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CONTRIBUTIONS OF THE INTERACTIVE WHITEBOARD IN CHILEAN HIGH SCHOOL STUDENTS OF ENGLISH AS A FOREIGN LANGUAGE

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ABSTRACT

Based on our experiences as students in secondary and higher education, we have seen how new sources of ICT (Information and Communication Technologies) have been introduced in the classrooms of our educational system, for example, overhead projectors, computers with software such as office automation and the use of hardware as data shows, VCRs (Video Cassette Recorders), etc., and recently, the interactive whiteboard (from now on, IWB). The Chilean government has placed special emphasis on the introduction of IWB in the classroom through Enlaces, beneficiating 1.512 educational institutions during 2009 with a special fund (RECURSOS EDUCATIVOS DIGITALES, 2010). That is why the aim of this research is to explore the contributions of the use of IWB in English classes in a secondary school, taking into account that *"SMART interactive whiteboards are important educational tools that allow students and teachers to combine [several] resources and actions, providing touch interaction and improving the participation and results in classrooms."* (MINEDUC, 2010).

This objective will allow us to know how effectively the incorporation of the IWB can contribute in the teaching and learning of English as a foreign language through the implementation of an educational intervention in a secondary school.

RESUMEN

Basado en nuestras experiencias como alumnos en la educación media y superior universitaria, hemos visto cómo nuevos recursos de las TIC (Tecnologías de la Información y la Comunicación) han sido introducidos en las aulas de nuestro sistema educacional a lo largo del tiempo, como por ejemplo, proyector de transparencias, computadores con software como herramientas ofimáticas y el uso de hardware como data show, videograbadora, etc., y últimamente la pizarra digital interactiva (en adelante IWB). El gobierno chileno ha puesto especial énfasis en la introducción de la IWB en las aulas a través de Enlaces, beneficiando a 1.512 establecimientos durante el año 2009 con un fondo especial (RECURSOS EDUCATIVOS DIGITALES, 2010). Es por esto que el objetivo de esta investigación es explorar las contribuciones que otorga el uso de la IWB en el aprendizaje del idioma inglés por parte de alumnos de un establecimiento de educación media, tomando en cuenta que *"las pizarras interactivas SMART son herramientas educativas importantes pues permiten a los estudiantes y profesores conjugar una gran cantidad de recursos y acciones, otorgando interactividad al tacto y mejorando la participación y resultados en las aulas"* (MINEDUC, 2010).

Este objetivo nos permitirá conocer cuan, efectivamente, la incorporación de la PDI puede contribuir en la enseñanza y el aprendizaje del inglés como idioma extranjero, a través de una intervención educacional en un establecimiento de educación media.

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Chapter I: The problem

1. 1. Introduction

There is a strong desire to stimulate a change in the pedagogical practice in the Chilean educational system. From that premise, throughout the years, the Chilean Ministry of Education (Mineduc) has demonstrated a pronounced interest in providing schools ICT resources capable of delivering the teacher and students the possibility of a more interactive and motivating class; hence, providing learners the possibility of lifelong and continuous learning.

Moreover, the disappointing results in the English subject as a foreign language in the Chilean curriculum have shown the need of investing in new technologies and programs (such as English Opens Doors) for various reasons. One of those motives is that *"because secondary school students graduated from fourth grade do not reach levels of proficiency in English and cannot communicate in this language, what is more, English teachers do not have either a sufficient level of competency; the program (English Opens Doors) seeks to achieve quality in teaching English at the end of compulsory education aligned to international standards (...)* Within the main activities of this program includes: a) providing scholarships to students of English teaching program and exchange with foreign universities; b) Continuing education for teachers, workshops and local educational networking c) Design and production of school as an educational resource

d) *Volunteer Program native speakers. This program has the following budget for the year 2010 (in thousands of \$): \$ 5,547,004 (OEI, 2010)."*¹

Among other things, MINEDUC has developed programs that have been assigned for the purpose of achieving this goal. For example in the mid-nineties, the ENLACES program began operating, which specifically concerned, the delivery of computers in public schools along Chile, and later introducing the possibility of internet access.

In this new century, the Ministry of Education is trying to keep our education at the forefront of technological developments in education. An example of this, is that public schools have been given laptops to be used by teachers in classrooms, data shows for presentations and interactive whiteboards provided specifically during 2008; all in all, having the objective of facilitating the teaching practice and the learning process in Chilean educational context.

Another problem is that *"traditional education, from the earliest years of schooling to postgraduate students, results in little motivation and even bored with the way they learn, they are forced to memorize a lot of information , much of which becomes irrelevant in the outside world and retention levels fall, reaching these*

¹ *"Dado que los alumnos y alumnas egresados de cuarto año medio no alcanzan los niveles de competencia en inglés y no pueden comunicarse en este idioma, a lo que se agrega que docentes de inglés no tienen tampoco el nivel suficiente, el programa (Inglés abre puertas) busca lograr una calidad en la enseñanza del inglés al finalizar la educación obligatoria alineada a estándares internacionales (...) Dentro las actividades principales de este programa se contempla: a) Entrega de becas a estudiantes de pedagogía en inglés e intercambio con universidades extranjeras; b) Cursos de perfeccionamiento para docentes, talleres y creación de redes pedagógicas locales; c) Diseño y producción de clases como recurso educativo y d) Programa de voluntarios angloparlantes. Este programa posee el siguiente presupuesto para el año 2010 (en miles de \$): \$ 5.547.004". (OEI, 2010).*

into oblivion. (...) In this way new forms of intervention in the classroom, such as making use of new ICT resources, possible changes in the way of teaching and promote the usefulness of the contents in daily life and the positive attitude of students. In this context, the most important signal that we provide with the manipulation of the IWB, is giving appropriate use, active and independent roles for the students in their school work." (Gatica Zapata et al., 2009: 35).

Another example happened on April 2010, with the donation equivalent to 80 million pesos from the Canadian company SMART Technologies, distributor of the SMART board, *"which aims to support governmental efforts to standardize the school lives of thousands of students living between VI and VIII regions of Chile, in particular after the earthquake, as they lost their technology resources, especially the SMART board interactive whiteboards."* (MINEDUC, 2010: Donación).

This research explores the use of the IWB at a secondary school in which these technological resources have been being used by teachers and students and it is hypothesized that the effective integration of the IWB into the teaching practice depends, largely on, how much attention has been paid to planning, and all the other tasks involved in teaching English as a foreign language.

1. 2. Research questions and objectives

1. 2. 1. Research questions

- How effectively can the use of the IWB be integrated into the teaching practice?
- In what ways the use of the IWB can contribute to the teaching and learning of English as a foreign language?

1. 2. 2. General objectives

- To evaluate the incorporation of the IWB into the teaching practice.
- To implement an educational intervention which incorporates the use of the IWB in the English classroom.
- To identify aspects of the use of the IWB that contribute to the teaching and learning of English as a foreign language.

1. 2. 3. Specific objectives

- To analyse the incorporation of the IWB into the teaching practice of the teacher-researcher.
- To evaluate the incorporation of the IWB into the teaching practice of the teacher-researcher.
- To plan a teaching unit that incorporates the use of the IWB.

- To implement a teaching unit that incorporates the use of the IWB.
- To design a teaching guideline for the incorporation of the IWB in the teaching of English as a foreign language.

Chapter II: Theoretical background

2. 1. Introduction

In this chapter, evidences about the use of the IWB in Chile is analyzed, taking into account the importance of the English language as a foreign language and how this ICT resource has been used in some schools along Chile and other countries, in which many teachers provide their viewpoints about the use of the IWB in the English classroom. At the same time, there are some investigations and initiatives that Mineduc and some schools have introduced.

2. 2. The importance of the English language

English has evolved as a worldwide spoken language over the years and its importance has been portrayed by different authors who claimed, for example, that *"by the end of the twentieth century English was already well on its way to becoming a genuine lingua franca that is a language used widely for communication between people who do not share the same first (or even second) language"* (Harmer, 2007: 13).

This "worldwide" characteristic of English language does not only mean that it is present in many countries, but also in many fields of work (such as computing, science, sports, medicine, and politics, among others), researching and other activities. Thus, the role of English in human communication has been notorious, making this language a lingua franca.

There are currently around 1.5 billion speakers of English worldwide, of whom only same 329 million are native speakers (...) it currently means that "a quarter of the world's population speaks English, in other words, and native speakers are in a proportionately ever-decreasing minority (Harmer, 2007: 13).

All of these opinions converge in the idea that the English language has emerged and become a tool of communication for speakers of different languages and backgrounds but having in common that they can communicate with each other in English. That is why, Chile has also been involved in this highly necessary option, that seeks for having inhabitants who may be able to speak in a foreign language.

2. 3. Differences among approach, method and technique

To begin with, an approach is defined as a set of assumptions dealing with the nature of language, learning, and teaching. Method was defined as an overall plan for systematic presentation of language based on a selective approached. It followed that techniques were specific classroom activities consistent with a method, and therefore in harmony with an approach as well (Richards and Renendya, 2002: 9).

Many teachers have found the notion of methods attractive over the last one-hundred or so years, since their offer apparently foolproof systems for classroom instruction and are hence sometimes embraced enthusiastically as a panacea for the "language teaching problem" (Richards and Renendya, 2002: 5).

2. 4. Definition of foreign language

In the Chilean education background, English is seen as a **foreign language** since it is described as *"English for use in a non-English-speaking region, by someone whose first language is not English"* (www.esljobproject.com, 2008). It is also said that *"EFL described situations where students were learning English in order to use it with any other English speakers in the world"* (Harmer, 2007: 19). Since we have only one official language that is Spanish in comparison with other countries in which English is considered as an official language along with others 2009² (English as a Second Language, ESL) which is defined as *"an acronym that is used primarily in educational settings and stands for English as a Second Language. It refers to teaching English to a person whose native language is one other than English. It is described for students who are living "in a target language community" (e. g. Britain, the USA, etc.) and need the target language (English) in order to survive and prosper in that community (...)* (Harmer, 2007: 19) Other acronyms that are often used with this population are ELL (English Language Learner) and LEP (Limited English Proficient/Limited English Proficiency)³. Lately, another term has been used to refer to those *"students whose first or primary language(s) is other than English and who require specialized programming and/or additional services to develop English language proficiency and to realize their*

² As of 2009, the 27 countries using English as an official language along with another one were: Canada, the United States, Puerto Rico, Cameroon, Kenya, Lesotho, Malawi, Mauritius, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Uganda, Bahrain, India, Singapore, Ireland, Malta, Fiji, Marshall Islands, Kiribati, New Zealand, Palau, Samoa, Tonga and Vanuatu.

³ <http://www.center-school.org/pa-pirc/documents/Understanding-ESL-Guidelines-and-Support-Programs.pdf>.

*potential within Manitoba's school system." Being known as English as an additional language (EAL)*⁴

Based on Chilean educational context, there has been a markedly interest to transform our country in a bilingual one. Considering this commitment, an initiative called "Campaña Chile Habla Inglés" ("*Chile speaks English campaign*") has been created. It is a wide governmental project that following a number of massive actions, seeks for an effective learning of the English language in Chile. (www.chilehablaingles.com, 2009).

2. 5. ICT in the educational field

It has been stated that English is officially and widely recognized as a standard for communications in the world. Chilean official educational programs, as it has been stated, contemplate the learning of English as one of their goals, following the importance this language has as a lingua franca. And the English language needs ways to reach its users. One of these ways is through ICT (Information and Communication Technologies) which purpose is to facilitate communication among users who can establish a conversation wherever they are in few seconds. This conception concerning ICT and English language learning as a second language is based on extensively recognized premises. For instance, Richards and Renendya (2002: 361) state that:

⁴ <http://www.edu.gov.mb.ca/k12/cur/diversity/eal/terminology.pdf>.

“In recent years, the use of technological aids, especially those related to computers, has increasingly become a common feature of the classroom. There is no doubt that computer-based instruction will occupy a more central role in the second language classroom in the future.”

As it is seen in this investigation, Richards and Renendya's statement can really fit in Chilean educational reality. Dedicated programs such as ENLACES demonstrate the intentions of the Chilean educational policy through years in incorporating and dealing with ICT.

2. 6. Teaching experiences with the IWB

The potential of the IWB to support teaching and learning has led us to the idea of considering this resource, not only as a tool for instruction in the classroom, but also, as a source of inspiration and creativity for the participation of each student inside the classroom, whom, with their own characteristics and needs, may be responsible for their own learning process in an autonomous way.

The IWB emerges as a notable element in the classroom because of its didactical functions. Several authors related to the educational field have postulated the potential use of the IWB, as well as teachers who have enhanced their practice using this technological device. For example:

Hamilton, an English teacher, talks about her experience using the IWB in the classroom with the following words: *“Three weeks in and I was smitten, and so were the students. Going back to the old whiteboard is like going back to writing a*

letter by hand! My IWB can do so many things for me that pen and ink can't do..."

(Hamilton, 2005: 55).

Likewise, educator Hamilton (2005) explains the reaction of their students after working with the IWB for a month; she asked her students to evaluate the use of the IWB. They preferred it over the old board; all students found that the activities in the IWB were easier to follow. The most frequent comment was that the IWB was clearer for explanation, because the size of the text was "really great." They also felt that the IWB helped the teacher to provide a better explanation of contents.

Raja Maznah, a teacher of the University of Malaya reports that *"the IWB is a tool that can help teachers to create a desired condition for learning in the classroom. With it, students can also get access to Google and Internet at their fingertips and can stretch their imaginations through sound, the visual medium and hyperlinks, thus making learning very engaging"* (Raja Hussain, 2006).

Based on the educational context of our country, Mabel Pizarro, Professor of Mathematics at the Colegio Franciscano Reina, points out: *"motivation can reach a high degree (...) the IWB has been a great support, excellent to be honest."* At the same school, teacher Ximena Rodríguez mentions that the IWB is attractive and innovative for the pedagogical practice (Meganoticias, 2008).

In this first formal experience in the second cycle of primary education, the results were spectacular, when comparing the progress in other homogeneous groups that had followed the traditional methodology. After a period of two months, students

were assessed with use of the technology group having improved their skills above the results that their peers without these resources obtained (Martínez Cremades et al., 2005: 1).

Teachers conclude that technologies should be included in the school curriculum, and not merely as a learning content in themselves, but as a tool that facilitates students' learning. Assessment surveys of the students involved also show (Martínez Cremades et al., 2005: 158):

96% of students in groups that have experimented with technologies believed to be the best way.

89% believe that working with technology improve their skills and knowledge.

According to Fabienne et al. (1999: 2), an IWB can support the teaching process of foreign languages in three main ways: it supports interaction and conversation in the classroom; it helps with the presentation of new cultural and linguistic elements; and it promotes the organizational skills of the teacher.

With an interactive whiteboard, the user is able to navigate from the board. He does not need to continually go back to the computer and, as a consequence, turn his back to the class. The teacher can spend his time concentrating on the learning process of the student instead of the technology. This is very important when using interactive whiteboards to teach and is crucial in the foreign language classroom (Gérard, Fabienne et al., 1999: 2).

In a research conducted at Colegio Lorenzo Murialdo School in Valparaíso, which main objective was to compare the use of the IWB with a conventional whiteboard, the teachers involved in the experience gave their views about the impact on the use of IWB in their pedagogical practice. On one hand, Mónica Illanes, said that it was a pleasure to work with this new and modern technology. She stressed that all her students were always attentive and willing to work with the IWB, something that in the conventional board was more difficult. On the other hand, Ingrid Conejeros, teacher of 4th secondary education grade "A", in the same institution, said *"there is no any parameter to compare the IWB with a conventional board, it is an innovative resource. As a matter of fact, students prefer this kind of technologies like the computer nowadays"*. A fourth elementary student of the same school noted that *"the class has progressed a lot, when compared with use of conventional boards that were much difficult for us to work with."* In the same news report, Peter Krisam said: *"teaching is being taught to students with teachers of the twentieth century with technologies and tools of the nineteenth century. And the IWB is a tool to incorporate and allow students with 21st century needs. In my opinion, the IWB is a magnificent tool of communication; it unifies the advantages of a traditional whiteboard with new technologies like the projection of images and drawings, the interaction that can be made using these pictures, the focus that a type of these images can impact on students' attention and the uncountable.* (Crónicas de Hoy, 2008).

2. 7. National ICT initiatives incorporating the IWB

There have been a few projects for the incorporation of the IWB in our educational system. For example:

ENLACES (2008), a national innovative project explores educational possibilities in a 5th elementary education grade class manipulating an IWB, during 2008 an explorative study was held by the Comenius research center of the University of Santiago, it seeks educational possibilities in a 5th elementary education grade class using the IWB. This research (...) was aimed to develop an educative proposal which was focused on this grade as this is the starting point in Chilean educational system in which English as a foreign language formally starts in all public schools" (Pardo, 2008).

Apart from these government supported projects led by MINEDUC, this institution also supports other initiatives that have called the attention of foreign investments.

A case that can be considered, is a recent donation supported by MINEDUC:

"...an important investment over \$90.000.000 Chilean pesos has been done by La Pintana⁵ local government, focused on English subject, due to the excellent work done by the community English network that started in 2004. This investment was made to improve public school management, resulting in 15 new interactive classrooms all of them implemented with update technology, each of

⁵ La Pintana is a Chilean *borough*, a local administration lead by a Mayor.

them including an IWB. (...) In the current year, students are learning English in these modern rooms and teachers are working together to maximize their use, sharing experiences and preparing materials." (MINEDUC, 2010).

Another initiative took place in the Bío-Bío region during 2008. A hundred public schools were granted financial aids by the SEREMI of education and some local governments in which they have provided and installed IWB in the classrooms (Gatica Zapata et al., 2009: 13).

2. 8. Potential of the IWB as a teaching tool

The IWB provides unique attributes that enhance the teaching practice. According to BECTA (British Educational Communications and Technology Agency) *"interactive whiteboards are creating quite a stir in classrooms across (England) (...) Pupils talk about enjoying lessons more and finding them more interesting. Teachers revel in the increased range of materials available and celebrate the tangible improvements in pupils' behavior"* (BECTA, 2008: 1).

Apart from that, *"Interactive whiteboards are rapidly becoming a common classroom resource and many schools and local education authorities are already reporting benefits in terms of improved teaching and learning opportunities across the whole curriculum"* (BECTA, 2008: 2). It implies that new technologies in the classroom could enhance students' participation and motivation since they interact with the teaching contents.

Referring to the benefits for teachers in the use of IWB, it is suggested that *"The integration of the interactive whiteboard encourages teachers to manipulate the technology in order to encourage and develop active learning. Effective use of an interactive whiteboard encompasses and extends a range of teaching styles"* (BECTA, 2008: 2). It is also mentioned that *"The interactive whiteboard enables teachers to demonstrate in a clear, efficient and dynamic way. As pupils visualize the techniques or instructions, for example, they use the visual and kinesthetic stimuli to develop and reinforce their understanding"* (BECTA, 2008: 3).

In terms of the benefits that this device can provide to both, teachers and students, they have the potential to (BECTA, 2008: 2):

- *Enhance demonstration and modeling.*
- *Improve the quality of interactions and teacher assessment through the promotion of effective questioning.*
- *Redress the balance of making resources and planning for teaching.*
- *Increase the pace and depth of learning.*

Most of the literature about the effects of the IWB in education is highly positive about the impact and the potential of the technology. Thus, some of the advantages associated with the use of IWB technology are: (a) it facilitates the effective integration of multimedia in the 'traditional' whole class language classroom (Hall & Higgins, 2005; Walker, 2003; Gray et al., 2005) and facilitates

the design of activities/materials which are tailored to meet the needs of students with diverse learning styles (Wall et al., 2005), (b) its use tends to enhance motivation, interaction and collaborative learning in the classroom (Bell, 2000; Cutrim Schmid, 2006a,b), and (c) it has a positive impact on students' and teachers' development of ICT skills.

