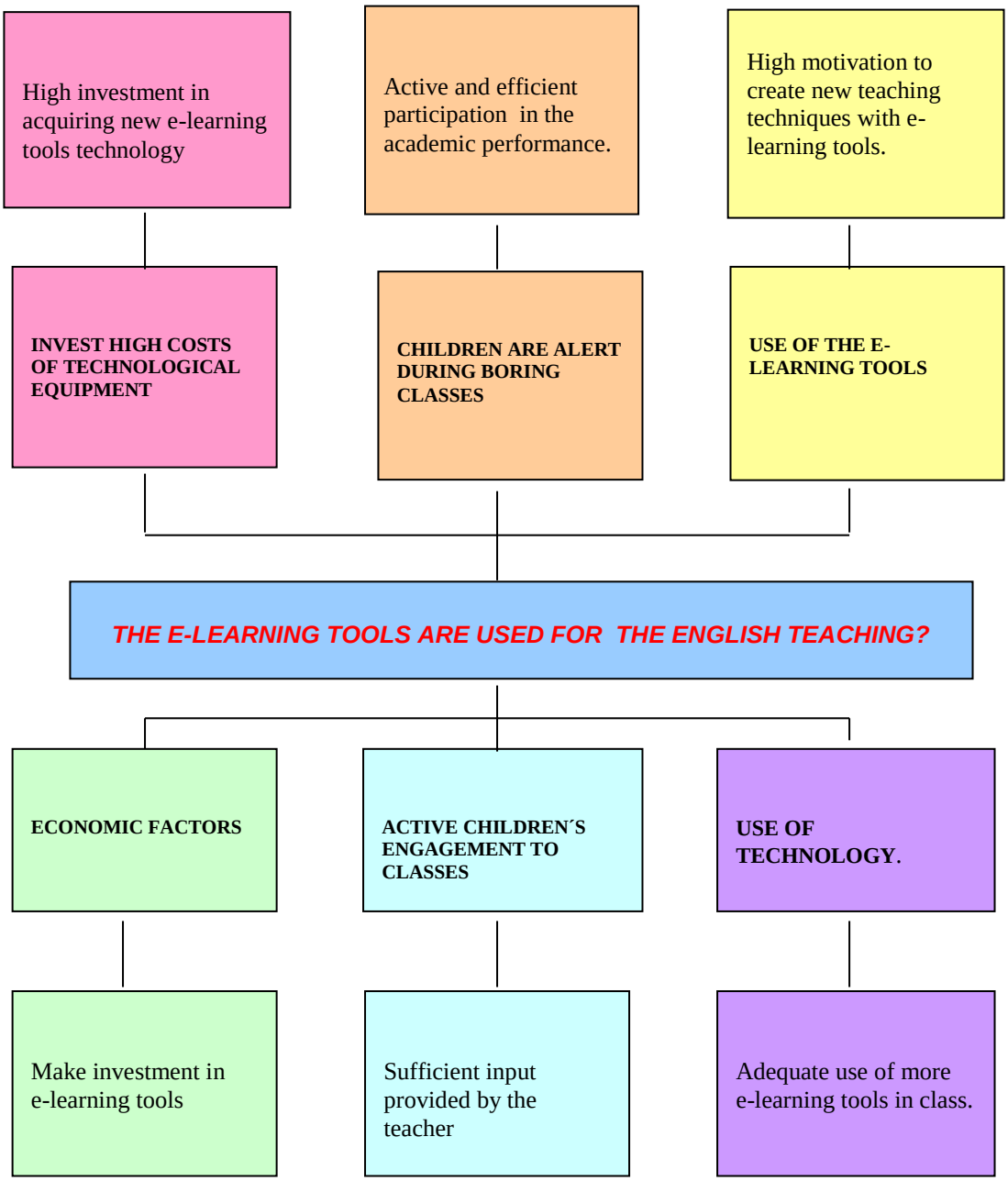
Groups	Interests or benefits	Problems found	Resources and commands
Students	The integration of more e-learning tools that allows them to learn English as a foreign language	The students do not develop and use adequately their habilities to learn English with the help of e-learning tools.	Be competent in the use of new e-learning tools to improve their English learning habilities.
Teachers	Improve the quality and teaching learning process.	The time spend to teach English with the e-learning tools such as the IWB is not sufficient.	Use more e-learning tools to teach English.
School	The teaching of English is an important tool for the students of the the 21th century.	Students interact with e-learning tools such as the IWB.	Use more E-learning tools in the development of the curriculum, so that the students will be prepared for the new technologies advances in the English learning.