However, these studies also mention some drawbacks of IWB technology, such as (a) teachers' feeling of ineptitude and lack of competence concerning their knowledge of ICT (Glover & Miller, 2001) and (b) teachers' concern about making their lessons more teacher-centered if too much focus is given to the IWB technology (Goodison, 2003).

"In English, for example, the use of interactive whiteboards can support aspects of shared writing. The process of planning and composition is demonstrated by the teacher and writing is modified and adapted on screen through interaction and discussion with pupils."

As it could be observed, there has been many initiatives by Mineduc to provide schools with ICT technologies and equipment to help teachers and students in improving the teaching-learning process which has led to have a diverse of opinions about the real impact and contribution of the IWB in the English classroom.

Chapter III: Research design and methodology

3. 1. Purpose of the investigation

The aim of this investigation is to verify the contribution of an ICT tool (IWB) in the teaching and learning process in secondary school students. This involves the incorporation and evaluation of a teaching practice through the observation of classes, focus groups with the participation of students, interviews and video analyses.

3. 2. Research methods

This research is of a qualitative nature, based on the hermeneutic-interpretive paradigm, defined as *"that which studies the quality of activities, relationships, business, media, materials or instruments in a particular situation or problem"* (Vera, 2010). Moreover, *"the fundamental characteristic of qualitative research is its specific approach to see the events, actions, norms, values, etc., from the perspective of the people being studied "* (Mella, 2003: 24). While hermeneutics is defined as *"the art of interpretation"* (Mella, 2003: 104), also conceptualized as *"a branch of knowledge that has to do in general terms with the theory and practice of understanding and in particular terms the interpretation of text and actions "* (Mella, 2003: 101).

This research uses a descriptive methodology, because it describes and evaluates the teaching practices involved in the incorporation of the IWB and its contribution to the English language learning. Thus, this type of research is defined as *"that*

which describes a particular situation, making characterization of the phenomenon studied in accordance with the purpose expressed in the research objectives" (Cisternas, 2007). Besides, *"it does describe an object of study or a particular situation, pointing out their characteristics and properties (...) and includes description, registration, analysis and interpretation of the current nature and composition of the phenomena or processes."* Finally, *"descriptive research works on factual realities, and its fundamental characteristic is to present a correct interpretation"* (Cisternas, 2007).

3. 2. 1. Case study

This is also a case study, as this investigation is focused on a particular educational context that is the English classroom within the context of Liceo Agrícola Chillán. A case study method has been selected because *"it provides a unique example of real people in real situations. Case studies can penetrate situations in ways that are not always susceptible to numerical analysis."* (Cohen, 2000: 181).

It is portrayed that *"contexts are unique and dynamic; hence case studies investigate and report the complex dynamic and unfolding interactions of events, human relationships and other factors in a unique instance."* (Cohen, 2000: 181).

The purpose of this methodology is *"to portray, analyse and interpret the uniqueness of real individuals and situations through accessible accounts."* (Cohen, 2000: 79). It is also mentioned that the case study focuses on catching *"the complexity and situatedness of behaviour (...), as well as, to contribute to*

action and intervention, (...) to present and represent reality – to give a sense of ‘being there’.” (Cohen, 2000:79). The principal focus of a case study is to analyse *“individuals and local situations, unique instants and a single case”* and in terms of this investigation, in a single group, a community and an organization.

Thus, the case of this investigation is:

(a) An evaluation in the incorporation of the IWB in the teacher-researcher practice.

(b) The students and teacher of English’s perception about the contribution of the IWB in the teaching and learning process of English as a foreign language.

3. 2. 2. Action research

This research also uses some elements of **action research** because in order to evaluate the incorporation of the IWB into the teaching practice, this research used some elements of the action research methodology, in which the practices of the teacher-researcher are analyzed and mapped by using two theoretical models, namely “Marco para la Buena Enseñanza” and “Estándares TIC en la Formación Docente”.

The concept of action research was conceived by Kurt Lewin, a social psychologist. Lewin represents action research as a basic cycle of activities consisting on **identifying a general idea, recognizing the situation, making a general plan, developing the first phase of the action, implementing it, evaluating the action and checking the general plan** (Elliot, 2005: 88). During

this investigation at Liceo Agrícola Chillán, the activities mentioned above will be developed following the next steps:

- 1. Identifying a general idea:** An IWB was introduced at Liceo Agrícola Chillán. This has not been used by teachers, possibly, because they do not know how to integrate it into their teaching practice. An opportunity to start using the IWB was due to the fact that a teacher-investigator had the chance to do his professional practice at that school, so that it was decided to plan a didactic intervention including the IWB as an element of the teaching practice, seeking for an evaluation about the effectiveness and contribution of its use within the English as a foreign language subject.
- 2. Recognizing the situation:** When incorporating the IWB in the planning of a teaching unit, it could be stated that it may bring some benefits both for teachers and students, in the case of the former, they can prepare activities that incorporate the use of this technological means in the classroom to enhance students' motivation and willingness to work. In the case of students, they can participate in a more didactic and active way in the classroom being responsible for their own learning. Apart from that, there would be a better interaction between teacher and students.
- 3. Making a general plan:** The general plan has been designed, as it can be seen on the appendixes. During this term, the general objectives for group 1 (1st year students of secondary school) were expressing daily activities, actions that are happening at the moment of speaking and past activities;

these were complemented with vocabulary related to agriculture (contextualized to the setting), daily activities, days of the week and months of the year. On the other hand, the objectives for Group 2 (4th year students of secondary school) were recognizing and differentiating common and proper nouns, reporting what other person says and describing and comparing places, people and objects.

- 4. Developing the first phase of action:** The contents were presented using the IWB to both groups in which the teacher- investigator provided examples and mentioned what the objective of each class was. These classes were observed from different perspectives as video recordings, observation and peer- evaluation after each class, the research group met to analyze the class, provided and gave opinions about what could have been changed in future lessons in order to improve the teaching practice and the use of the IWB.

- 5. Implementing the first step of action:** Both groups of students confessed that they had never worked and manipulated the IWB before (as mentioned in the focus groups) so as it was the first time for all of them to have this technological device in the classroom. During the classes and after finishing them, it was necessary to have in mind that the implementation of the IWB, the use and the planning of this resource, take time and dedication to discover all the properties and characteristics that the IWB can provide, as well as the impact that it may cause on students' interests and motivation. This exercise allowed the investigators to develop better teaching

techniques to supervise and monitoring class working using the IWB inside the classroom.

- 6. Evaluating the action:** The evaluation of each class consisted on listing down all positive aspects that a peer-researcher teacher and the guide teacher could mention, as well as some points, methodologies and strategies could be changed in future lessons in terms of incorporating the IWB in the presentation of contents, practice of activities and evaluation.
- 7. Checking the general plan:** The general plan was checked after each lesson under the supervision of the teacher of the subject. According to that, changes were introduced to the way activities were presented to the students, the methodology used and the kind of assessment that the teacher had to prepare.

3. 2. 3. Interviews analysis methodology

Interviews elaboration

Interviews were held through opened questions which were elaborated concerning how each participant could contribute in the implementation and use of the IWB, so that the school's principal and the teacher of English were the precise people who needed to be interviewed to extract their viewpoints concerning all the aspects that embrace the IWB.

3. 3. Unity of analysis

The unit of analysis used in this research is the teaching practices implemented in the English classroom within the context of Liceo Agrícola Chillán. The subjects of study are the teacher-researcher, the 1st and 4th grade students and the teacher of English.

3. 4. Study subjects

The subjects of study provide core information to our investigation as they actively participate in the lessons observed. An important point is that being a qualitative research, our sample is small. In our research, we focus on the following estates: the students and the teacher-researcher. The reason to investigate these subjects is due to the nature of educational resource that the interactive board has, being a principal tool in the classroom.

A sample of eight students from first and fourth secondary grades, considering that they belong to different groups of academic performance, will be used to take a combined sample and to compare students with different competencies and skills in the English language. Besides, the teacher of English was interviewed, as she was present in the classes in which the IWB was incorporated (see appendix 6). In addition, the school principal was also interviewed in order to obtain additional information about ICT policies and practices related to the implementation of the IWB (see appendix 5).

3. 5. School description

The school Liceo Agrícola Chillán is located in a rural area twelve kilometers from the city to the North-East by Cato road. It is partly supported by the Ministry of Education (public funds) and the Codesser Corporation (*Corporación de Desarrollo Social del Sector Rural*) which supports other schools along the country as well.

The school receives heterogeneous students from all backgrounds; especially those from low cultural and economical situations; it implies that the majority of parents did not finish formal education and the family income reaches no more than \$190.000 monthly. It is a secondary school which receives students of the four levels of our educational system (NM1-NM4). In particular, there are ten classes; two groups in first level made up by 38 and 42 students respectively, three groups in the second level, two groups in the third and three in the fourth year.

Referring to the physical setting of this school, it can be mentioned that the classrooms are big enough to receive large-size groups of students, equipped with excellent furniture that facilitates and provides comfort to the students. Moreover, two classrooms are equipped with interactive white boards (IWB) and they are currently being used by the teacher of the English subject as a foreign language. This technological tool provides both the teacher and students the possibility to use this board to contribute in the teaching practice. At the same time, there are six laptops and five projectors which may be used by any teacher at the school.

The school possesses an equipped computer laboratory having thirty-four computers with internet and printers available for all students. Besides, there is a

library, a science laboratory, a football field, dormitories for those students who stay in the school during the week and a big cafeteria in which all students are given three meals a day.

3. 6. Instruments for the collection of information

For this research, three instruments will be used to collect relevant and useful information to answer our questions and objectives. *“There are three major methods of collecting research data: asking questions (and listening intently to the answers), observing events (and noting carefully what happens) and reading documents”* (Bassegy, 1999: 81).

3. 6. 1. The interview

The first is the **interview** (a semi-structured one); a conversation guided by the researchers, in which information is extracted directly from the estates selected. The reason why we believe in this instrument, is because having a field of different subjects, we can clarify each one of the participants' personal effects in the use of the IWB. Moreover, being a semi-structured interview, it allows us to modify and adapt our questions according to the information developed during our investigation.

The subjects who are going to be interviewed are the estates mentioned above; these are the school Principal and the teacher of English language subject.

3. 6. 2. The focus group

This technique will be also used, as the perception of the main participants (students) inside a classroom is important, so we can have the opinions of more than one student in one single meeting. This allows the investigators to have a social discussed perception of pupils, which is a difference with an interview, in which only a personal opinion can be obtained.

There will be sixteen students, selected from two different classes according to their academic performance, to conduct a focus group, a technique of qualitative research itself, as this trial used for *"purposeful selection of samples participants in view of the needs (...)"* (Mella, 2003: 179) of our project and because *"during the discussions, one can learn a lot about the range of experiences and opinions in the group"* (Mella, 2003: 181).

3. 6. 3. Video recordings

The third means of gathering information is the **classroom observation** through video recordings: This is a main part of this research (represented and shown by self reflections, quoted by the investigators), as it is in the classroom where the evidence if the IWB shows a real contribution or not on students' learning and motivation. A passive or non-participant observation will be performed, as it is considered inappropriate to interfere in a class. The goal would be to present at least four classes as well as to find real and natural actions of teachers and the students' reaction. This observation will be continued as such, *"the researcher looks at every instant of the event in question. Obviously, this type of strategy is*

reserved for short-term events or events which by their nature require that they be seen in its entirety" (Mella, 2003: 135-136).

In addition, the literature review and guidelines that have been developed, could be very useful for obtaining information and to review educational experiences the teacher-investigator had at Liceo Agrícola Chillán. That information meets one of the specific objectives of designing a teaching guideline for the incorporation of the IWB in the teaching of English as a foreign language.

3. 7. Analysis of the teaching practices

The way the classes were analyzed was through two major categories: The "*Marco para la Buena Enseñanza*" (*Good teaching practice frame*) and "*Competencias TIC en la profesión docente*" (*ICT competences in the teaching practice*), which are defined to get a better understanding of what each one of them implies. In addition, two other criteria named "*Students*" and "*Display*" were added, as shown in table 1.

Table 1

<i>Marco para la Buena Enseñanza (Good teaching practice frame)</i>		Definition
(Domain A) Teaching preparation	CRITERION A.1: Teacher domains the contents of their discipline and the national curriculum.	Teacher can answer student's questions or confront problems with security, as they know the terminology and specific matters of their subject according to the national educational project.
	CRITERION A.2: Teacher knows the characteristics, knowledge and experiences of their students.	Teacher knows the social background of their students, as well as all the contents the pupils have seen before.

<p>CRITERION A.3: Teacher domains the didactic of the subject matter.</p>	<p>Teacher knows techniques to make students learn in different ways according to the necessities present.</p>
<p>CRITERION A.4: Teacher organizes the objectives and contents accordingly to the curriculum and the students' particularities.</p>	<p>Teacher plans classes in advance according to the national educational project (curriculum) and the students own characteristics.</p>
<p>CRITERION A.5: Strategies for evaluation are coherent to the subject the teacher works with and with the curriculum.</p>	<p>Teacher evaluates what they teach, using clear instruments according to the national curriculum.</p>

<p>(Domain B) Creation of a propitious class atmosphere.</p>	<p>CRITERION B.1: Teacher establishes an atmosphere of good relations in the classroom, equality, confidence, solidarity and respect.</p>	<p>Teacher can manage the whole class, giving good advices to their students to promote values (such as respect, solidarity, etc.).</p>
	<p>CRITERION B.2: Teacher shows high expectations about the possibilities of learning and development of all their students.</p>	<p>Teacher is optimistic about their student's capacity to achieve the learning objectives.</p>
	<p>CRITERION B.3: Teacher establishes rules for the classroom interaction.</p>	<p>There are rules that have to be followed inside the classroom by the students, in order to promote good atmosphere and warranty a good teaching-learning process.</p>

	<p>CRITERION B.4: Teacher establishes an organized work atmosphere and manages spaces and resources according to the learning objectives.</p>	<p>Teacher knows classroom's arrangements and uses resources that seek a learning objective.</p>
<p>(Domain C) Teaching for the learning of all students</p>	<p>CRITERION C.1: Teacher communicates the learning objectives in a clear and precise way.</p>	<p>Before starting the class, the teacher expresses what the students are going to learn during the lesson.</p>
	<p>CRITERION C.2: Teaching strategies are a challenge, structured and contribute to a lifelong learning for students.</p>	<p>The teacher can achieve student's lifelong learning by using methodologies that are understandable for students.</p>

<p>CRITERION C.3: Class content is developed in a rigorous way and it is understood by all students.</p>	<p>Teachers have the capacity to have all students understand what is being taught and ensures that the contents are completely studied.</p>
<p>CRITERION C.4: Teacher optimizes the class time budget.</p>	<p>The time budget for a lesson is used accordingly to students' needs, trying to make the most of it.</p>
<p>CRITERION C.5: Teacher promotes the developing of thinking.</p>	<p>The teacher has students think about and solve the exercises on their own, according their level of proficiency.</p>

		CRITERION C.6: Teacher evaluates and monitors the comprehension and internalization of the contents by the students.	Teacher monitors their students' production and progress, seeking for having all of them understand what has been presented.
(Domain Professional responsibilities	D)	CRITERION D.1: Teacher constantly reflects on their practice.	Teacher thinks about their strengths and weaknesses when teaching to improve their practice.
		CRITERION D.2: Teacher builds professional relations with their colleagues.	Teacher shares materials, ideas, strategies, etc. with other educators in their educational community, in order to know better their reality.
		CRITERION D.3: Teacher assumes the responsibilities in the counseling of their students.	Teacher empathizes with their students.

<p>CRITERION D.4: Teacher tries to increase collaboration and respect in the relation between student's parents and/or tutors.</p>	<p>Teachers have a fluent and clear communication with the parents or tutors of their students, allowing the educators to know the background of pupils, as well as developing teaching strategies outside the classroom.</p>
<p>CRITERION D.5: Teacher manages updated information about their subject, the educational system and current policies on education.</p>	<p>Teacher is constantly getting information about new ways of teaching and methodologies.</p>

ICT competences in the teaching practice		Definition
(I) Pedagogical dimension	1. 1. Teacher knows the implications to use technologies in education and the possibilities to use them in their subject.	Teacher tries to get the best from the use of technologies in the classroom in order to achieve learning objectives.
	1. 2. Teacher uses ICT in the planning of the teaching-learning process.	Teacher incorporates activities that can be solved through the use of ICT resources.
	1. 3. Teacher incorporates the use of ICT in the execution of the teaching-learning process, according to the students, schools and community's characteristics.	Teacher adapts and contextualizes ICT resources according to students' needs and their settings.

	<p>1. 4. Teacher elaborates mechanisms and systems of communication and control of the teaching-learning process while using ICT.</p>	<p>Teacher monitors students' performance using ICT resources and also has students collaborate in checking each other performance.</p>
	<p>1. 5. Teacher evaluates the obtained results in the design, implementation and use of ICT for the improvement of leaning and the development of cognitive abilities of students.</p>	<p>Teacher improves their use of ICT resources class by class.</p>
<p>(II) Technical dimension</p>	<p>2. 1. Teacher manages concepts and basic functions related to ICT and the use of personal computers.</p>	<p>Teacher can manage common problems when working with technological devices and, at the same time, can use them in an appropriate way.</p>

<p>2. 2. Teacher uses productive tools (word processor, spread sheets, presentation software, etc.) to generate a diversity of documents.</p>	<p>Teacher uses offimatic software in order to manage personal data and organize classes.</p>
<p>2. 3. Teacher knows and uses the virtual classroom to enhance the teaching-learning process, the process of communication and the management of documents efficiently.</p>	<p>Teacher uses educational online platforms to interact with the students outside the classroom, as well as to share additional material.</p>
<p>2. 4. Teacher knows and uses author tools of virtual content to work with their students.</p>	<p>Teacher has the disposition to work with new not well-known tools and software, trying to discover unique characteristics of these resources to work in class.</p>

<p>2. 5. Teacher knows and uses mass media resources in their subjects, integrating the use of ICT transversally along the curriculum.</p>	<p>Teacher can use mass media tools such as social networks and online newspapers in different subjects.</p>
<p>2. 6. Teacher uses technological tools that maximize the learning of their students, facilitating superior thinking exercises.</p>	<p>Teacher uses all resources that are at hand in the school to present activities to students.</p>
<p>2. 7. Teacher domains synchronic and asynchronous tools of communication, as well as a language that facilitates a pertinent and well developed communication, according to the context of their students and families.</p>	<p>Teacher uses an accurate language according to their students' characteristics.</p>

2. 7. 1. (added) Students

(This has been an added category that emerged during this investigation). Students may show difficulties when manipulating the interactive whiteboard as the elements such as the electronic pens need some training to be used.

3. 8. Focus groups and interviews categories' definitions

The following list includes the concepts that were used to analyze the interviews and the focus groups in this research:

Meaningful learning: It leads to the creation of knowledge structures by relating new information and ideas of the student.

Learning by doing: the way in which learning process is produced by application of content through the practice of each student.

Collective learning: learning that is acquired through the practice of teachers and students.

Interaction: the relation or effect that someone or something produces in someone or something else.

Cooperation: the fact of doing something together or of working together towards a shared aim. In this case the attitude of helping a person to reach the class objective by explaining the content to a classmate.