Table 100: Analysis of the people involved

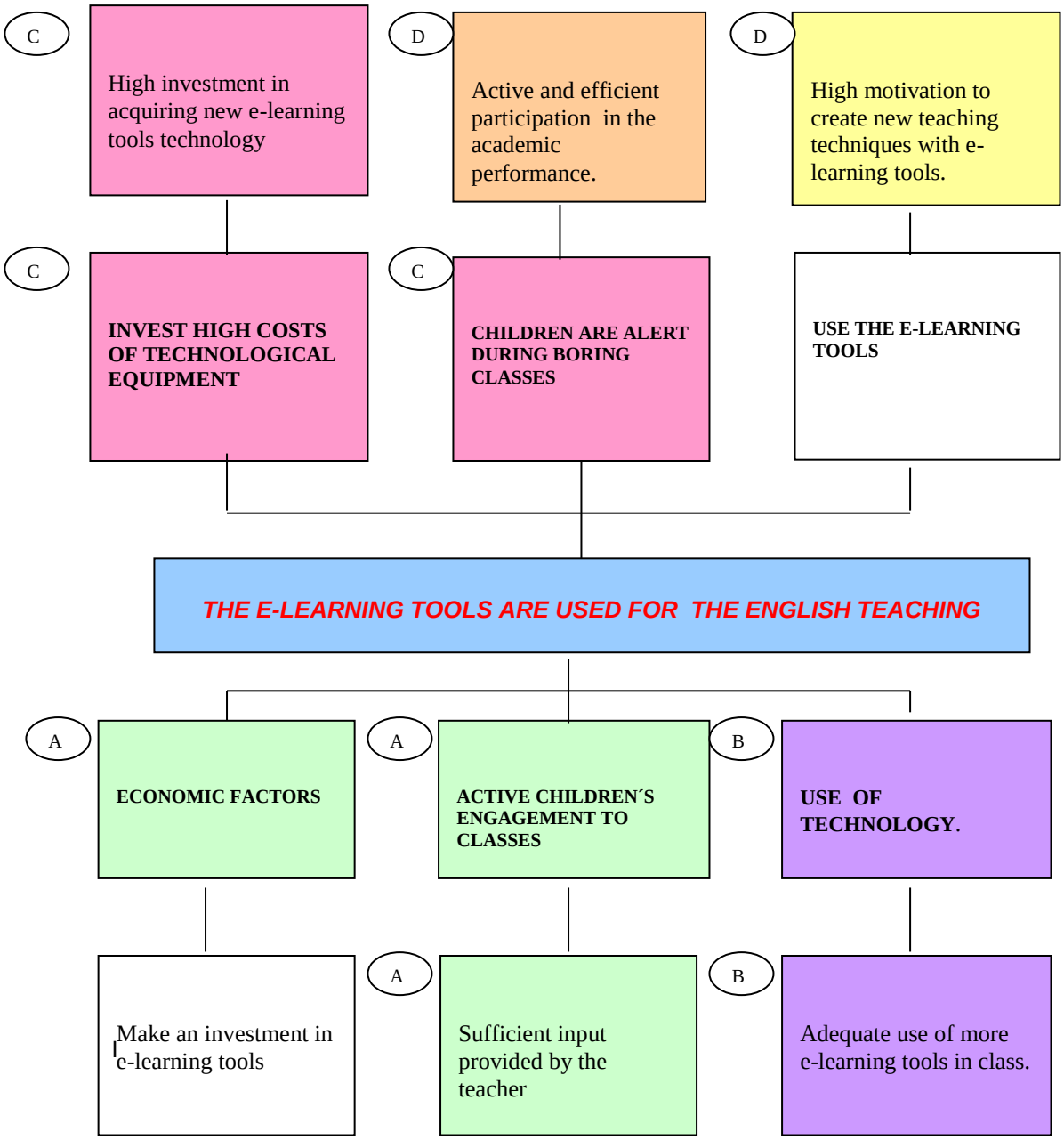
5.2 Tree of problems



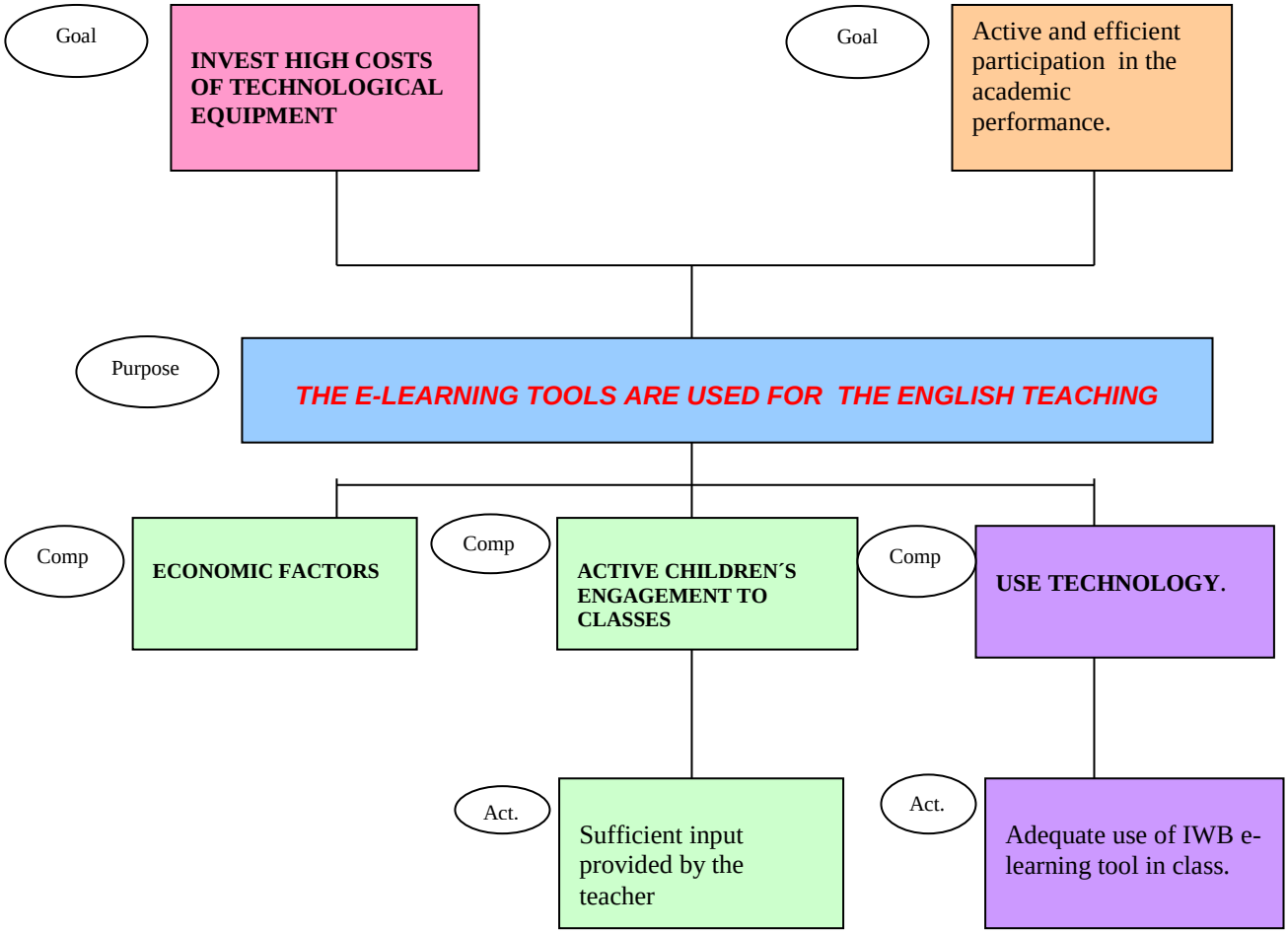
5.3 Tree of objectives



5.4 Tree of alternatives (options)



5.5 Analytical structure of the proposal



5.6 Logic vertical of the column of objectives

SUMMARY OF THE OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	HYPOTHESIS - ASSUMPTIONS
Purpose • The investment of high cost of technological equipment will improve significantly in the performance of the students in their learning of English as a foreign language and other subjects.	The degree of the performance in the learnng of English has increase due to the technological equipment in a 20% available in the school	The inventory	The students are highly motivated with the new technology available.
• A more active and continuous use of the IWB in the teaching of English.	The students have increase in 20% the use of the IWB, that helps them in their studies and performance in class activity and examinations.	Registers and booking controls of equipment use.	
Purpose • The e-learning tools are being used for the English teaching in the school	The number of students that improve their abilities of writing, listening, speaking in a 45% and the use of English increase drastically in a 60% with the use of the e-learning tools such as the IWB.	Results of evaluations	All the necessary conditions of the academic process are given: • Equipment of e-learning tools in every class. • Train teachers on how to use the IWB e-learning tool. • Train students in the use of the IWB. • The successful academic performance will be seen in the results that the students will obtain with the help of the e-learning tools**.**