Teacher-Student: A process that is influenced by multiple factors, among which we include qualitative processes and interaction through the relationship that both actors have as a way of relationship.

Student-IWB: learner's interaction with IWB through activities made with this tool.

Motivation: the reason why somebody does something or behaves in a particular way. Provision caused by internal or external agent that stimulates a reaction on

an individual, and which is biased to an activity that will be rewarded by the motivator.

Pedagogical hours: EFL Hours in our educational system are conditioned by the Ministry of Education and Private schools mainly, being 2 to 3 periods of 45 minutes each in this subject.

Innovation: the introduction of new things, ideas or ways of doing something , usually by creating new resources and materials for students' motivation, by gathering pedagogical practice and the use of ICT in lesson planning.

Attributes: qualities and properties that are being provided by IWB which make it suitable for being used as a technological teaching resource.

Optimize: to make something as good as it can be or use something in the best possible way. Saving time for the preparation and implementation of activities during the class, because they are previously done, and the time saved is used to make students practice the contents with the IWB activities.

Technical Management: Challenges and technical issues which are very difficult to handle by the students. In this category, it can be mentioned: Management of pencils, icons and mobility of objects.

Interactivity: If one thing interacts with another, in this case, students with the IWB or the teacher with the students, both have an effect on each other that allows information to be passed continuously and in both directions between a computer and the person who uses it in most of the cases.

Higher Education: Learning situation in which students could manipulate the IWB if they continue studying, in which his previous experience using this board, could help them in the management of this tool.

Mainstream: it is the supported teaching practice, in which the students can have the possibility to use new pedagogical resources, as the IWB, not just in English subject, but also, in some others, as a changing way of learning.

Performance: learning level expressed in scores that quantify the qualitative variable.

Previous experience: the knowledge and skill that you have gained through doing something for a period of time; the process of gaining this.

Demonstration: an act of showing or explaining how something works or is done.

Workshops: a period of discussion and practical work on a particular subject, in which a group of people share their knowledge and experience.

Didactics: the way in which teachers present the contents and also how they can evaluate the contents learnt by the students.

Routinely: something done in a particular way always, and that may become boring after a period of time. In this case, the way and materials used in classes, that were overused during a long term.

Innovative: introducing new ways and method of doing something in a more dynamic and funny way.

Classroom environment: environment generated by the teacher and the students inside the classroom, defined also by external agents that can influence the behaviour of people inside the classroom too.

Proper Classroom environment: A good environment generated by the teacher and the students inside the classroom, is helpful for the learning process.

Inappropriate Classroom environment: a negative environment generated by the teacher and the students inside the classroom, in which students and teacher cannot complete the assessments and activities in a good way .

3. 9. Video analysis methodology

Recording

Classes using the IWB were recorded digitally using domestic devices.

Analysis

Video recordings for each class were analyzed by using the software for qualitative analysis ATLAS.ti 5.2, that is defined as:

"(...) a powerful workbench for the qualitative analysis of large bodies of textual, graphical, audio, and video data. It offers a variety of tools for accomplishing the tasks associated with any systematic approach to unstructured data, e.g., data that cannot be meaningfully analyzed by formal, statistical approaches" (ATLAS.ti's online help description).

Each video was studied by intervals of time. Each interval was classified into one of the different criteria used for the analysis, according to the behavior, nature or personality developed by the teacher and/or students during the class. ATLAS.ti gave a code composed by numbers (i. e. "14:3") or "quotation code" for each interval, for differentiating from other same intervals that were classified into different criteria. For each interval, comments were added, concerning why a criterion was observed or not.

3. 10. General analysis and results according to the study made on ATLAS.ti

After analyzing the classes of the groups using the IWB, focusing on ICT standards projected by the Ministry of Education (*Competencias TIC*), as in the near future, we will need teachers that can incorporate searching and processing information techniques linked to learning goals that can strength these abilities in their students, enriching the potential of the curriculum (Ministerio de Educación (Chile), 2007: 5), the *Marco para la Buena Enseñanza* and an emerged criterion named *Uso de los recursos TIC* as the displacement of the resources was an important factor through the work with the IWB, it can be concluded that aspects that were repeatedly observed were the following on the groups we worked with:

The videos are analyzed using three criteria: Present – Partially present– No present.

The ones which are categorized as *not observed*, means that they were not explicitly observed in the video recordings we analyzed, but they can be implicitly observed as, for example, *Criterio A: Preparación de la Enseñanza*, implies that

the teacher has to plan and prepare the class in advanced before entering the classroom.

Chapter IV: Analysis and interpretation of data

4. 1. Introduction

The following data is the result of the analysis of the recorded classes both groups in which comments are added and a final countdown is presented to show, in percentage, how often a criterion was observed in the classes with Group 1 (see tables 2, 3 and 4) and Group 2 (see tables 5, 6 and 7).

Through the recording of videos, investigators of this research (including the teacher-researcher) analyzed the classes in order to improve and follow the action research cycle (see 3. 2. 2.), which aimed to improve the teaching practice, the kind of exercises and the use of the IWB in the classroom. Each comment begins with a number and a title (i. e. 11:3 clase 1 con 1 a primer semestre), which is the filename of the video analyzed in ATLAS.ti, while the number indicates the fragment of the video that shows the present criteria as it is classified.

4. 2. Group 1 analysis

Table 2: Analysis and comments of recordings using ATLAS.ti.

“No comments” means that the criterion was not present in the video analysis since through the recordings it cannot be demonstrated what the criterion implies.

<i>Marco para la Buena Enseñanza (Good teaching practice frame)</i>		Comments, analyses and/or notes per class
(Domain A) Teaching preparation	CRITERION A.1: Teacher domains the contents of their discipline and the national curriculum.	No comments.

<p>CRITERION A.2: Teacher knows the characteristics, knowledge and experiences of their students.</p>	<p>No comments.</p>
<p>CRITERION A.3: Teacher domains the didactic of the subject matter.</p>	<p>14:3 Junio 30 mm: PRESENT: the teacher uses repetition strategies to practice the content studied in class.</p> <p>14:6 Junio 30 mm: PRESENT: the teacher uses repetition strategies to practice the content studied in class.</p>
<p>CRITERION A.4: Teacher organizes the objectives and contents accordingly to the curriculum and the students' particularities.</p>	<p>No comments.</p>

	<p>CRITERION A.5: Strategies for evaluation are coherent to the subject the teacher works with and with the curriculum.</p>	<p>No comments.</p>
<p>(Domain B) Creation of a propitious class atmosphere.</p>	<p>CRITERION B.1: Teacher establishes an atmosphere of good relations in the classroom, equality, confidence, solidarity and respect.</p>	<p>11: 4 clase 1 con 1 a primer semestre: PRESENT</p>
	<p>CRITERION B.2: Teacher shows high expectations about the possibilities of learning and development of all their</p>	<p>11: 8 clase 1 con 1 a a primer semestre: PRESENT</p>

	students.	
	<p>CRITERION B.3: Teacher establishes rules for the classroom interaction.</p>	<p>11:2 clase 1 con 1 a primer semestre: PRESENT: The Teacher gives time to complete class activities.</p> <p>11:8 clase 1 con 1 a primer semestre: PRESENT: Students participate solving the activities while the teacher monitors their production.</p> <p>14:3 Junio 30 mm: PRESENT: Students listen to the teacher while he is providing examples and he has them write the examples on their notebooks.</p> <p>14:4 Junio 30 mm: PRESENT: Students participate and the teacher uses didactic strategies to have students learn.</p>
	<p>CRITERION B.4: Teacher</p>	<p>11:8 clase 1 con 1 a primer semestre: PRESENT: Students solve</p>

	<p>establishes an organized work atmosphere and manages spaces and resources according to the learning objectives.</p>	<p>the exercises individually in an organized and quiet way reaching the objective.</p> <p>12:2 junio 23 mm: PRESENT: Students solve the exercises and demonstrate participation and work organization.</p> <p>13:2 junio 25 mm: PRESENT: Students work and complete the given exercises; the head teacher helps the students to solve them.</p> <p>13:4 junio 25 mm: PRESENT: Students work in groups and use stationary like scissors and paper to complete the given task in an organized way.</p> <p>14:3 Junio 30 mm: PRESENT: Students participate in a repetition activity in an organized way.</p>
(Domain C) Teaching	CRITERION C.1: Teacher	11.2 clase 1 con 1 a primer semestre: PRESENT: The teacher

for the learning of all students	communicates the learning objectives in a clear and precise way.	provides examples to have students understand the content and to have them solve the activities. 13.1 junio 25 mm: PRESENT: The teacher provides examples to show how the activity has to be solved.
	CRITERION C.2: Teaching strategies are a challenge, structured and contribute to a lifelong learning for students.	11.2 clase 1 con 1a primer semestre: PRESENT: The activity is challenging and requires students identify and infer the complete meaning of each sentence.
	CRITERION C.3: Class content is developed in a rigorous way and it is understood by all students.	14:3 Junio 30 mm: PRESENT: The satisfactory answer given by students when repeating the studied content shows the fully comprehension and the rigorous way it has been studied.

<p>CRITERION C.4: Teacher optimizes the class time budget.</p>	<p>11:2 clase 1 con 1a primer semestre: PRESENT: The teacher optimizes the class budget and the objective if the class is presented in a reasonable way.</p> <p>11:5 clase 1 con 1a primer semestre: PRESENT: The teacher provides examples to have students solve the exercises in a given time.</p>
<p>CRITERION C.5: Teacher promotes the developing of thinking.</p>	<p>11:5 clase 1 con 1 a primer semestre: PRESENT: At the beginning of the class the teacher provides examples and explains the content, and then the teacher has students complete a given exercise on their notebook and afterwards in the IWB.</p> <p>13:2 junio 25 mm: PRESENT: It is observed that students solve activities using what they have learnt as well as visual and written language.</p>

		<p>13:3 junio 25 mm: PRESENT: One of the students shows his work and expresses the ideas that he has registered during an activity using cutout and ideas that will be exemplified using the IWB.</p> <p>13:4 junio 25 mm: PRESENT: It is observed that all students complete a table writing the activities that they do during the week. The challenge of choosing the right pictures and writing in L2, is achieved.</p> <p>14:4 Junio 30 mm: PRESENT: the students show their confidence when answering in a correct way what the teacher asks.</p>
	<p>CRITERION C.6: Teacher evaluates and monitors the comprehension and</p>	<p>11:3 clase 1 con 1 a primer semestre: PRESENT: The teacher uses the IWB to check the comprehension of contents by</p>

	<p>internalization of the contents by the students.</p>	<p>students (by completing a table of exercises in group).</p> <p>11:4 clase 1 con 1 a primer semestre: PRESENT: The table is completed as a class checking, if the answers that the students wrote on their notebooks reached the objectives.</p> <p>11:7 clase 1 con 1 a primer semestre: PRESENT: It is observed, how, in a perfect silence, the students completed the activity while the teacher checks, student by student, the progress of each one.</p> <p>11:8 clase 1 con 1 a primer semestre: PRESENT: The teacher invites some of the students to give their own answers sing the IWB performing in that way, the corresponding evaluation.</p> <p>13:3 junio 25 mm: PRESENT: The guide teacher evaluates the work of one student. This student says his answers in an oral way</p>
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		<p>and complementing the work with images.</p> <p>13:4 junio 25 mm: PRESENT: The teacher checks student by student the development of the activity.</p> <p>14:2 Junio 30 mm: PRESENT: The students mark their answers in the IWB, checking their class work.</p> <p>14:3 Junio 30 mm: PRESENT: Together, teacher and students check the progress of the exercises that were written in the IWB.</p> <p>It could be observed that the teacher over the classes monitored most of the students while they were solving given tasks in different ways, such as checking tasks on the IWB as a class or checking individual work.</p>
<p>(Domain Professional</p>	<p>D) CRITERION D.1: Teacher constantly reflects on their</p>	<p>No comments.</p>

responsibilities	practice.	
	CRITERION D.2: Teacher builds professional relations with their colleagues.	No comments.
	CRITERION D.3: Teacher assumes the responsibilities in the counseling of their students.	No comments.
	CRITERION D.4: Teacher tries to increase collaboration and respect in the relation between student's parents and/or tutors.	No comments.

	<p>CRITERION D.5: Teacher manages updated information about their subject, the educational system and current policies on education.</p>	<p>No comments.</p>
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ICT competences in the teaching practice		Comments, analyses and/or notes per class
<p>(I) Pedagogical dimension</p>	<p>1. 1. Teacher knows what implies to use technologies in education and the possibilities to use them in their subject.</p>	<p>14:1 junio 30 mm: PRESENT: The teacher provides clear instructions about the use of the touch screen keyboard, providing a demonstration and showing how to manipulate the IWB.</p> <p>14:2 junio 30 mm: PRESENT: The students help a classmate that</p>

	<p>is using the IWB that enhanced students' collaboration.</p>
<p>1. 2. Teacher uses ICT in the planning of the teaching-learning process.</p>	<p>14:1 junio 30 mm: PRESENT: It is clearly seen that there was a previous planning as it demonstrated in the use of the IWB with a presentation.</p> <p>14:2 junio 30 mm: PRESENT: It is clearly seen that there was a previous planning as it demonstrated in the use of the IWB with a presentation.</p>
<p>1. 3. Teacher incorporates the use of ICT in the execution of the teaching-learning process, according to the students, schools and community's</p>	<p>11:2 clase 1 con 1 a primer semestre: PRESENT: The content that was presented using the IWB is in synchrony with the students' characteristics: Verbs related to daily routines are used like sleep, read, etc. which are familiar to everybody.</p>

characteristics.

11:3 clase 1 con 1 a primer semestre: PRESENT: The exercise projected on the IWB does not make students get confused. On the other hand, it is followed by all the class in a satisfactory way.

11:4 clase 1 con 1 a primer semestre: PRESENT: The exercise projected on the IWB does not make students get confused. On the other hand, it is followed by all the class in a satisfactory way.

11:5 clase 1 con 1 a primer semestre: PRESENT: The constant incorporation in the use of the IWB resource is being appreciated and the activities presented are familiar for the students. That is why there is almost a complete participation of the class.

11:8 clase 1 con 1 a primer semestre: PRESENT: The use of the IWB is linked to check the activities presented. Some students can use this resource to demonstrate how they solved the activity to their classmates.

	<p>14:3 junio 23 mm: PRESENT: The IWB is used by the students to reflect what they did in previous handouts.</p> <p>14:1 junio 30 mm: PRESENT: The students show their knowledge through the translation of sentences besides they identify the content using the IWB to complete the puzzle using the digital touch screen keyboard available.</p> <p>14:2 junio 30 mm: PRESENT: It is satisfactory for the students to write on the IWB using their hands. Besides, they have overcome some technical difficulties they had at the beginning.</p> <p>14:23 junio 30 mm: PRESENT: The resource IWB is used when checking the given exercises.</p>
<p>1. 4. Teacher elaborates mechanisms and systems of</p>	<p>11:2 clase 1 con 1 a primer semestre: PRESENT: During the class the teacher gives clear instructions to have a good</p>

<p>communication and control of the teaching-learning process while using ICT.</p>	<p>evaluation of the presented exercises in order to achieve the teaching-learning process.</p> <p>11:3 clase 1 con 1 a primer semestre: PRESENT: IWB is used to keep learning the present continuous tense.</p> <p>11:4 clase 1 con 1 a primer semestre: PRESENT: Through a repetition technique, students can perceive their own progress while repeating.</p> <p>11:5 clase 1 con 1 a primer semestre: PRESENT: Students complete an activity which is checked using the IWB. The interaction teacher-student is useful when checking exercises through repetition.</p> <p>11:8 clase 1 con 1 a primer semestre: PRESENT: The teacher monitors the students, checking their progress in showing the</p>
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activities. One student is required to check them using the IWB.

12:3 junio 23 mm: PRESENT: Using the IWB the students pay attention to check the activities presented.

13:5 junio 25 mm: PRESENT: The activity is checked using the IWB which calls the students attention who take notes of the correction and answers.

14:1 Junio 30 mm: PRESENT: The IWB is used to present and solve the activities. A puzzle is solved by the students writing their answers on the IWB. In that way, they monitor all together the progress of the class.

14:2 Junio 30 mm: PRESENT: It is observed a complete participation of chosen students in checking the presented activities. In that way, the monitoring process is performed by

		<p>teacher and students.</p> <p>14:3 Junio 30 mm: PRESENT: The control of the teaching learning process in the observed class is completed with the use of the IWB as using this resource to check and demonstrate the answers that the students were given.</p>
	<p>1. 5. Teacher evaluates the obtained results in the design, implementation and use of ICT for the improvement of learning and the development of cognitive abilities of students.</p>	<p>No comments.</p>
<p>(II) Technical dimension</p>	<p>2. 1. Teacher manages concepts and basic functions</p>	<p>No comments.</p>

<p>related to ICT and the use of personal computers.</p>	
<p>2. 2. Teacher uses productive tools (word processor, spread sheets, presentation software, etc.) to generate a diversity of documents.</p>	<p>11:3 clase 1 con 1 a primer semestre: PRESENT: A presentation software is used to generate a table that has to be completed with sentences in the present continuous tense.</p> <p>11:4 clase 1 con 1 a primer semestre: PRESENT: The presentation software is used to give examples provided by the teacher.</p> <p>11:5 clase 1 con 1 a primer semestre: PRESENT: A presentation software is used.</p> <p>11:8 clase 1 con 1 a primer semestre: PRESENT: A presentation software is used: The students solve an exercise that they wrote</p>

	<p>on their notebooks, writing their answers on the IWB.</p> <p>14:3 junio 30 mm: PRESENT: The use of the software of the IWB is presented to solve a given activity.</p> <p>14:4 junio 30 mm: The software is being used to check the activities already done.</p>
<p>2. 3. Teacher knows and uses the virtual classroom to enhance the teaching-learning process, the process of communication and the management of documents efficiently.</p>	<p>No comments.</p>
<p>2. 4. Teacher knows and uses</p>	<p>No comments.</p>

<p>author tools of virtual content to work with their students.</p>	
<p>2. 5. Teacher knows and uses mass media resources in their subjects, integrating the use of ICT transversally along the curriculum.</p>	<p>No comments.</p>
<p>2. 6. Teacher uses technological tools that maximize the learning of their students, facilitating superior thinking exercises.</p>	<p>Clase 1 con 1 a primer semestre: PRESENT: The IWB is used during the class facilitating the comprehension of the given exercise in which students complete a table in present continuous tense.</p> <p>Junio 23 mm: PRESENT: IWB is also used by students in a similar process seen in the previous class.</p>

	<p>Junio 25 mm: PRESENT: When exercises are checked, the IWB is used taking into account the properties of the board and also completing other kind of exercises like a puzzle.</p> <p>Junio 30 mm: PRESENT: The software of the IWB is used to solve some activities.</p>
<p>2. 7. Teacher domains synchronic and asynchronic tools of communication, as well as a language that facilitates a pertinent and well developed communication, according to the context of their students and families.</p>	<p>Present as seen on 2. 7. 1.</p>

	2. 7. 1. (added) Students	12:5 junio 23 mm: NOT PRESENT: A student needs to be helped by the teacher to use the IWB.
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Use of ICT resources	Display	11: 9 clase 1 con 1 a primer semestre: NOT PRESENT: The equipment used is not displayed adequately resulting in a difficult situation to teacher and students to move freely.
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Figure 1: Video analysis for Group 1

Figure 1 shows the complete analysis of the video recording for Group 1. Each box, called node, represents one criterion. As it can be seen, the illustration comprises the two main categories “*Marco para la Buena Enseñanza*” and “*Competencias TIC para la profesión docente*”. Finally, the numbers that appear between brackets on bottom right of each node show how many times the criterion was present throughout the analysis.

Please find figure 1 in the attached file *Figure 1.jpg*.

4. 2. 1. Conclusions for Group 1

According to the analysis conducted and the comments given in Table 2 for Group 1, it can be concluded that criterion B and C were the most present throughout the classes, as it could be observed that there was respect between the teacher and students, the class atmosphere was good for the pace of learning of the students and the active collaboration and participation of the students when helping a classmate and completing the tasks presented by the teacher. Besides, the teacher gave clear and precise instructions for completing the tasks and they were challenging for the students to seek their own willingness to learn. On the other side, criterion D was hardly perceived, as it refers to professional responsibilities that could not be explicitly seen on the video analysis, but it could be assumed that the teacher-investigator prepared his lessons and reflected about his practice. Table 3 shows in percentage how often a criterion was present during the classes with group one.

When analyzing the classes through videos under the *"Marco para la buena enseñanza"* proposed by the Ministry of education; throughout the analysis, it could be observed that the criterion A that refers to *"Preparación de la enseñanza"* ("teaching preparation") could not be observed directly in the classes, as the lessons were recorded. The previous planning and preparation that the teacher conducted, could not be observed, but it can be inferred that there was a preparation, choosing and selection of materials that the teacher did previously, as could be seen in the unit planning presentations and lesson plans revisited.

Good Teaching Practice Frame		Times presented	Percentage presented of the total in Group 1	ICT Competencies	Times presented	Percentage presented of the total in Group 1
Dominion A	Criterion A.3	3	8,57%			
Dominion B	Criterion B.1	1	2,86%			
Dominion B	Criterion B.2	1	2,86%	Pedagogical Dimension 1.1	2	4,65%
Dominion B	Criterion B.3	5	14,28%	Pedagogical Dimension 1.2	2	4,65%
Dominion B	Criterion B.4	6	17,14%	Pedagogical Dimension 1.3	9	20,93%
Dominion C	Criterion C.1	2	5,71%	Pedagogical Dimension 1.4	10	23,26%
Dominion C	Criterion C.2	1	2,86%	Technical Dimension 2.2	6	13,95%
Dominion C	Criterion C.3	1	2,86%	Technical Dimension 2.6	12	27,91%
Dominion C	Criterion C.4	2	5,71%	Technical Dimension 2.7	2	4,65%
Dominion C	Criterion C.5	5	14,28%		43	100
Dominion C	Criterion C.6	8	22,87%			
		35	100			

Table 3: Frequency of present criteria in the analyzed classes expressed in percentage in Group 1.

4. 3. Group 2 analysis

Table 4: Analysis and comments of recordings using ATLAS.ti.

“No comments” means that the criterion was not present in the video analysis since through the recordings it could not be demonstrated what the criterion implied.

In “ICT competences in the teaching practice” sections 2. 2., “Present” means that the use of the IWB was done by using its own software. This software is incorporated in the use of the IWB and permits teachers to prepare more dynamic presentations and allows an ideal use of the touch screen characteristic of the IWB, but at the same time, the software is very similar to common presentation software.

In “ICT competences in the teaching practice” sections 2. 6., “Present” means that through the observed classes the IWB was used as a facilitator tool in the teaching learning process and as a fundamental tool in the planning of the contents studied in classes.

<i>Marco para la Buena Enseñanza (Good teaching practice frame)</i>		Comments, analyses and/or notes per class
(Domain A) Teaching preparation	CRITERION A.1: Teacher domains the contents of their discipline and the national curriculum.	No comments.

<p>CRITERION A.2: Teacher knows the characteristics, knowledge and experiences of their students.</p>	<p>No comments.</p>
<p>CRITERION A.3: Teacher domains the didactic of the subject matter.</p>	<p>20:6 June 4 4A lachillan.wmv: PRESENT: Students repeat the presented exercises in order to identify the correct pronunciation of the words.</p> <p>20:7 June 4 4A lachillan.wmv: PRESENT: The teacher presents the contents and explains the differences.</p>
<p>CRITERION A.4: Teacher organizes the objectives and contents accordingly to the curriculum and the students' particularities.</p>	<p>No comments.</p>

	<p>CRITERION A.5: Strategies for evaluation are coherent to the subject the teacher works with and with the curriculum.</p>	<p>No comments.</p>
<p>(Domain B) Creation of a propitious class atmosphere.</p>	<p>CRITERION B.1: Teacher establishes an atmosphere of good relations in the classroom, equality, confidence, solidarity and respect.</p>	<p>20:2 June 4 4A Iachillan: PRESENT: The teacher explains the content while students listen and pay attention to what he says.</p> <p>20:4 June 4 4A Iachillan: PRESENT: Students answer the questions made by the teacher.</p> <p>20:6 June 4 4A Iachillan: PRESENT: Students pay attention and show their interest to the class.</p> <p>20:7 June 4 4A Iachillan: PRESENT: The classroom environment is adequate while the</p>

teacher is explaining the content.

21:1 junio 25 mm 4: PRESENT: while one student solves the activities the rest of the class watches and helps in the process of solving the exercises.

21:2 junio 25 mm 4: PRESENT: Students listen to the instructions and there is respect inside the classroom.

21:3 junio 25 mm 4: PRESENT: Students solve the activities.

21:4 junio 25 mm 4: PRESENT: Students solve the activities and there is respect inside the classroom.

<p>CRITERION B.2: Teacher shows high expectations about the possibilities of learning and development of all their students.</p>	<p>No comments.</p>
<p>CRITERION B.3: Teacher establishes rules for the classroom interaction.</p>	<p>20:1 June 4 4A Iachillan: PRESENT: Students are attentive to the presentation of contents while the teacher exemplifies the content.</p> <p>20:2 June 4 4A Iachillan: PRESENT: Students listen to the instructions in order to solve the presented exercise; when one student solves the activity in the IWB; his classmates observe and help with the correct answers.</p> <p>20:4 June 4 4A Iachillan: PRESENT: the activity is checked as a group in a participative</p>

and quiet way.

20:5 June 4 4A lachillan: PRESENT: One student goes to the IWB in order to solve an exercise while the rest of the class observes and helps to solve it correctly.

20:6 June 4 4A lachillan: PRESENT: Students participate actively in the identification of objects and the repetition exercise.

20:7 June 4 4A lachillan: PRESENT: In the content presentation students give their opinion about it in a respectful way and then they practice pronunciation of some words.

21:2 junio 25 mm 4.: PRESENT: Students listen

		<p>to the instructions for solving the given task.</p> <p>21:3 junio 25 mm 4.: PRESENT: Students solve the task while one of them solves it in the IWB for checking the learning process.</p> <p>21:4 junio 25 mm 4.: PRESENT: One student goes to the board for completing the given exercise while the rest of the class checks their answers.</p>
	<p>CRITERION B.4: Teacher establishes an organized work atmosphere and manages spaces and resources according to the learning objectives.</p>	<p>Throughout the classes, this group was characterized for behaving in an excellent way inside classroom due the interaction between the teacher and students. This criterion was observed eleven times.</p>

(Domain C) Teaching for the learning of all students	CRITERION C.1: Teacher communicates the learning objectives in a clear and precise way.	20:1 June 4 4A lachillan: PRESENT: The teacher exemplifies the content while students listen. 21: 2 junio 25 mm 4: PRESENT: The teacher explains the exercise to the students and gives the instructions.
	CRITERION C.2: Teaching strategies are a challenge, structured and contribute to a lifelong learning for students.	No comments.
	CRITERION C.3: Class content is developed in a rigorous way and it is understood by all students.	20:4 June 4 4A lachillan: PRESENT: Students, helped by the teacher, check the activity about nouns.

<p>CRITERION C.4: Teacher optimizes the class time budget.</p>	<p>No comments.</p>
<p>CRITERION C.5: Teacher promotes the developing of thinking.</p>	<p>20: 2 June 4 4A Iachillan: PRESENT: Students solve the activity presented in the IWB in which they have to move objects and categorized them.</p> <p>21:4 junio 25 mm 4: PRESENT: Students complete the exercise in which they have to report what the other person says.</p>
<p>CRITERION C.6: Teacher evaluates and monitors the comprehension and internalization of the contents by the students.</p>	<p>20:2 June 4 4A Iachillan: PRESENT: The teacher checks comprehension of the presented content through an activity.</p>

20:4 June 4 4A lachillan: PRESENT: The teacher checks comprehension and identification of the activity correcting together with the students the exercise previously done.

20:5 June 4 4A lachillan: PRESENT: The teacher asks the students about the meaning of the presented vocabulary.

20:6 June 4 4A lachillan: PRESENT: The teacher asks the meaning in Spanish of the presented vocabulary.

20:7 June 4 4A lachillan: PRESENT: The teacher asks the students about the meaning and definition of nouns.

21:3 junio 25 mm 4: PRESENT: The teacher

		<p>checks the comprehension of the content monitoring that the students do the activities.</p> <p>21:4 junio 25 mm 4: PRESENT: The teacher monitors the comprehension of the content throughout activities with the IWB.</p>
(Domain Professional responsibilities	D) CRITERION D.1: Teacher constantly reflects on their practice.	No comments.
	CRITERION D.2: Teacher builds professional relations with their colleagues.	No comments.
	CRITERION D.3: Teacher assumes the responsibilities in the counseling of their	No comments.

students.	
CRITERION D.4: Teacher tries to increase collaboration and respect in the relation between student's parents and/or tutors.	No comments.
CRITERION D.5: Teacher manages updated information about their subject, the educational system and current policies on education.	No comments.

ICT competences in the teaching practice		Comments, analyses and/or notes per class
(I) Pedagogical dimension	1. 1. Teacher knows what implies to use technologies in education and the possibilities to use them in their subject.	20:7 June 4 4a lachillan: PRESENT: The teacher uses the IWB to present the content and provide the examples, using moving objects and highlighted keywords.
	1. 2. Teacher uses ICT in the planning of the teaching-learning process.	20:1 june 4 4A lachillan: PRESENT: The teacher-investigator uses the IWB to present the content using tools that this ICT resource provides. 20:2 june 4 4A lachillan: PRESENT: The students solve an activity about identifying nouns on the IWB.

20:3 june 4 4A lachillan: PRESENT: The students check an activity with the teacher.

20:4 june 4 4A lachillan: PRESENT: The teacher uses a tool of highlighting and the dragging of objects to check an activity.

20:5 june 4 4A lachillan: PRESENT: The students use the IWB to solve an exercise in which they have to move objects to categorize them into columns.

20:6 june 4 4A lachillan: PRESENT: The teacher uses the IWB to present vocabulary, makes a repetition activity and practices repetition of words.

20:7 june 4 4A lachillan: PRESENT: The

	<p>teacher presents the content using the IWB.</p> <p>21:1 junio 25 mm 4: PRESENT: The teacher makes a dictation activity in which the students work on their own and then they check the answers on the board.</p> <p>21:2 junio 25 mm 4: PRESENT: The teacher uses the IWB to have students write and highlight keywords.</p>
<p>1. 3. Teacher incorporates the use of ICT in the execution of the teaching-learning process, according to the students, schools and community's characteristics.</p>	<p>20:2 June 4 4A lachillan: PRESENT: The IWB is used with material that is contextualized with the students' daily routine and other subjects.</p> <p>20:3 June 4 4A lachillan: PRESENT: The teacher uses ICT as a way to help his speech.</p>

20:4 June 4 4A lachillan: PRESENT: The IWB is used for checking the exercises in order to get students focused on the class. He also uses the characteristics that the IWB has in order to describe the content.

20:5 June 4 4A lachillan: PRESENT: The IWB is used to check exercises like the video analyzed before.

20:6 June 4 4A lachillan: PRESENT: The use of the IWB is satisfactory. The incorporation is demonstrated on the videos in which with the complete participation of the students using the IWB.

20:7 JUNIO 4 4a lachillan: PRESENT: The IWB

is immersed in the class, in which it is still a complement that captures the attention of the whole group helping in the comprehension of the contents, but having the own didactics characteristics of the English language in the teaching-learning process of L2.

21:2 junio 25 mm 4: PRESENT: A new activity is given from what was seen in the IWB.

21:3 junio 25 mm 4: PRESENT: The IWB is used in a dictation exercise. The participation of one student is observed, as well as the rest of the group helps him to complete the activity.

21:4 junio 25 mm 4: PRESENT: The integration of the IWB is demonstrated when one of the

		students comes to the board.
	<p>1. 4. Teacher elaborates mechanisms and systems of communication and control of the teaching-learning process while using ICT.</p>	<p>20:4 June 4 4A Iachillan: PRESENT: The IWB is used as a tool to monitor how a student is performing when solving the given exercises.</p> <p>20:6 June 4 4A Iachillan: PRESENT: As a group, students check how much they have learned.</p>
	<p>1. 5. Teacher evaluates the obtained results in the design, implementation and use of ICT for the improvement of leaning and the development of cognitive abilities of students.</p>	<p>20:5 June 4 4A Iachillan: PRESENT: The students have to think and answer questions about the contents.</p> <p>21:3 June 25 mm4: PRESENT: The teacher evaluates the writing and listening abilities in L2 using the IWB as a tool for checking and</p>

		<p>presenting results.</p> <p>21:4 June 25 mm4: PRESENT: Again, the teacher evaluates the writing and listening abilities in L2 using the IWB as a tool for checking and presenting results.</p>
<p>(II) Technical dimension</p>	<p>2. 1. Teacher manages concepts and basic functions related to ICT and the use of personal computers.</p>	<p>No comments.</p>
	<p>2. 2. Teacher uses productive tools (word processor, spread sheets, presentation software, etc.) to generate a diversity of documents.</p>	<p>20:7 June 4 4A lachillan: PRESENT</p> <p>21:1 junio 25 mm 4: PRESENT</p>
	<p>2. 3. Teacher knows and uses the virtual classroom to enhance the teaching-learning</p>	<p>No comments.</p>

<p>process, the process of communication and the management of documents efficiently.</p>	
<p>2. 4. Teacher knows and uses author tools of virtual content to work with their students.</p>	<p>No comments.</p>
<p>2. 5. Teacher knows and uses mass media resources in their subjects, integrating the use of ICT transversally along the curriculum.</p>	<p>No comments.</p>
<p>2. 6. Teacher uses technological tools that maximize the learning of their students, facilitating superior thinking exercises.</p>	<p>20:7 June 4 4A lachillan: PRESENT 21:1 junio 25 mm 4: PRESENT</p>
<p>2. 7. Teacher domains synchronic and asynchronous tools of communication, as well as a</p>	<p>No comments.</p>

	<p>language that facilitates a pertinent and well developed communication, according to the context of their students and families.</p>	
	<p>2. 7. 1. (added) Students</p>	<p>No comments.</p>

<p>Use of ICT resources</p>	<p>Display</p>	<p>No comments.</p>
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Figure 2: Video analysis for Group 2

Figure 2 shows the complete analysis of the video recording for Group 2. Each box, called node, represents one criterion. As it can be seen, the illustration comprises the two main categories “*Marco para la Buena Enseñanza*” and “*Competencias TIC para la profesión docente*”. Finally, the numbers that appear between brackets on bottom right of each node show how many times the criterion was present throughout the analysis.

Please find figure 2 in the attached file *Figure 2.jpg*.

4. 3. 1. Conclusions for Group 2

For this group it can be concluded that the most repeated criteria are (a) Technical dimension 2. 2., as, throughout the analyzed classes, it could be seen that the teacher presented contents using presentation software in the IWB. Besides, he uses these technological tools to have students work on different activities and tasks which allowed them to work on their own as well as collaborate to facilitate their learning process.

From the *Marco para la Buena Enseñanza (Good teaching practice frame)*, the criterion B. 4. was the most present, due to the fact that the interaction between teacher and students was excellent and in the videos it could be observed that the students always paid attention to the presentation of contents that the teacher provided. Linked to this criterion it was also repeatedly present B. 1., as the classroom atmosphere was good for teaching-learning purpose.

Similar to Group 1, criteria D and A were hardly perceived, as they refer to professional responsibilities and teaching preparation that could not be explicitly seen on the video analysis, but it could be assumed that the teacher-investigator prepared his lessons and reflected about his practice.

Good Teaching Practice Frame		Times presented	Percentage presented of the total in Group 2	ICT Competencies	Times presented	Percentage presented of the total in Group 2
<i>Dominion A</i>	<i>Criterion A.3</i>	2	3,85%			
<i>Dominion B</i>	<i>Criterion B.1</i>	8	15,38%			
<i>Dominion B</i>	<i>Criterion B.3</i>	9	17,31%	<i>Pedagogical Dimension 1.1</i>	11	19,30%
<i>Dominion B</i>	<i>Criterion B.4</i>	11	21,15%	<i>Pedagogical Dimension 1.2</i>	9	15,79%
<i>Dominion C</i>	<i>Criterion C.1</i>	2	3,85%	<i>Pedagogical Dimension 1.3</i>	10	17,54%
<i>Dominion C</i>	<i>Criterion C.3</i>	11	21,15%	<i>Pedagogical Dimension 1.4</i>	2	3,51%
<i>Dominion C</i>	<i>Criterion C.5</i>	2	3,85%	<i>Pedagogical Dimension 1.5</i>	3	5,26%
<i>Dominion C</i>	<i>Criterion C.6</i>	7	13,46%	<i>Technical Dimension 2.2</i>	11	19,30%
		52	100	<i>Technical Dimension 2.6</i>	11	19,30%
					57	100

Table 5: Frequency of present criteria in the analyzed classes expressed in percentage in Group 2.

4. 4. Summary of results in both groups

When analyzing the two groups as one, we can conclude that the most present category from *the “Marco para la Buena enseñanza”* is B. 4. This demonstrates that the atmosphere inside the classroom is essential for working with a technological device such as the IWB, but at the same time, when the relationship and the sense of respect between teacher and students is strong, this atmosphere is completely achievable. A second repeated criterion in both groups is 2. 6. from the *“Competencias TIC para la profesión docente”*, that is constantly present in the video analysis and planning, since the teacher uses presentations and the IWB to show new contents to the students. On the other hand, the less present criteria were domain C. 2. from the *“Marco para la Buena enseñanza”* and point 2. 7. From the *“Competencias TIC para la profesión docente”*, since the former cannot be explicitly observed and the latter is not linked to this research.

Good Teaching Practice Frame		Times presented	Percentage presented in the total	ICT Competencies	Times presented	Percentage presented in the total
<i>Dominion A</i>	<i>Criterion A.3</i>	5	5,75%			
<i>Dominion B</i>	<i>Criterion B.1</i>	9	10,34%	<i>Pedagogical Dimension 1.1</i>	13	13%
<i>Dominion B</i>	<i>Criterion B.2</i>	1	1,15%	<i>Pedagogical Dimension 1.2</i>	11	11%
<i>Dominion B</i>	<i>Criterion B.3</i>	14	16,09%	<i>Pedagogical Dimension 1.3</i>	19	19%
<i>Dominion B</i>	<i>Criterion B.4</i>	17	19,54%	<i>Pedagogical Dimension 1.4</i>	12	12%
<i>Dominion C</i>	<i>Criterion C.1</i>	4	4,60%	<i>Pedagogical Dimension 1.5</i>	3	3%
<i>Dominion C</i>	<i>Criterion C.2</i>	1	1,15%	<i>Technical Dimension 2.2</i>	17	17%
<i>Dominion C</i>	<i>Criterion C.3</i>	12	13,79%	<i>Technical Dimension 2.6</i>	23	23%
<i>Dominion C</i>	<i>Criterion C.4</i>	2	2,30%	<i>Technical Dimension 2.7</i>	2	2%
<i>Dominion C</i>	<i>Criterion C.5</i>	7	8,05%			
<i>Dominion C</i>	<i>Criterion C.6</i>	15	17,24%			
		87	100		100	100

Table 6: Frequency of present criteria in the analyzed classes expressed in percentage in both groups.