Components • Its important to obtain an active children´s engagement to classes with the use of IWB.	Increase in obtaining an active engagement to class activity.	Quimestral grades obtained by the students.	Students have the abilities to access and manipulate adequately the e-learning tools such as the IWB.
• Economic factors which allows obtaining the e-learning tools such as IWB in every class.	Increase the economic factor to equip every class with e-learning tools such as an IWB.	Every student will be able to use the e-learning tools such as the IWB.	
Activities	Resources	Costs	
• Seminars every quimester	Books Computer	$ 30,000	
• Workshops every three months	Books	1,500	

Table 101: *Logic vertical of the column of objectives*

5.7 Budget

Recursos	**Costos**
- Teacher	US$ 1,000
- PC full-multimedia.	US$ 800
- Connetion to Internet.	US$ 180
- Use of the platform.	US$ 120
- Acquisition of e-learning material.	US$ 500
- Training course for teachers and students	US$ 1,000
TOTAL	**US$ 3,600**

Table 102: Budget

5.8 Chronogram of activities

ACTIVIDADES	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	OCT
Elaboration of the training Project plan	x													
First workshop seminnar					x									
Second workshop seminnar										X				
Workshop I			x											
Workshop II						x								
Workshop III									x					
Workshop IV												x		

Table 103: Chronogram of activities

5.9 The Evaluation

In the process of evaluation, the activities of the Project and its indicators were mainly focused on evaluating the results, the pertinent objectives were the components, the purpose and the final issue of the theoretical frame of the project. Evaluating the impact, in the colum of the objectives of the theoretical frame were developed the hypothesis: it was assumed that the components, plus some environment conditions, should develop in a certain time, the purpose (inmediate impact) and the purpose (mediate impact and long term).

The proposal is to be able to install IWB in each class of the Colegio Los Pinos and use it more, in order to improve the e-learning throught this new technologies, so the students of the 21st century will be able to face new chanllenges in their education.

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GLOSSARY

Assessment:

The act of assessing, appraisal, evaluation.

CALL:

Computer Assisted Language Learning

CEFR:

Common European Framework Reference

CMC:

Computer-mediated communication

Integration:

Integrating school curriculum involves bringing together subject areas and teaching them in relation to one idea or theme.

E-learning tools:

E-learning, as electronic learning is often known, is being made a more realistic and practical idea by new programs and websites that allow information sharing through different media.