4. 5. Conclusions for general focus groups during the first term

1. Motivation

The extra motivation projected by the IWB is the combination of interaction, effects of colour and movements, which are part of the applications that this tool has. Students consider this tool, as they declare during the focus group, that, *"it is flashy, because the work with the whiteboard, colours are not the same,"*⁶ even more, they mentioned that, *"it is easier to learn, as my classmates said, and it makes classes funnier", "students here are more interested in this board and they are more motivated to learn in an easier way."*⁷ The fact that students enjoyed the lessons with the use of the IWB was very valuable, because they made a contrast, starting from the work they did in previous classes without IWB and which were performed with the IWB, *"more innovative because, before this experience the teachers only gave us worksheets and that was all, and now with the IWB, we can see the contents on the board",*⁸ adding that *"they were more attentive when using interactive whiteboard in comparison to other regular lessons."*⁹ The IWB used in English classes at this school generated a proper environment for the content and

⁶ "es súper llamativo trabajar así porque por ejemplo con la pizarra no se encuentran los mismos colores"

⁷ "es mucho más fácil aprender así como dicen mis compañeros y hace las clases más entretenidas", "acá los alumnos se interesan más por esta pizarra, están más motivados para poder aprender de una forma más fácil".

⁸ "mas innovadora porque antes igual como a mí nos pasaban una guía y eso era todo el cuento y ahora como con la PDI vemos en la pizarra."

⁹ "ponían más atención cuando se utilizaba la pizarra interactiva en comparación a las otras clases normales."

objectives for the class to be held, even more, the students changed their position of not wanting more hours of English to say that hours of this subject are not enough and they were really interested in continuing the class, *"we do not want that the class finishes because we are interested in it", "interest is higher on everyone in the room. For me, the only thing we want is that the class does not come to an end."*¹⁰

These results are mentioned by other researchers who have been interested by this new tool, and that are expressed by Professor Margareth Ruggieri who mention that *"Technology attracts the most attention when it's new"*(Ruggieri, 2005: 52). This happens when students or children in general are not accustomed to see and use new technology daily, and even teachers must have to work on this, in order to include these technologies on their planning.

BECTA's research mention some of the reasons why IWB produces this motivation on students, those are:

Their presentational capabilities – websites and video can be incorporated seamlessly in teaching

The high level of interaction – pupils enjoy interacting physically with the board, manipulating text and images

The capacity to present and discuss pupils' work – focusing on pupil-originated material helps keep the class on task and raises self-esteem.

¹⁰ "uno no quiere que termine la clase porque está interesado", "el interés es mayor en todos los que están en la sala. Porque uno, lo único que quiere es que no termine la clase."

Allowing pupils to use the whiteboards so they engage with learning materials is therefore vital in increasing motivation and learning gains. Studies report that motivational gains diminish as the whiteboards become more familiar, although pupils tend to view their educational impact more positively the more they are used. (BECTA, 2008: 27)

The IWB itself does not produce an effect of motivation, it depends on the way the teachers include this resource in their pedagogical practice, like using new materials, strategies, activities and as an essential point, the way in which the teacher is interconnected with the management of the interactive whiteboard, etc. With the complementation of all these points, the objectives that were set on the lesson planning were completely achieved, it really caught the attention of students, and for them It means a motivation for learning using this ICT tool, this influenced the classroom environment directly, because they were the ones who commented that their peers and themselves were much more organized and focused on the English classes and the contrast of how classes were before using this technological resource, *"we were not aware of our abilities and we started to fool around and we were not focused on what the English class was."*¹¹ It produces a significant attention in a class that for many students may be boring or even irrelevant to some others and they do not have a special interest on it, and make them pay attention on the subject.

¹¹ "no nos dábamos cuenta de nuestras capacidades o nos poníamos a tontear y no nos enfocábamos a lo que era el inglés."

2. Technical Skills

*"At the beginning, it was really difficult because they were ashamed of doing something that could not be done with the IWB. We could do something wrong."*¹²

With these words it is easy to describe what was going through the minds of students, the first class using the IWB. The students were very inhibited by the board, as they were afraid of damaging it and thus felt that if anything happened to it would be their responsibility, which may be something that comes from students' background and that influences their way of thinking and acting. This category was the second most listed in both focus groups, since students had no training and moreover, for most of them, it was the first time they used it.

One of the most persistent challenges by the students was that they had difficulties with writing, because while they were using the pens on the board, their handwriting was not the same type of calligraphy that they do on their notebooks and also to maintain the pen in a straight position, which resulted on totally cutting letters and even as boys who are just learning to write. "It was very sensitive to use it for first time"¹³ being tactile, the objects must be anchored on the showing screen, since a small touch can move the image or text and put them in another direction or even erased them. Another point related to technical skills is the location of the IWB and other components, because in order to work smoothly the

¹² "Al principio fue súper difícil porque como que daba vergüenza porque podíamos hacer algo que no se podía hacer. Podíamos hacer alguna embarrada."

¹³ "Igual era muy sensible para ocupar la primera vez."

board must be calibrated, and mounted in a fixed position, if the board or the data are moved, all calibration has to be done again.

Existent literature, like BECTA and Hamilton, prove that is a little bit difficult to get accustomed to icons and the way in which people should manage electronic pens because, as students said it was a matter of being accustomed to using it, as time passed, students became habituated to using the IWB and all its applications.

3. Appropriate classroom environment

As it is already mentioned, the interactive whiteboard helped the teacher to create a proper environment for learning English, students also did their part in order to get as much as they could of this interactive experience.

It could be observed that students valued the interaction that occurred with the teacher. They told us that *"it is a way to interact mostly with the class that the teacher is doing"*,¹⁴ because using this resource, the teacher could monitor the students' work and support them when they needed it, a condition that in a regular classroom could be a little more stressful for the teacher if he or she only uses the blackboard to provide contents. Another important and very interesting point was to discover that students were gratified with the participation of two teachers in the transference of contents in the class as they made it become much closer as students expressed it, *"the proximity of the teacher and the miss is better because*

¹⁴ "es una forma de interactuar mayormente con el profesor que está haciendo clases."

before it was colder and now, the relation with them is much closer."¹⁵ This point is ratified by the videos because we could see that the teacher was monitoring students all the time and also paying attention to students' doubts and the most important, helping them with problems in content and IWB. Besides this important statement expressed by the students, we can say that the use of the board by improving both, motivation and classroom environment influenced students' performance, because as they were more attentive and focused on the class, and constantly participating in work activities during the use of the IWB helped them to get better marks. All this can be verified with the following extract from the focus group and that can be verified with their final marks registered on the class book, is that; *"everyone started paying more attention and whenever they were paying more attention they obtained better grades."*¹⁶ And something that can get the attention inside the classroom is that, *"the group behaviour improved, because as we had to take care of the IWB, by maintaining it away from hits or scratches, that could damage it (...) classmates were more interested and started to behave better,"* as one of the students mentioned it. The students themselves were concerned to maintain all the equipment needed for installation in perfect conditions and keeping proper behaviour for the use of ICT resources to the fullest.

¹⁵ "la cercanía con el teacher y la miss es mejor porque antes como que se hacía más fría la clase y ahora no, es como más cercana."

¹⁶ "todos empezaron como a poner más atención y cada vez fueron poniendo más atención y empezaron a subir las notas."

Teacher relates the classroom environment with happiness, mentioning the following, *"happy teachers, happy students or happy students, happy teachers, that is what I can tell, we are happy in school."*¹⁷ This reveals that if students are comfortable and happy in the classroom, we can expect optimum results on the delivery of contents, and this occurred with the use of IWB in this educational context, this may or may not be a variant if we place the interactive board in another educational context, like in a high school in town or in a private school for example.

Other categories which were less present in the data were the following:

1. Cooperative learning

*"I think that before, the English class finished and we just stayed there, now with the IWB fellow students suddenly get out when the class ends and they began to write sentences in English with the board as to reinforce each other on what they learned from the board because it is easier."*¹⁸ That is how they describe what happened after classes with the IWB, the students were motivated to learn and the students that understood the contents clearly during the class were very concerned about teaching or explaining the contents of the class to those who had been a little behind or who wanted to practice a little more with the interactive board.

¹⁷ *"o sea profesores felices, alumnos felices o alumnos felices profesores felices, eso es lo que puedo decir, que estuvimos felices en clases"*.

¹⁸ *"creo que mejoró mucho la conducta del curso, porque como había que cuidar la pizarra, al golpearla o al rayarla, se podía echar a perder (...) los chiquillos como que les interesó más y empezaron a comportarse mejor."*

2. Learning by doing

A lot of people learn how to make handicrafts, speak languages or develop techniques by practicing them. In this case, the students found that "the fact of doing things is much easier for learning"¹⁹ by using the board and practice the English language in an enjoyable way and learning practice can be made much more meaningful to them. Constructivism is the class' basis. This methodology is the one practiced by the teacher of English and that is reason why students pay more attention to the IWB, which combined entertainment and mobility for a much more valuable "learning by doing" methodology to students.

Activities and strategies were selected according to the topic and characteristics that the IWB has in order to get the best from it. The activities were designed to maintain students active during the class and they were the centre of it. Activities were also designed to stimulate students by incorporating most of the multiple intelligences.

Literature tells us that *"the pace of lessons has also been increased with the ability to incorporate short, focused interactive segments before, during or after hands on practical activities."*(Preston, 53, 2008)

3. Time optimization

One of the most important features when teachers plan their lessons, is the time it takes to perform each activity in class and how long it will invest in the

¹⁹ "el hecho de hacer las cosas es mucho más fácil aprender."

implementation of resources that are going to be used in the classroom, in this sense, IWB provides a valuable time saving, not only for the teacher, but also for the students. First, teachers can bring their class list in an external storage unit or in their own laptop in order to use it with the IWB and the only time they could lose from the class would be in the setting up of the IWB but if it is already fixed, they only would spend the time that takes to power up the computer. Second, students save valuable time that can be used to pay attention to the explanation rather than concentrating on copying from the board as they mention, *"it was more time wasted on writing, while in the interactive whiteboard was less because all came in the computer and it was a thing of clicking and they were shown"*²⁰ besides, each class can be transformed into a PPT format which enables students to access to the class on their computers or print them directly with all changes that have been made on it, saving time and maximizing the understanding objective of the class. On the other hand teachers must have time to prepare their lessons and they have to invest time at home, so it can be a little bit exhausting when planning for the first time.

Using the expertise of other teachers could help when planning, because the webpage of the IWB contains many lessons that are done and that teachers can share with other from all over the world. *"The Teacher Resource Exchange (TRE) is a moderated database of resources and activities designed to help teachers develop and share ideas for good practice. All resources on the TRE are checked*

²⁰ "se le iba mas tiempo escribiendo, en cambio en la pizarra interactiva era menos porque todo venia en el computador y era cosa de hacer un click e iban pasando."

by subject specialists to ensure that they are of the highest possible quality.”

(BECTA, 2004: 17)

4. 6. General interview analyses

4. 6. 1. Teacher’s Interview

During the teacher’s interview the most frequent categories present in data were the following:

1. Positive attitude to change

For implementing changes in pedagogical practice, teachers must have a positive attitude when incorporating new resources and innovations to planning. Some researches confirm that teachers are also hesitant about incorporating new technology. The factors that BECTA signs as the most common are:

“Ease of access – the whiteboards need to be a regular part of classroom practice if they are to be fully exploited.

Reliability – studies report varying, though generally high, levels of reliability; the role of whiteboards in lesson delivery makes it essential that teachers have confidence in the board, its network connection and the provision of technical support

Visibility – problems can occur where sunlight shines directly onto the board

Positioning – the board should be mounted at a suitable height and the computer

and projector positioned to minimize the risk posed by trailing wires.”(BECTA, 27-28, 2004)

In this case, the teacher felt very excited to learn about this new tool for using it in her classes, She also observed that students were attracted to the IWB, and both, teacher and students were in the same situation, it was the first time using this resource, she mentioned during the interview that she is learning in the same way students do. She showed a great initiative in trying to learn how to use the IWB as she was in all classes in which the interactive board was used and she also participated in them.

2. Professional responsibility

“The IWB is very motivating, but we do not need to use and abuse of this resource, as I have always told my students in practice and myself, that is, we are teachers and we have to learn to be teachers with pencil and paper, we carry this on blood and in the case of an important means, it helps us to improve our class quality.”²¹

She is very aware that the board is a technological means that helps to deliver content in a different way, but at the same time the motivational saturation and over-exploitation of these technological resources can become a daily routine, but giving it a good use, it can improved class quality that are prepared for students, so you can keep your class under control. Additionally, she already feels a little bit

²¹ *“es muy motivadora, igual uno no tiene que hacer uso y abuso de esta cosa, como siempre le he dicho a mis alumnos en práctica o yo misma, o sea, uno es un profesor tiene aprender a ser profesor con lápiz, con papel, uno lo lleva en la sangre y en este caso es un medio importante nos sirve para mejorar nuestra calidad de clase.”*

confident with her skills with the IWB, saying, *"I find that I have advanced, I might still need to improve, I need more security, but I have seen improvement."*²²

Inside this category we can mention two implications:

- a) *Availability of time for teachers to learn how to use an innovation such as the IWB:* Teachers must be trained to use IWB so they have to spend time in courses.
- b) *Teacher's constant motivation in learning process (develop IWB skills):* Teachers must be willing to learn how to use the IWB and also how to incorporate this tool to their planning, the way in which they can prepare activities and how to get the maximum of the IWB applications.

3. Planning

Being IWB a relatively new tool in our educational system, preparation of classes in terms of units and lesson plans may be referred to a point of difficulty for teachers who have spent years in the educational system and that are not updated yet or that are not trained in technology, but the teacher says that it had not been a problem to incorporate this new resource to her schedule because, as she mentions, *"we are used to planning, we have many years planning with an audio-visual tools and IWB is one of them."*²³ It is a tool that can be adapted to the class

²² *"yo encuentro que he avanzado, es avanzado, a lo mejor me falta todavía, necesito como mas seguridad, pero he visto mejora".*

²³ *"Estamos acostumbrados a planificar, llevamos tantos años planificando que es un medio audiovisual más".*

and therefore there is not a major problem in incorporating this to planning, the focus is training teachers to use the IWB.

“Teachers have found interactive whiteboards relatively easy to use, but becoming confident in their use takes commitment in terms of both training and independent exploration.

Developing multimedia teaching materials is a significant addition to workload in the early stages, though preparation time decreases once a range of materials exists. The expectations that the whiteboards engender in pupils, however, put pressure on teachers to constantly improve the presentation and content of lessons. The capacity to share resources via the school network and internet could reduce workloads, but evidence suggests that this is currently underused” (BECTA, 27, 2004)

4. 6. 2. Principal’s Interview conclusions

During this interview we can emphasize the quality of educational management he has, because he is being updated constantly, not only in new educational methodologies, but also to what deals with training for the school staff, and that is what has been happening with the interactive whiteboard pointing as follows, *“We have to ask for help to a university, an institution, so in that way we can empower people to develop their ICT skills in an efficient and effective way.”*²⁴

²⁴ *“Habrá que acudir a alguna universidad, alguna escuela de educación para que nos capaciten a las personas para que puedan desarrollar su actividad en forma eficiente y eficaz”*

He is also concerned about students' access to technology, both computer and Internet, commented during the interview with these words, *"the FIA agreed with Entel (...) that will be installed over 400 antennas throughout the country to improve Internet coverage to the entire rural sector and all schools have access to such equipment."*²⁵ This agreement greatly facilitates the use of IWB because with internet coverage increased, teachers acting with the IWB in this establishment can have access to materials and resources designed for the IWB SMARTTECH in an easier way.

What called our attention is that until November 2010 and as the headmaster points out, the training for IWB resource has not been done. The lack of external support by the Ministry of Education makes it impossible for using the IWB, and teachers fear not to be able to use it. *"The boards were given and the truth is that they have been being trained by the people who have come from University of Bío-Bío to do their practice ", " We did not have a training from the ministry."*²⁶

English is a subject in which he really puts emphasis, *"at this time English is essential, what I say, for all the relationship with foreign countries"*²⁷, and how this educational unit provides specialized technical careers in agriculture *"For this is very important to speak English, as all (...) business, agricultural products that are*

²⁵ *"el FIA llegó a un acuerdo con Entel (...) que se van a instalar más de 400 antenas a lo largo del país para que mejore la cobertura de Internet a todo el sector rural y todas las escuelas puedan acceder a este tipo de equipamiento".*

²⁶ *"Se entregaron y la verdad es que se han ido capacitando con las personas que han venido de la Universidad del Bío-Bío a hacer práctica", "No tuvimos una capacitación del ministerio".*

²⁷ *"en este momento el inglés es fundamental, digamos, para todo lo que son (...) la relación con el extranjero"*

*sent abroad, the information we get from abroad according to the conditions that our products must have, they need to be in English.*²⁸ In addition to the great opportunity that fourth-year students have to apply for a scholarship to go to New Zealand in order to improve in the area of agriculture and livestock, so they must take a test in English in order to know their English level.

²⁸ *“Para ello es muy importante el idioma inglés, ya que todas (...) los negocios, la exportación de productos agrícolas, la información que recibimos del extranjero de acuerdo a las condiciones que deben tener nuestros productos están en inglés”*

Chapter V: Conclusions

In relation to question number one, it can be pointed out that the IWB can be integrated to a pedagogical practice in an effective way. The results of the analysis in the pedagogical practice of the teacher-investigator show that when the IWB is implemented according to the established criteria in “Marco para la Buena Enseñanza” it can result in having motivated students who perceive this technological device as an excellent tool that makes a lesson more interactive and entertaining. The classroom atmosphere is another aspect that has to be taken into account, as the incorporation of the IWB inside a classroom that is linked to a good planning and a prepared teacher who knows the subject matter and manages a whole classroom, is a crucial aspect to fulfill lesson objectives and a continuous and long life learning process.

In relation to question number two, the results in the analysis of the focus group with the students and the interview with the school’s teacher of English and the principal, show that the perception of these main participants in relation to the incorporation of the IWB in the school community is a highly positive aspect that contributes to acquire a second language and to motivate students’ interests in learning. The conclusions that can be stated from the opinion of the students are very important for the analyses of this research, as they mentioned that the IWB really contributes in their learning process.

It can be concluded that tools given by MINEDUC are necessary, but teachers need training and more opportunities to use them. In the case of the IWB at Liceo Agrícola Chillán, until the arrival of the investigators, IWBs were not being used, as mentioned in the interviews with the teacher and the principal, that nobody has given them a special preparation to start operating this technological means.

Besides, it can be concluded that the IWB as a teaching tool, contributes to class atmosphere and the interaction between the teacher and students, providing them the chance to use this tool as an element that gives many possibilities and properties to have collaborative peer learning. It can also promote peer work when completing an activity using the IWB (as observed in the video analysis).

It is necessary to prepare teachers and students along with the resources given, as these tools require a special way of use, to give educators a sense of being fully prepared to stand in front of a class and use the IWB in a confident way. It is important to mention that it would be great if both, students and teachers, can be prepared to use the IWB in a formal training and it is also relevant that all teachers of the school community can also be integrated and motivated to learn how to use this board.

Referring to the criterion B that is titled as *"Creación de un ambiente propicio para el aprendizaje"* was one of the most observed criteria during the video analyses as it could be clearly noticed that there was a good interaction between the teacher-students and peer interaction as well.

According to the class experiences, interviews and focus groups, it can be concluded that:

The IWB does contribute in learning a foreign language as all the opinions, viewpoints, feelings, appreciations and perspectives given by the school's characters mentioned that repeatedly.

The unit planning of activities and strategies that were used with the IWB was another aspect in this research as it is an important element that embraces time dedication in order to learn how to use this technological device.

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Appendixes

Appendix 1: Teacher journal

Self reflections per class using the IWB

The following reflections refer to the analysis that the teacher-investigator observed while using the IWB with the students in classes. Throughout the classes, the core idea of using the IWB was to go “*from instruction to construction*” (Dexter, Sara, 1999: 221). These texts and other materials related to this investigation are available on <http://manuelmolina.livejournal.com>.

Reflections for group 1

Self reflection 1

Class: 1 year A

School: Liceo Agrícola Chillán

Date: May 28th, 2010

Lesson objective: "Talking about activities that are happening now"

Grammar point: Present continuous tense

This was the first time we worked with the interactive whiteboard in class; First of all, I had my students listen to some examples about activities that were happening at the moment of speaking linking the ideas through mimics. After that, I had them write a substitution table on their notebooks and complete the task given in which

they had to complete sentences in the present continuous form. Next, they compared their answers with a classmate and this was the very first moment to use this interactive board in class. The first thing I did was to solve an exercise to show the students how easy write on this board was. Afterwards, I asked them to come to the board and complete a sentence but nobody wanted to try using the smart board so that I asked one of the students to write on it as a model. Sincerely, he wrote on the board and the class could perceive that writing on the board was not a difficult or unachievable task. After that moment, some students raised their hands and asked to complete the given task. I felt very happy as I could identify that the task was solved correctly and that my students started using the smart board as a tool.

Finally, I had them listen to verbs in a dictation and they had to write what they heard on the board; in this case, they had the chance to write and erase some misspellings and also checked their answers as a class.

All in all, I would like to mention that working with the IWB was what I really expected as it caused an important impact in the motivation and active participation of my students.

Referring to changes that I would have liked to do after finishing the class, I would suggest that the exercises were too long and monotonous for my liking; besides, I would have liked to give more chances to my students to solve the exercises on their own as some of the students solved the activities and the others copied them only.

Self reflection 2

Class: 1 year A

School: Liceo Agrícola Chillán

Date: June 2nd, 2010

Lesson objective: "Talking about activities that are happening now and actions that occur regularly" (contrast)

Grammar point: Present continuous tense – Present simple – Past simple

This was the second time we worked using the IWB and I could feel that my students were not so motivated to actively participate in the class. They followed all instructions, solved the given tasks but they did not show enthusiasm to come to the IWB by their own; instead, I had to push them to participate and write their answers on the board. The first activity we solved had students complete a table in order to form activities that were happening at the moment of speaking; after that, we practiced solving a multiple choice exercise in which the students had to choose the most suitable alternative related to actions that occur regularly (present simple) and activities that are happening now (present continuous). After that, the students had to make a little survey in which they asked a classmate about what he/she was doing; in this aspect, they had to write what the student said and finally they had to report their gathered information and write the sentences on the interactive whiteboard.

From my viewpoint, the activities did not cause the impact that I expected but the IWB helped the students to check and share answers and also to practice writing on the one hand, but I could not get the best of it in terms of usage and as a tool of empowering the teaching act.

I would suggest that whenever a teacher plans the activities the he/she is going to use in classes; he/she should consider the length of each activity since I prepared fifteen questions of multiple choice and I felt that my students felt tired and bored when we reached question ten; so I would state that short activities really contribute to the pace of the class and the sense of continuity that a class may have.

Self reflection 3

Class: 1 year A

School: Liceo Agrícola Chillán

Date: June 9th, 2010

Lesson objective: "Talking about activities that already happened"

Grammar point: Past simple tense

In this class, we talked about activities that happened in the past and no longer continued. First of all, the students listened to examples contrasting actions that occur regularly, happen at the moment of speaking and activities that are over. After that, the students read a set of examples about past activities and in this case

I used the highlighter tool of the IWB to reinforce the past form of the verbs. Next, my students had to complete a table with the past form of the verbs and the meaning in Spanish; At this point, they had to come to the IWB and complete the table to share the solutions as a class. Afterwards, I highlighted some keywords that are linked to past activities and following this explanations the students had to match the base form of the verbs with their corresponding past forms.

To come to an end, the students worked with a handout in which they had to provide the past form of some regular and irregular verbs and after they completed the task by their own; we checked the same crossword on the IWB using the interactive keyboard that had students participate energetically completing this exercise.

Taking everything into account, the IWB gave the students the possibility to have a lot of practice and I felt that they were active and extrinsically motivated to complete the exercises.

When planning this class, I took into account all the pieces of advice that my guided teacher gave me so as I tried to provide my students many short activities which really contributed to the learning process as we checked all the exercises on the IWB and the objectives of the class were fully achieved. I could notice that giving my students the possibility to solve games as a crossword in the IWB was a really nice task as they felt motivated and willing to work.

Self reflection 4

Class: 1 year A

School: Liceo Agrícola Chillán

Date: June 23rd, 2010

Lesson objective: "Learning the days of the week"

Vocabulary: Days of the week

Grammar point: Present continuous tense – Present simple – Past simple

First of all, I presented the days of the week through pictures in a calendar in which I used the IWB to highlight the spelling and pronunciation of the days of the week. After that, we played a couple of games using the IWB in which the students had to use the interactive keyboard to write the corresponding day of the week in half a minute; it was rather difficult for them at first as they did not find the letters in the interactive keyboard. Then, we played a game called "fling the teacher" in which they had to answer fifteen questions about the content that we were studying and the IWB was the tool which let us optimize the time as we just touched the alternative and we could see if the answers were right or wrong. I would like to mention that this was one of the best activities that I could feel my students enjoyed working as they provided their answers and at the same time I could see how fast they learned the days of the week through practice. Besides they could think about what the answer was and at the same time they could share which was the best alternative for each question.

Finally, the students solved a matching pair exercise on the IWB and they also associated the days of the week with some ordinal numbers.

It is important to point out that I felt so happy and comfortable using the IWB for developing the tasks and activities prepared. It really helped me to present the content in a way that enhanced students' participation and willingness to work.

A point that I would like to highlight is that the IWB can be used for different purposes and activities; an example of this is that I prepared activities which involved playing a kind of "who wants to be a millionaire" and it worked perfectly; so as the IWB can be adapted to the exercise the teacher can provide and also the context in which it can be used in terms of vocabulary.

Self reflection 5

Class: 1 year A

School: Liceo Agrícola Chillán

Date: June 25th, 2010

Lesson objective: "Project about the days of the week"

Vocabulary: Days of the week

Grammar point: Present continuous tense – Present simple – Past simple

In this class, I used the IWB as a demonstrative tool to complete a project in which my students had to write a couple of sentences in each day of the week expressing

what they do/did/ or are doing attached with a drawing or picture. On the IWB I showed a table with the days of the week and I wrote an example of a daily action. Then, I let my students to start working on their own or in pairs. As the class was going through, some students wrote their own sentences on the IWB as models for the rest of the class.

I believe that, as I have stated previously, the IWB can be used according to the activities the teacher prepares and the objectives of the class; It implies that the IWB can be useful to the teacher to optimize time, demonstrate (provide examples), monitor students' production and work among other contributions.

I can assure that this technological tool can be fit in any classroom and context as it provides the teacher not only writing, but also interaction, video, sound, etc.

Reflections for group 2

Self reflection 1

Class: 4 year A

School: Liceo Agrícola Chillán

Date: June 4th, 2010

Lesson objective: "Identifying proper and common nouns"

Grammar point: Present continuous tense – Present simple

This was the very first time I worked with the IWB in this class. To start with, I had my students listen to examples about proper and common nouns in order to let them recognize the difference between them. I showed them pictures and they could identify the objects but they did not get why some of the pictures were labeled as proper nouns and other as common ones. Then, I could notice that they did not understand what a noun was so that I explained them that all the objects inside the classroom were nouns; as an example I told the class that the door, windows, desks, lamps, the IWB itself, among others were nouns. After that, one student told me that we were talking about "sustantivos" (nouns) and everybody noticed what we were talking about.

Afterwards, my students had to differentiate different nouns into two columns which were named proper and common nouns; after this exercise, they understood better the difference but they still did not identify why some nouns were written with capital letters. Then, I asked them that question and in that moment they told me that proper nouns were written with capital letters. Following that exercise, they had to circle common nouns in the IWB and they did very well, it seemed that using the electronic pens was not a problem but few students wanted to come to the board; I believe that as we were recording the class they felt a little nervous to make any mistake.

All in all, I would like to mention that working with the IWB was a great complement as it provided interaction among the exercises and my students; what is more, everybody could see the answers and collaborate when something was not correct. It really contributed to the participation of the class.

Self reflection 2

Class: 4 year A

School: Liceo Agrícola Chillán

Date: June 11th, 2010

Lesson objective: "Noun project"

Grammar point: Present continuous tense – Present simple

In the first part of the class, I had my students comprehend some instructions about a project that they had to complete in groups of four. To achieve this purpose I showed them a blank project on the IWB and I provided some examples of each item. After that, my students started working cutting some words and images and classifying proper and common nouns into a table. In this class, I used the IWB as a core element to check students' progress on the project as they had to come to the board to complete each part of the given task; so that they solved, shared and discussed their answers writing their final answers on the IWB while the rest of the class could give different opinions about what the correct solutions were. I think that the IWB helped everybody inside the classroom to find their voice and a sense of comfortable atmosphere for making and correcting mistakes which is something that I strongly seek in my classes. It is important to mention that it is not magic; it clearly does not imply that working with the IWB is the solution for everything; on the contrary, students and teacher's interaction is the core part to involve everybody in the class.

Self reflection 3

Class: 4 year A

School: Liceo Agrícola Chillán

Date: June 18th, 2010

Lesson objective: "Reporting what other people say"

Grammar point: Present simple and past simple

In this class, we did not work with the IWB; instead, we just used handouts and pictures which showed what people said and thought so the given task was reporting what those people said. I prepared this lesson thinking in given my students the chance to let them show the way they learn better; I could notice that the IWB had helped me to explain the content in an interactive way as well as optimizing the class time a lot as I could monitor most of my students responses to the activities. As I had mentioned I sought how my students learned and I felt that providing them different activities in which they have to work with different tools as the IWB, their notebooks, handouts, pictures, etc. provide the class a rich and enhancing atmosphere in which each student can find the better way to learn. That is a relevant point that a teacher may consider when planning and preparing lessons.

I would state that as the activities were mainly writing the whiteboard was the tool that I thought was the best to complete the activities as well as the pictures and drawings I gave my students

Self reflection 4

Class: 4 year A

School: Liceo Agrícola Chillán

Date: June 25th, 2010

Lesson objective: "Reporting what other people say and final project"

Grammar point: Present simple and past simple; adjectives and proper and common nouns"

This was my last class with this group so as I prepared a final project to check if my students have learned the contents that we have worked. The first part of the class was prepared to check if the students could report what other people say; for this purpose I used the IWB as a demonstrative tool to provide students a couple of examples; then, I showed the some pictures and they had to come to the IWB and report what was said. After that, I let them write and check their answers. Following that activity, I presented the last project in which my students had to gather into groups and complete the given task in sheet of paper; for this purpose I showed the content on the IWB and I gave the instructions and some examples for a better understanding.

As a conclusion I would suggest that a teacher can use the IWB for different purposes; but there are some steps that he/she should consider as managing the properties and tools that the IWB provides as well as knowing that they can prepare different activities depending on the context they teach.

General reflections per group

General reflection about the work with group N° 1 (1st year A)

Throughout the classes with this group, it can be stated that the IWB did impact on students' behavior, participation and willingness to work as they perceived this technological means as a tool that helped them to learn English in a way that has them work collaboratively and solve given exercises and activities in an interactive way. It could be observed that most of the 41-student class really participated in coming to the IWB to check activities by touching the flat screen and the rest of the pupils' behavior was completely acceptable as they looked at their classmates and also tried to help them in answering the activities correctly. As teachers we would like to mention that once we saw the videos and observed each class, we could notice that the students paid attention to what the teacher presented using the IWB and as they were told to work on activities they solved them in silence while the teacher was monitoring their work.

It was very grateful to see students who worked, came to the IWB and helped one another during class time and the class atmosphere was quite comfortable for the teacher as well as for students.

It could be mentioned that the experience of the class using and manipulating some properties of the IWB was really what we expected to achieve; students could use the IWB immediately, it seemed that they had an "internal software" to work with technological means and that did help to the continuity and systematic pace of the class.

It has to be mentioned that in this group, students met each other for the first time during this year, so they had known the school itself just at this moment. Apart from the learning process through the different subjects and the IWB in English classes, this period was a journey for them to know the school's atmosphere and people. This shows a group of students that is just starting and integrating the educational unit, in contrast to the other analyzed group (4A) that has known the school during four years and have a better knowledge of the positive or negative aspects of learning at this place, deficiencies, limitations and advantages. The use of the IWB with the first group was a motivation for them to understand the quality and innovation the school is opened to achieve, encouraging students' capacities and perceptions of their educational environment at a point in which they are just constructing an idea of the place where they are coming to learn. This could be very positive and, in fact, during the focus groups, it is a relevant point students take care about, making them to be proud and confident about the education they are receiving.

First year students had a good reception in interacting with the IWB. During the focus groups, many students concluded that the IWB is an object that needs an efficient use from people, knowing how to employ this resource. They mentioned how careful we have to be when using the IWB, emphasizing that it is a valuable resource that is shared by all students. This point is closed related to collaborative work; they have conscience about the collective use of resources, something that for teachers is too difficult to achieve, as the number of students per class does not allow letting each student to use school's resources. In this particular case, 41

students was a difficult number. To reach each one of the students in the use of the IWB in a 90-minute class period was simply impossible.

General reflection about the work with group N° 2 (4th year A)

During the classes with this group that were held only on Fridays, which was one limitation that I could observe during the classes, as it was not sufficient to have two pedagogical hours a week only, since this aspect affected the systematic work and the sense of continuity that it should have had; it could be mentioned that this class received the IWB as a good way to have more interactive classes; their behavior was characterized by having full respect for the teacher and for their classmates while writing and manipulating this technological means. As they mentioned in the focus groups, they perceived that the IWB was an excellent classroom tool to work with and solve activities, as well as, a notorious advantage for their future as they suggested that they will probably have to work with this tool in the future at college or university.

As an example, in the second class, the students could work with the IWB directly to solve the activities presented and it could be noticed that they did not have much trouble in writing using the electronic pens or their fingers. It was also a good way to drag pictures that had to be categorized into two columns that were labeled as common and proper nouns; the students had fun moving the pictures and it was also a good way to have the whole class collaborate and be responsible for their own learning; that point was one of the most important as I tried to have them work in groups as much as possible since the IWB gave me the chance to have and

present activities that involved working in that way that deeply helped the students to collaborate with each other and to portray peer-learning.

All in all, this group got easily accustomed to working with the IWB throughout the lessons and it also had a markedly advantage as their behavior and willingness to work was excellent for a teacher.

A general reflection for both groups

One aspect is class time budget: It seemed that throughout the classes the students wanted to continue working with the IWB; moreover, the activities presented were key elements as they enjoyed manipulating the board and solving or completing the activities as a group.

The number of students inside the classroom was not a big issue since the classroom was equipped accordingly to the necessities of the students (referring to furniture and illumination) and the size of it was completely enough to have a good work atmosphere.

It has to be highlighted that the IWB is an excellent tool for teachers and students, but over its use, the activities presented in each class are a core part for a successful lesson because the students have to be both extrinsically and intrinsically motivated to complete the tasks given.

The educational intervention was fully achieved thanks to disposition of all the staff in this school since the principal always promoted the use of the IWB, as he

considered that this tool was a real contribution to students' development as seen in the videos.

The IWB is now used by the head teacher of English in all levels as a consequence of the intervention and the constant use of this ICT resource.

The use of IWB was appreciated by students, head teacher and principal, as seen on the focus groups and interviews.

Finally, the IWB was located on the computer laboratory along with the necessary equipment as a result of the good use of this resource (contrast between the first classes in which all the equipment had to be connected and displaced in a rough way and the following lessons in which the IWB was located in one single place).

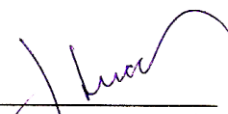
The school community realized about the use of the IWB and teachers of other subjects started getting involved in learning how to operate this tool that in the past was used just as a screen.

Main advantages and limitations in the use of the IWB are mentioned in the "interactive whiteboard manual" available in the attached CD-ROM.

Appendix 2: Authorization letter

Autorización

Quienes suscriben, autorizan a los estudiantes seminaristas de la carrera de Pedagogía en Inglés de la Universidad del Bío-Bío Gonzalo Alexis Luengo Orellana, Manuel Jesús Molina Osorio y Solange Paola Ramírez Valenzuela, a incluir el registro audiovisual de diversas clases realizadas en el Liceo Agrícola de Chillán a los cursos 1º medio A y 4º medio A en el seminario de título que los nombrados realizan. Este material será incluido en el informe final de la investigación que desarrolla el seminario, titulada "*Influencia de la pizarra digital interactiva en alumnos de educación media chilenos en el aprendizaje del idioma inglés como lengua extranjera*", lo que constituirá un documento de vital importancia para ilustrar y comprender el uso de la pizarra digital interactiva durante las experiencias de aprendizaje desarrolladas en el establecimiento, sobre las que se reflexionará y analizará. Los videos serán adjuntados al seminario de título final, quedando copias en poder de la Universidad del Bío-Bío y por ende será parte de la colección de la red de bibliotecas de esta última institución.

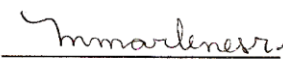


Jorge Trucco Bello
Director del Establecimiento





Gonzalo Vergara Diaz
Jefe Docente



Mary Marlene Saez Reyes
Profesora de Inglés del Establecimiento

Appendix 3: Focus group 1 transcription and analysis (Group 1)

Transcripción	Tema
<p>G: Mi nombre es Gonzalo Luengo y soy colega del profesor Molina (...) y estamos acá porque la idea es conversar un poco de la experiencia que tuvieron con la pizarra digital interactiva (...) a la que también le vamos a llamar PDI. Así que si de pronto se me escapa un PDI, por favor piensen PDI es Pizarra Digital Interactiva. Les voy a pedir que (...) voy a ir haciendo como unas especies de preguntas, voy a ir planteando temas y la idea es que cada uno puedo participar, contestando. Somos ocho, la idea es que partamos de acá, enumerándolos cada uno de sus números antes de hablar. Uno, dos, tres, cuatro, cinco, seis, siete ocho, entonces, si quieren contestar, ustedes dicen su número y hablan, porque después nosotros lo transcribimos. No van a aparecer sus nombres, sólo aparece su número. Como que se les protege en ese sentido, para que nadie sepa que ustedes contestaron ni nada, entonces así nos evitamos cualquier lata. Entonces, nos podemos presentar primero si quieren, digan su número, partamos por acá y terminamos acá con el número ocho, y digan su nombre, si quieren. Bueno, la pregunta, la primera pregunta que les quiero hacer y cada uno levanta la mano, cuando quiera contestar, es si antes habían</p>	<p>Experiencia</p>

<p>trabajado con algo así como la pizarra digital interactiva.</p> <p>4: No.</p> <p>6: No.</p> <p>8: No.</p> <p>1: Sí.</p> <p>2: No.</p> <p>7: Sí, allá en el colegio para una, cómo se llama, para una especie de casa abierta, las mostraron no más. No trabajamos con ellas.</p> <p>Gonzalo: Número 7, ¿en qué colegio, cuál fue ese evento donde estuviste que viste algo?</p>	<p>previa con la PDI</p> <p>Experiencia</p> <p>previa con la PDI</p>
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7: Casa abierta se llama.