ELT:

English language teaching

Engagement in classroom:

Students are engaged when they are involved in their work, persist despite challenges and obstacles, and take visible delight in accomplishing their work

Enhance classrooms:

Enhanced Classrooms are computer-equipped and networked to campus servers and to the Internet for complete large screen computer data and video projection

IM:

Instant messaging

IWB / Interactive white board:

It is a board that allows educators and students to use technology to build and enhance learning.

Strategies:

Organized content, and developed a course plan with ideas for how to give students the practice that will make it possible for them to achieve the course goals.

ANNEXES

ANNEX 1

Questionnaire of Students' Attitudes toward learning via the IWB (Interactive whiteboard)

In classes with an IWB, there is more than in traditional classes….

QUESTION	DON'T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE
Enjoy learning					
Studies are interesting					
Can understand the learning material					
I want to participate in the lesson					
Studies are easier					
Students are more focused					
The teacher involves students in class discussions					
I like to come to school					
Students work in groups					
The topics we learn are connected to my life and are relevant to me					
The IWB help me with the lessons					

ANNEX 2

Questionnaire of Teachers' Attitudes toward Instruction Using the IWV

QUESTION	DON'T AGREE	AGREE A LITTLE	AGREE SOMEWHAT	MOSTLY AGREE	STRONGLY AGREE
I enjoy teaching					
I need to invest a lot more work					
I can more appropriately match the learning materials to the needs of different students					
I have better access to learning materials and resources at different levels					
I can teach topics in greater depth					
I feel that my instruction is more professional					
I am open to more up-to-date materials					
I am strengthening my knowledge in the subject areas I teach					
I can more easily fulfill the learning goals.					
I raise my expectations from students' work					
I feel that the students appreciate me more					
There are fewer discipline disturbances in the class					
I am more dominant and meaningful in the school					

ANNEX 3

Teacher Attitude towards Instruction Using the IWB (Interactive whiteboard)

QUESTION	LESS THAN A TRADITIONAL LESSON	NO DIFFERENCE FROM A TRADITIONAL LESSON	MORE THAN A TRADITIONAL LESSON
Student interest level in the lesson			
I provide tools for the students that help them learn			
Student's level of participation in the lesson			
During the lesson students present presentations that they have prepared			
Level of student's concentration			
I can guide the student's to reach answers to questions and assignments on their own			
The students like the subject being learned			
I use examples that the students bring during the lesson			
I conduct discussions with the students			
How much effort the students invest in learning in the class			
The investment students make in doing their homework			
The students work in groups			
The students are bored during the lesson			

ANNEX 4

Questionnaire of Teacher Attitudes toward Training in Instruction Using the IWV (Interactive whiteboard)

QUESTION	NOT AT ALL	A LITTLE	SOMEWHAT	MOSTLY	FULLY
I feel able to teach without training for the next school year					
Following training, I know how to integrate between the IWB and learning materials in my content area					
The training contributed to my technological knowledge of operating the IWB					
The training contributed to my technological knowledge of my familiarity with the computer					
Following the training, I can independently develop learning materials for the IWB (digital learning units)					
The training contributed to my pedagogical knowledge in the content area that I teach					

ANNEX 5 Chi Square Distribution Table

df	0.995	0.99	0.975	0.95	0.90	0.10	0.05	0.025	0.01	0.005
1	---	---	0.001	0.004	0.016	2.706	3.841	5.024	6.635	7.879
2	0.010	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	14.860
5	0.412	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086	16.750
6	0.676	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	18.548
7	0.989	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	20.278
8	1.344	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090	21.955
9	1.735	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	23.589
10	2.156	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	28.300
13	3.565	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	29.819
14	4.075	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	35.718
18	6.265	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	38.582
20	7.434	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	39.997
21	8.034	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	41.401
22	8.643	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	42.796
23	9.260	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	45.559
25	10.520	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	46.928
26	11.160	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	48.290
27	11.808	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154	79.490
60	35.534	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	91.952
70	43.275	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	104.215
80	51.172	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	140.169