G: Casa abierta. ¿En qué colegio?

7: El Liceo Politécnico María Ward.

G: Ah, María Ward, ¿eso es en San Ignacio?

7. Sí.

G: Ah, genial. ¿Quería decir algo número 2?

2: Coihueco, en el... No sé cómo se llama... No, nada.

G: ¿Alguien más que haya tenido alguna cercanía a la pizarra digital interactiva antes?

1: Cuando tuvimos un taller de Lenguaje y teníamos que llevar unas palabras a un cajoncito ahí, con el dedo así.

G: Y eso fue antes de que tuvieran la experiencia con el profesor Molina, ¿cierto?

1: Sí.

G: ¿Alguien más que quiera decir algo de alguna experiencia previa con la pizarra? ¿No? ¿Qué opinan de la experiencia de aprendizaje con la PDI (...) con la pizarra digital interactiva? La idea es saber qué y cómo aprendieron al utilizar la pizarra.

4: Bueno, fue buena la experiencia, fue bonita. Y aprendimos a usarla por el teacher. Porque el teacher Manuel por (...) él hacía primero lo que teníamos que hacer y después lo hacíamos nosotros y así de a poco fuimos aprendiendo.

Relación

<p>7: Y lo otro, es que cuando uno soltaba la pizarra, dejaba de escribir y después escribías de nuevo y hay veces que no hacías bien las letras y había que estar corrigiendo.</p> <p>2: Fue buena la experiencia. Aprendimos harto.</p> <p>G: ¿Algo más que agregar? De qué opinan con su experiencia de la pizarra. Lo tercero es, ¿qué cambios observaron ustedes con el uso de la pizarra digital interactiva en clases, en relación a las donde no se usó?</p> <p>6: Las clases eran más entretenidas también.</p> <p>G: ¿Alguna otra comparación que se puede hacer entre clases usando la pizarra digital interactiva y en las que nos se utilizaba?</p> <p>4: Es que era como, por ejemplo, ya, hacíamos la clase solamente en la pizarra normal y era sí como aburrido así, como que no tenía gracias. En cambio, cuando la hacíamos con la PDI,</p>	<p>Clima en el</p>
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<p>1: A mí no me costó, porque yo ya sabía y el teacher me había explicado algo.</p> <p>G: Número 6 hablaba de que al apoyar la mano como que algo pasaba. ¿Qué sucedía?</p> <p>6: Que al apoyarla se rayaba ahí. Porque hay que tomar con los pueros dedos el lápiz.</p> <p>G: A parte de eso, ¿qué otras dificultades encontraron al usar la pizarra?</p> <p>3: Que cuando ocupábamos el borrador, al borrar, como que no escribía al tiro, había que esperar un poquito para empezar a escribir.</p> <p>8: Como que seguía borrando. Seguía borrando sin utilizar el borrador.</p>	<p>PDI</p> <p>Relación entre compañeros</p> <p>Clima en el aula</p> <p>Dificultades en el uso de la PDI</p>
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<p>7: Es que lo que pasa es que costaba más porque uno tenía que dejar el lápiz, después ocupar el borrador y habían veces cuando nos quedábamos con los lápices en la mano y en vez de ocupar el borrador seguíamos escribiendo.</p> <p>4: Igual, cuando por ejemplo, uno estaba al lado de la cruz para cerrar, uno pasaba a llevar y se cerraba todo, entonces se borraba todo lo que estaba escrito, entonces era complicado igual.</p> <p>G: ¿Número 1, no quería decir algo?</p> <p>1: No.</p> <p>G: ¿De qué forma influyó el uso de la pizarra digital interactiva en su aprendizaje de la unidad? Acá nos referimos a las materias que estuvieron pasando a través de la pizarra. ¿Realmente les llegaron como a la mente? ¿Pudieron aprender de ellas con la pizarra? ¿O de pronto hubo otra complicación más que no les</p>	<p>Dificultades en el uso de la PDI</p>
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<p>permitió entender algo?</p> <p>4: Igual fue, con la pizarra así, era como que todos estábamos atentos así, como que todos aprendíamos así. Por ejemplo, yo ponía harta atención; cuando estaba la pizarra normal así como que no podía entender bien y con la PDI pude entender más la materia.</p> <p>6: Es que también como era una cosa nueva, uno ponía más atención a eso y no costaba tanto aprender.</p> <p>5: Uno quería participar siempre en la pizarra interactiva, en la PDI. Que les gustaba más las pizarras interactivas a escribir en las pizarras normales.</p> <p>G: ¿Algo más qué decir acerca de la materia que vieron con la ayuda de la pizarra?</p> <p>8: Es que quedaba más claro igual de repente, porque, por</p>	<p>Clima en el aula</p>
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<p>ejemplo, escribían en la pizarra anterior, igual como que todos hablaban antes y como que era la misma rutina así, no lo pescaban mucho e interrumpían la clase siempre. Y después como que todo fue más tranquilo; entendíamos mejor, porque habían menos interrupciones.</p> <p>G: ¿Algo más acerca de ese tema?</p> <p>4: Igual, por ejemplo, la pizarra normal, el teacher tenía que escribir más, entonces le costaba más, entonces en la PDI en cambio, salía todo preparado porque traía la presentación lista.</p> <p>G: Bueno, les quería preguntar ahora, ¿qué modificaciones harían ustedes cuando se usa la pizarra digital interactiva en clases? ¿Qué se les ocurre a ustedes que se puede hacer distinto a lo que ya vieron o qué mejorarían?</p> <p>6: Igual era muy sensible para ocupar la primera vez.</p>	<p>Logros de aprendizaje</p>
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<p>G: Me refería a hacer cambios. ¿Qué cambios proponen ustedes a hacer en el uso de la pizarra? O ¿qué cosa imaginan que tal vez se pueda hacer en la pizarra y que ustedes esperan llevarlo a cabo alguna vez? Que digan qué modificaciones harían al uso de la pizarra. En qué otra cosa la utilizarían en clases.</p> <p>4: Sería más fácil usarla ojalá en todas las clases, porque sería más, no sé, más divertido. Más fácil igual.</p> <p>3: Sería más fácil aprender en todas las clases si la ocuparan (...) la pizarra en todas las clases, no sólo en inglés.</p> <p>6: Igual como pasara en inglés, como que se pone más atención, igual en las otras clases pondrían más atención; no se desordenarían tanto.</p> <p>2: Serían más interesante las clases.</p> <p>8: Subiría más el promedio del curso, subirían las notas y todo.</p>	<p>Contrastes PDI-pizarra tradicional</p> <p>Relación alumnos- profesor</p>
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<p>El comportamiento se mejoraría.</p> <p>G: ¿Han subido las notas, creen? ¿Por lo que ustedes saben?</p> <p>2: Sí.</p> <p>4: Yo creo que sí, porque de primera como que (...) la pizarra así (...) cada vez íbamos subiendo más las notas.</p> <p>G: Bueno, el siguiente tema dice: La experiencia de trabajo que tuvieron con la pizarra digital interactiva, ¿cumplió las expectativas que ustedes tenían? Me refiero a esto (...) que si en algún momento, o segundos antes, tal vez, ustedes les debieron avisar de que las pizarras estaban acá, ¿qué imaginaron ustedes en un primer momento que harían con la pizarra? Y quisiéramos saber si eso efectivamente se cumplió. Como una idea que ustedes pudieron tener preconcebida acerca de la pizarra y saber si era lo que ustedes esperaban o no.</p>	<p>Percepción de la PDI</p> <p>Logros de aprendizaje</p>
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<p>4: Yo me imaginaba así, que era como una pizarra (...) directo (...) yo pensaba que era así como un celular, como los que salen ahora. Yo pensaba que era algo así, entonces cuando llegamos a la sala y se podía escribir con el dedo, entonces igual era divertido. Yo me lo imaginaba así.</p> <p>G: ¿1, 2, 3, 5, 6, 7, 8?</p> <p>6: Uno pensaba que no iba a necesitar lápices o cosas así (...) y también podía escribirse así con el dedo no más.</p> <p>G: ¿Ustedes creían que al utilizar la pizarra...? Bueno, puede parecer como obvia la pregunta, si ya lo estuvimos hablando, ¿pensaron en algún momento en algún momento en los resultados que tendrían a nivel de notas al usar la pizarra? O sea, ¿pensaban por ejemplo que tal vez se tenían como la fe en que si llegaban a usar eso, que es la pizarra, podrían llegar a tener buenas notas?</p> <p>1: Yo pensaba que no, después me interesó en las clases que</p>	<p>Percepción de la PDI</p>
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<p>hacia el teacher (...) entretenidas.</p> <p>4: Yo tampoco pensaba que no porque eran como un poco desordenados el curso, pero después cuando fueron viendo los chiquillos, cómo el teacher la usaba, todos empezaron como a poner más atención y cada vez fueron poniendo más atención y empezaron a subir las notas.</p> <p>G: Bueno, de eso quisiera que nos cuenten ahora, y la idea es que ahora sí todos participen. Vamos a empezar desde el 1 al 8, así, en orden, la idea es que digan, por ustedes mismos, qué cambios vieron dentro de la sala de clases, como ya lo había dicho número 3 y número 5 (...) ¿qué cambios vieron dentro de la sala, por ejemplo, a nivel de conducta de sus compañeros, tal vez como en la performance del profesor, cosas así? ¿Qué cambios pudieron notar?</p> <p>1: Yo noté que mis compañeros no estaban desordenados como antes.</p>	<p>Logros de aprendizaje</p> <p>Relación alumnos-profesor</p>
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<p>2: Éramos desordenados, pero cambiaron las clases, están buenas.</p> <p>3: Yo creo que mejoró mucho la conducta del curso, porque como había que cuidar la pizarra, al golpearla o al rayarla, se podía echar a perder (...) los chiquillos como que les interesó más y empezaron a comportarse mejor.</p> <p>4: Yo pienso que el curso cada vez se fue superando más. Porque de primera conversaba y después, cuando fueron viendo, eran mejores y fueron superando el orden y el comportamiento y las notas.</p> <p>5: Desde que empezamos a usar la pizarra, el nivel del curso empezó a subir, tanto en comportamiento como en notas, que fueron superándose y mejor promedio en inglés.</p>	<p>Clima en el aula</p>
<p>6: También teníamos (...) se concentraban más en las clases, ponían más atención (...) y eso ayudó a subir las notas también del curso.</p>	<p>Clima en el aula</p>

<p>7: Igual perdimos harto la vergüenza algunos, porque, por ejemplo, pasar adelante (...) hay veces que da vergüenza. Pero al ser interactiva la pizarra, fue como más entretenido y como que no se notaba tanto el hecho de que estabas frente al curso.</p> <p>8: Mejoró mucho el comportamiento y las notas subieron igual, yo encuentro que igual subieron más, porque dejaban (...) no interrumpían tanto las clases. Como que habían menos interrupciones y más niños poniendo atención.</p> <p>G: Bueno, finalmente, algo que quisieran decir acerca del trabajo con la pizarra que les haya quedado en el tintero.</p> <p>4: Que ojalá que siga funcionando y que la cuiden igual como la han cuidado.</p> <p>8: Que nos gustaría que el liceo recibiera más PDI y que se utilizaran y las cuidaran para que funcionen por muchos años</p>	Percepción de la PDI
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<p>más.</p> <p>6: Que también se ocuparan en otras clases. No sólo en las de inglés.</p> <p>G: ¿Algo más qué decir?</p> <p>5: Que, como decía el número 6, que se ocupen en todas las clases para que el promedio general del curso suba, así como subió en inglés, que suba en los otros ramos también.</p> <p>G: ¿1, 2, 3, 7? ¿Nada más que decir? Bueno, les agradecemos de verdad que se hayan tomado el tiempo de venir acá y todo lo que se grabó lo vamos a transcribir y vamos a hacer un informe, así que el liceo puede que oiga sus ideas. Así que genial, de verdad, vale la pena que hayan estado acá. Así que muchas gracias, pueden retirarse.</p>	
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Appendix 4: Focus group 2 transcription and analysis (Group 2)

Preguntas	Respuestas	Tema
<p>¿Habían trabajado con la Pizarra Digital Interactiva?</p>	<p>1: trabajamos solamente con el teacher 2: solo con el teacher Manuel</p>	
<p>¿Qué opinan en general de la experiencia con la pizarra?</p>	<p>3: es super bueno porque aprendimos como hacer cosas nuevas y que sirven en la vida cotidiana o pueden servir o para nuestro futuro. 5: aparte que emm... uno emm... al menos yo pensé que era mas difícil manejar y el teacher nos enseñó como... que están en la pizarra para eso. 6: yo encuentro que fue una forma para interactuar mas con el idioma ingles de una forma mas entretenida y para así aprender mejor. Fue una forma fácil e interactiva para poder aprender. 8: igual la pizarra nos ayuda en otros ramos mas tecnología y entonces eso igual es bueno aprender</p>	<p>Aprendizaje significativo Innovación profesional Interacción Habilidad TIC Inmersión L2 Transversalidad en el curriculum</p>

	<p>3: igual que como se llama... siendo mas entretenido las cosas uno aprende mas rápido, porque si uno esta siempre por ser escribiendo, escribiendo uno no aprende nada si solo escribe, pero el hecho de hacer las cosas es mucho mas fácil aprender</p> <p>7: igual porque ahí en la pizarra podíamos ... el profe nos ponía unos... el teacher manuel nos ponía unos monos y nosotros íbamos colocando en distintas partes en cambio asi, en la pizarra no podíamos haber hecho eso.</p> <p>2: es mucho mas fácil aprender asi como dicen mis compañeros y hace las clases mas entretenidas y se acortan mas las clases también. Antes como que la pizarra no, no puede ver un dibujo como dicen... no se puede en cambio ahí tan las figuras.</p> <p>1: es super llamativo trabajar asi porque por ejemplo con la pizarra no se encuentran los mismos colores no es como lo mismo de que todo, las ansias de adquirir y trabajar, en cambio ahí en la pizarra se notaba que todos querían participar y la pizarra es fome en</p>	<p>Atributos de la PDI</p> <p>Eficiencia</p> <p>Aprender</p> <p>haciendo (estrategias de aprendizaze</p> <p>Interactividad</p> <p>Facilidad en edición de imágenes (drag)</p> <p>Motivación</p> <p>Color (motivación)</p>
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	<p>realidad.</p> <p>4: deja mas preparado para una carrera de estudio superior como la universidad. porque en la universidad puede que tengan implementado este sistema y uno llega asi y no sabe como usarlo.</p>	<p>Participación activa</p> <p>Estudios superiores</p> <p>profesión</p>
<p>¿Qué cambios observaron con el uso de la PDI en las clases con las que tuvieron pizarra PD en relación a las donde no usaron la pizarra?</p>	<p>3: todos se muestran mas interesados en participar en la clase porque antes por decir siempre hay un grupo que trabaja el grupo que siempre se sienta adelante y los que se sientan mas atrás siempre son como desinteresados y como que ellos copian pero los... pero siempre ahora con la pizarra interactiva es como todos se interesan porque a todos les gusta pasar y hacer las cosas para aprender.</p> <p>7: también que la pizarra la que usa los plumones eh... eh... uno se demoraba mas en escribir que la... se le iba mas tiempo</p>	<p>Participación</p> <p>Ahorro de tiempo</p> <p>Motivación</p> <p>Ambiente de aprendizaje</p> <p>Estrategias de actividades</p> <p>Eficiencia</p>

	<p>escribiendo en cambio en la pizarra interactiva era menos porque todo venia en el computador y era cosa de hacer un click e iban pasando.</p> <p>2: eh... que igual antes pasaban los mismos casi siempre a la pizarra en cambio cuando empezó a usar la pizarra como que uno tenia interés a... a... pasar a aprender.</p> <p>5: la pizarra PDI, por lo menos a mi me llamo mas la atención eh... porque el teacher podía mover eh... los dibujos, los colores y un sinfín de manualidades que se podían hacer.</p> <p>8: igual algunos pescábamos mas el ingles porque algunos, no lo pescábamos mucho el ingles, entonces como que algunos mas se interesaban, veian todo, las oraciones, pasaban a la pizarra y las escribían, no como antes que era mas fome pasar a la pizarra a escribirlo porque pasaban algunos no mas.</p> <p>6: yo, mi opinión en relación a las dos pizarras eh... yo opino que la de ahora, eh... como dije al principio es una forma de interactuar mayormente con el profesor que</p>	<p>Ejercitación</p> <p>Estrategias</p> <p>Interactividad</p> <p>Participación</p> <p>Inclusión; participación</p> <p>Interacción con el profesor</p> <p>motivación</p>
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	<p>esta haciendo clases, anteriormente la pizarra antigua como podríamos decirle es una forma de aprender, claro es buena pero a la vez no es tan ehh... tan buena como para interactuar con los alumnos, en cambio aca los alumnos se interesan mas por esta pizarra, están mas motivados para poder aprender de una forma mas fácil.</p>	
<p>¿Qué dificultades pudieron ver, asi siendo muy quisquillosos, que dificultades a pesar de lo fantástico que de pronto pudieron sentir en algún momento que dijeron mmm... algo aca no anda bien?</p>	<p>1: la letra a veces como que no salía muy bien. no salía la misma letra como la del cuaderno en la pizarra, claro, salía como tiritona, pero si uno aprendía a manejar bien la muñeca salía bien la letra al final, era cosa de principio.</p> <p>6: si, eh... yo creo que mi compañera numero 1 tiene razón eh... yo opino que acostumbrarse sería lo ideal porque al usarla la primera vez nosotros fue como algo eh... algo nuevo para nosotros, entonces nos costó aprender en un principio pero luego ya nos fuimos acostumbrando y fuimos paso a paso mucho mejor.</p> <p>2: a mi me hacia un problema porque yo soy</p>	<p>Dificultades técnicas</p> <p>Manejo técnico-participación</p> <p>Aspectos técnicos para mejorar</p> <p>Manejo técnico</p> <p>Manejo técnico</p>

	<p>zurda y tiendo a escribir así rayando entonces se me borraba todo, ahora a través del tiempo me he acostumbrado un poco más.</p> <p>5: a ha, a mí se me dificultaba o sea antes escribía ____ y me dificultaba cuando había que dejar los lápices para agarrar los plumones y borrar.</p> <p>7: igual yo me ponía más nervioso cuando pasaba a la pizarra porque igual tenía miedo de que eh... dejar la empuñadura no se podía, apretar otra cosa y borrar lo que venía después, igual yo creo que en algún otro curso tiene que haber pasado eso.</p> <p>8: lo que pasó un día cuando estaba trabajando y la número 5 estaba... escribió todo y después yo lo baje y después lo volví a subir y estaba todo, se había borrado todo.</p> <p>3: se borró todo, la dificultad es que todo se mueve como más fácil, uno lo pasa a llevar y todo se mueve, te cambia.</p> <p>1: que uno a veces escribía y se escribía por arriba, uno marcaba el lápiz pero se escribía</p>	<p>Distribución del equipamiento</p> <p>distribución</p>
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	<p>arriba, o al lado, a cualquier lado.</p> <p>1: no, lo que pasa es que al escribir, al marcar el lápiz uno escribía en el sector pero la letra se iba arriba, escribía arriba... o al lado</p> <p>6: es que resulta que el profesor en este momento no tenía, no había totalmente, digamos puesto de acuerdo en todo lo que es el tema, faltaba un poco, eh... eh... corregir algunos errores, después los corrigió y empezó a escribir normal, fue como algo técnico pero en el momento.</p> <p>6: si claro, porque después había que apretar unos puntitos para poder calibrar el computador.</p>	
<p>¿De qué forma influyo el uso de la PDI en su aprendizaje de la unidad?</p>	<p>2: por ejemplo en los dibujos, porque teníamos que comparar porque era todo porque era comparar dos objetos o personas o hartas cosas, entonces podíamos ver los dibujos, en cambio en la pizarra el teacher antes, nos iba a estar escribiendo, en cambio en la PDI, estaban los dibujos listos entonces ahí podíamos comparar al tiro.</p>	<p>Learning by doing</p> <p>Objetos reales</p> <p>Participación</p> <p>Colaboración</p>

	<p>4: cuando había que, que clasificar entre singular o plural las palabras igual se hacia mucho más fácil.</p> <p>7: que en realidad mi compañero tiene razón porque en la pizarra interactiva era todo mucho mas fácil.</p> <p>1: por ejemplo hemos visto el desarrollo del curso que todos hemos aprendido mucho mas desde que llegó el teacher manuel porque aparte hace buena dupla con la miss y los dos enseñando lo que es la PDI trabajando todo el curso, colaborando, entonces igual en lo que es aprendizaje el curso se ha superado bastante creo yo.</p> <p>6: yo creo que en mi opinion también influye aca porque, en realidad el aprendizaje que hemos tenido con el teacher manuel desde que llego con el implemento nuevo que es la pizarra que nunca antes se había usado aca, fue como mayor, antes siempre aprendíamos pero siempre como la base, ahora como que las clases donde son mas entretenidas con esta pizarra ponemos mas atención,</p>	<p>Metacognición</p> <p>Innovación</p> <p>Eficiencia</p> <p>Participación</p> <p>eficiencia</p>
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	<p>tratamos de siempre pasar a la pizarra asi vamos aprendiendo cada vez mas.</p> <p>8: igual vamos pasando mas contenidos y mas rápido.</p>	
<p>¿Qué modificarían, en cuanto al uso, harían algo nuevo, se imaginan hacer otra cosa con la pizarra por ejemplo?</p>	<p>6: eh... yo en mi opinión la pizarra aparte de ser un poco chica, por mi parte, la encuentro un poco chica, agrandaría la pizarra y otro que cuando uno escribiría era que la pizarra automáticamente escribiera en letra de computador no la letra de uno, o sea, como que transformara automáticamente las palabras de uno a letra que sea entendible. y que cuando hiciera por ejemplo algún cuadrado o algo, que la pizarra lo acomodara a su forma.</p> <p>5: que quizás el compañero se refería a eso porque nosotros tenemos una sola vez en toda semana ingles, entonces es poco el tiempo en que podemos interactuar con la PDI.</p> <p>2: yo opinaría que deberían haber mas horas de ingles porque... es importante entonces a nosotros nos sirve mucho para ir a un trabajo</p>	<p>Aplicabilidad a otras asignaturas</p> <p>Reconocimiento de oraciones</p> <p>Capacitaciones caligrafía</p> <p>computacional</p> <p>Horas pedagógicas</p> <p>Pertinente-contingente</p> <p>Transversalidad del idioma 2</p>

	<p>o algo así saber otro idioma porque así, porque subiríamos un poco más el nivel, es necesario, ya es fundamental saber inglés.</p> <p>Nº?: para ser bilingüe</p> <p>7: no tan solo para ocuparla para las clases de inglés porque la podríamos ocupar también en lenguaje, historia, matemáticas...</p> <p>Nº?: no, no</p> <p>7: solamente el teacher sabe ocuparla (...)</p>	
<p>La experiencia que tuvieron de trabajo con la PDI cumplió las expectativas que tenían ustedes en cuanto primero manejo del idioma, contenidos y las necesidades</p>	<p>2: yo tenía como un poco de nervio, miedo porque no sabía, como decía mi compañero el siente que igual uno tiene miedo a echarse la máquina a romperla, dañarla, y por eso, pero nooo... cumplió todas las expectativas yo creo, y mejor aun como no sabíamos que tantas cosas podía hacer.</p> <p>3: el aprendizaje es mayor porque como ya lo dije antes, se aprende más fácil, porque uno lo está haciendo y uno es como obvio que tenga al principio, no se miedo porque no lo sabe ocupar, es nuevo, y le da miedo el que uno la pueda echar a perder o le pueda hacer algún daño pero uno se da cuenta y a</p>	<p>Mejora en la calidad y cantidad de aprendizaje</p> <p>Metacognición</p> <p>Aprendizaje activo</p> <p>Preparación-conocimiento</p> <p>Ejercitación-práctica</p>

<p>personales.</p>	<p>veces puede pensar que también es mas difícil pero se da cuenta que no es difícil de ocupar. A lo mejor la parte que nosotros ocupamos que es yo creo la básica no es difícil de ocupar y yo si yo creo que satisfacio y ayudo mucho mas a aprender mas fácil.</p> <p>5: yo al principio cuando no se usaba la PDI, para mi la clase de inglés no era como tan entretenida y quizás la miss pasaba materia y yo como que la veía asi no en profundidad, en cambio ahora con la PDI, el teacher nos hace ejercicios y yo me doy realmente cuenta que yo se, que yo si se a través de esta pizarra, y la miss hizo un comentario el otro dia, que quizás ella decía que quizás sus niños no sabían harto de ingles pero se dio cuenta que estábamos en el mismo nivel parejo y que como que la PDI despertó nuestro conocimientos de ingles.</p> <p>6: yo pienso que tiene razón mi compañera, la numero 5, porque en mi opinión yo pensaba que con la pizarra digital íbamos a aprender mucho menos de lo que habíamos</p>	<p>Estratégias</p> <p>Motivación</p> <p>Participación</p> <p>Metacognición</p> <p>Motivación- participación</p>
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	<p>aprendido anteriormente, yo dije esto va a ser para chacoteo, se va a prestar para leseo y otras cosas eh... entonces fue como todo lo contrario, como que nos ayudo mas a aprender y me doy cuenta ahora de que se mucho mas ingles de lo que sabía anteriormente.</p> <p>2: es que no nos dabamos cuenta de nuestras capacidades o nos poníamos a tontear y no nos enfocábamos a lo que era el ingles, en cambio ahora todos tenemos, ponemos atención, estamos como todos enfocados en la clase, antes unos se iban a otro lado a hacer otra cosa, no ponían atención simplemente.</p>	
<p>¿Qué cambios observaron como en el ambiente? O, ¿Qué cosas sintieron que cambiaron en</p>	<p>8: mas interés en los compañeros porque era algo nuevo, entonces se interesaban mas en aprender y en observar las cosas que estábamos pasando.</p> <p>7: yo creo que antes se terminaba la clase de ingles y ahí quedábamos, ahora con la pizarra de repente los ___ de curso se salen</p>	<p>Interés y motivación</p> <p>Pocas horas de inglés</p> <p>Aprendizaje</p>

<p>el ambiente?</p>	<p>se termina la clase y empiezan a escribir las oraciones en ingles con la pizarra como a... o sea, a reforzarse entre ellos mismos por lo que aprendieron de la pizarra porque es mas fácil.</p> <p>5: lo que pasa es que antes cuando no estaba la PDI en nuestras clases de inglés tocaba la campana y ya... como que antes que ... faltaban minutos ´pa salir a recreo como que todos ya queríamos salir, y ahora con la PDI como que nos falta tiempo, como que quisiéramos estar mas tiempo en la sala interactuando con la pizarra o haciendo ejercicios.</p> <p>4: uno queda como con ganas después de realizar la clase, de seguir usando la pizarra interactiva.</p> <p>3: el interés es mayor en todos los que están en la sala. porque uno, lo único que quiere es que no termine la clase. Porque al menos nosotros tenemos clases el día viernes, por lo menos uno no quiere que termine la clase porque está interesado, porque esta</p>	<p>colaborativo</p> <p>Motivación</p> <p>Motivación</p> <p>Motivación</p> <p>Clima propicio (cercanía)</p> <p>Participación (montaje equipos y clases)</p> <p>Cooperación</p>
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	<p>entretenido y cuando termina la clase es como uh que fome. Entonces es como interés y la iniciativa en aprender de todos es mayor.</p> <p>2: La cercanía con el teacher y la miss es mejor porque antes como que se hacia mas fría la clase y ahora no, es como mas cercana.</p> <p>1: por ejemplo antes era como que el curso siempre estaba dividido como en tres o dos, tres grupitos, en cambio aquí los días viernes toca la campana, entramos a todos ayudando al teacher a prender la PDI, todos atentos, todos levantando la mano que quieren participar. Entonces ese es un avance grande en... para nosotros para el curso, porque antes con la miss taba la miss sola y era como pucha queremos salir, en cambio ahora con el teacher manuel porque también yo creo depende de quien enseña, porque la forma que tiene el teacher manuel enseña con la miss son super, son una buena dupla, buenos profesores entonces</p>	
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	dan ganas de seguir trabajando.	
Conclusiones	<p>6: mas que nada una conclusión como dijo usted, eh... yo pienso que al llegar la pizarra aca al liceo y al aprender a utilizarla nosotros fue una forma de aprender mucho mas eh... interactiva como dije en un principio y de aprender mas de una forma mas fácil y mas entretenida.</p> <p>5: yo, no es que igual que la miss dudemos de sus capacidades o que haya sido fome, no era eso, sino que la PDI despertó nuestras capacidades o nuestros conocimientos de aprendizaje respecto al ingles.</p> <p>8: es que lo que quiere decir es que fue como mas interactivo como mas despierta la clase, mas innovadora porque antes igual como a mi nos pasaban una guía y eso era todo el cuento y ahora como con la PDI vemos en la pizarra, hacemos los ejercicios, pasamos mas materia, nos interesamos mas en el tema.</p>	<p>Estratégias</p> <p>Interactividad</p> <p>Innovación</p> <p>Estratégias</p> <p>Cooperación</p> <p>innovación</p>

	<p>1: también apoyo lo que dice el numero 5, que no es que dudemos de los conocimientos de la miss, al contrario encontramos que ella es una excelente profesora y mas con el teacher hacen una dupla muy buena y nos enseñan bastante.</p> <p>2: que igual nosotros, no era de la miss, pero era que estábamos acostumbrados a una rutina y como siempre la rutina aburre en cambio cuando llego la PDI fue como que cambio un poco la mentalidad y nos dio como mas energía, como mas positiva la clase.</p>	
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Appendix 5: Principal's interview transcription

Entrevista al director		
Fecha: 6 de septiembre de 2010		
Preguntas	Respuestas	Tema
¿Qué políticas de uso TIC tiene este establecimiento?	<p>Gonzalo: ¿Qué políticas de uso TIC tiene este establecimiento?</p> <p>Director: Bueno, como política en general del establecimiento (...) es poder proporcionarles a los profesores, los alumnos, el mayor de los recursos de información y de comunicación, que estén actualizados, que estén actuales, digamos, vigentes, para que ellos puedan entregar una docencia de acorde con las necesidades de las empresas y del mundo del trabajo, que es donde en definitiva van a ir a desarrollar su acción los jóvenes que salen del colegio, ya que este es un colegio técnico-profesional y gran parte de los jóvenes van al mundo del trabajo.</p>	<p>Acceso a Recursos TIC</p> <p>Responder a las necesidades externas del mundo laboral</p>

<p>¿Está de acuerdo con la forma de utilización de las TIC en su establecimiento?</p>	<p>Gonzalo: ¿Está de acuerdo con la forma de utilización de las TIC en su establecimiento?</p> <p>Director: Bueno, yo creo que dadas las condiciones actuales, digamos y como lo explicaba en la primera pregunta que me hizo usted, desde luego que sí. Ahora, pienso que no hay que abusar de ellos. No hay que abusar de ellos, porque hay algunas asignaturas que requieren de una participación de los estudiantes en otra forma, como es comunicación y lenguaje (...) no todos lo podemos hacer no estas TIC, sino que también tenemos que usar el lápiz, el cuaderno, la lectura, la literatura, leer lo que corresponde para entender lo que (...) entender, digamos, lo que estamos leyendo.</p>	<p>Uso adecuado de las TIC como herramienta</p>
<p>¿Qué dificultades ve usted en la implementación de los recursos</p>	<p>Gonzalo: ¿Qué dificultades ve usted en la implementación de los recursos TIC acá en el establecimiento?</p> <p>Director: Yo creo que hace un par de años</p>	

<p>TIC acá en el establecimiento?</p>	<p>atrás la dificultad era el costo. Pero con la masificación de todos estos elementos, de estos elementos tecnológicos, creo que en este momento el costo no es un impedimento para que los colegios tengan una infraestructura, un equipamiento de este tipo en forma masiva. En el caso nuestro prácticamente todos nuestro profesores pueden contar con los notebooks, los data a disposición de ellos para que realicen sus clases. Así que a lo mejor lo que podría ser algún problema aquí que hay, es que no todos son muy peritos en el uso de estos elementos. Pero en general creo que se desarrollan bastante bien con el equipamiento que tienen. Se ayudan mucho entre ellos también.</p>	<p>Manejo de las TIC por docentes</p> <p>Colaboración</p>
<p>¿Qué apoyo se ofrece a los profesores para el uso de estos</p>	<p>Gonzalo: Usted hablaba acerca de la relación que tenían los docentes con los recursos TIC. Le quería preguntar, ¿qué apoyo se ofrece a los profesores para el uso</p>	

<p>recursos, que están presentes acá?</p>	<p>de estos recursos, que están presentes acá?</p> <p>Director: Bueno, el apoyo que les hemos ofrecidos, en primer lugar, que los tengan a disposición en forma un poco controlada para poder hacerles la manutención que corresponde (...) mantenerlos en buenas condiciones. También se les ha dado alguna capacitación por medio de la Red Enlaces y desde luego las personas que están encargadas del laboratorio de computación están permanentemente apoyándolos cuando tienen algunas dificultades con el equipo, o con los equipos, o cuando salen nuevas tecnologías o nuevas situaciones que ellos no tienen la competencia, entonces se les hace la capacitación correspondiente para que puedan utilizar los equipos adecuadamente. En este momento, por ejemplo, tuvimos la semana pasada una capacitación del FIA...</p> <p>Gonzalo: Disculpe, ¿FIA qué significa?</p>	<p>Acceso a TIC</p> <p>(apoyo, facilitadores)</p> <p>Internet</p> <p>Mantención del equipamiento</p> <p>Capacitación</p> <p>Apoyo Técnico</p> <p>(manejo de equipamiento)</p>
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	<p>Director: Fundación de Innovación Agraria.</p> <p>Lo que pasa es que en el sector rural hay un 11% de cobertura de Internet, en cambio en el sector urbano hay un 70%. Entonces el FIA llegó a un acuerdo con Entel (...) que se van a instalar más de 400 antenas a lo largo del país para que mejore la cobertura de Internet a todo el sector rural y todas las escuelas puedan acceder a este tipo de equipamiento.</p> <p>Gonzalo: ¿Esa capacitación en particular de qué se trató?</p> <p>Director: Yo estuve en la iniciación del curso, pero se dio la información para poder acceder a las distintas plataformas que corresponden al área agrícola, al área silvoagropecuaria (...) el miércoles nos va a dar una charla la señora bibliotecaria y Manuel Molina, porque ellos fueron los que fueron a la capacitación (...) duró medio día</p>	
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	<p>en la Universidad de Concepción.</p>	
<p>¿Por qué se desea implementar en el establecimiento un laboratorio de inglés?</p>	<p>Gonzalo: La siguiente pregunta tiene que ver con algo que hemos sabido, ¿por qué se desea implementar en el establecimiento un laboratorio de inglés?</p> <p>Director: Dentro de lo mismo esto, de la información y la comunicación, en este momento el inglés es fundamental, digamos, para todo lo que son (...) la relación con el extranjero. Chile pretende ser una potencia agroalimentaria (...) que es lo que está relacionado con la actividad nuestra. Para ello es muy importante el idioma inglés, ya que todas (...) los negocios, la exportación de productos agrícolas, la información que recibimos del extranjero de acuerdo a las condiciones que deben tener nuestros productos están en inglés. Y en inglés entonces es fundamental para tener una comunicación, una información adecuada con países extranjeros. Debería ser, a lo</p>	<p>Inglés como lengua franca</p> <p>Importancia del inglés en el sector agrícola</p> <p>Calidad de gestión educativa</p>

	<p>mejor, el chino o el japonés, porque son países que tienen más población. Pero en este momento el inglés es el idioma universal de los negocios..</p> <p>Gonzalo: O sea, en la diversificación en el uso y en los registros de cualquier cosa que hay...</p> <p>Director: Está todo en inglés.</p>	
<p>¿Están los profesores preparados para enfrentar ese desafío?</p>	<p>Gonzalo: Acerca de este laboratorio, de la iniciativa de laboratorio, ¿están los profesores preparados para enfrentar ese desafío?</p> <p>Director: Yo pienso que sí. Y si no están preparados habrá que capacitarlos. Habrá que acudir a alguna universidad, alguna escuela de educación para que nos capaciten a las personas para que puedan desarrollar su actividad en forma eficiente y eficaz.</p>	<p>Capacitación</p> <p>Calidad de gestión educativa</p>

<p>¿Ha escuchado alguna vez sobre los estándares TIC para la formación docente?</p>	<p>Gonzalo: Volviendo a las TIC, ¿ha escuchado alguna vez sobre los estándares TIC para la formación docente?</p> <p>Director: Tengo que ser muy franco. No estoy muy al tanto.</p>	
<p>¿Cómo se implementaron en el establecimiento los estándares TIC?</p>	<p>Gonzalo: ¿Cómo se implementaron en el establecimiento los estándares TIC?</p> <p>Director: Si no tengo una cosa, no tengo la otra. Pero nosotros, para comprar el equipamiento que tenemos en este momento, nos presentamos a un concurso interno de la corporación [*] que se llama "Computación para Todos". Y en ese sentido compramos el equipamiento que estamos en este momento a mano de los profesores, además de algunos que llegaron vía Red Enlaces del Ministerio de Educación.</p> <p>[*] La corporación a la que se refiere es</p>	<p>Adquisición de recursos TIC</p> <p>Acceso a TIC</p>

	<p><i>CODESSER, Corporación Educacional</i> <i>Sociedad Nacional de Agricultura.</i></p>	
<p>¿Cómo y cuándo recibieron las PDI y cuántas son las que hay?</p>	<p>Gonzalo: Ahora pasamos de lleno a lo que es la PDI, la Pizarra Digital Interactiva. ¿Cómo y cuándo recibieron las PDI y cuántas son las que hay?</p> <p>Director: La fecha exacta no te puedo decir, pero hace cerca de dos años que llegaron acá y llegó vía Ministerio de Educación. Un programa del Ministerio de Educación de complementar las escuelas con mobiliario escolar y algunos elementos para la docencia, dentro de los cuales venían las pizarras digitales y algunos computadores y notebooks. Así que eso llegó vía Ministerio de Educación.</p>	<p>Acceso a TIC (PDI)</p>
<p>¿Cuántas pizarras recibieron? ¿Dónde se</p>	<p>Gonzalo: ¿Cuántas pizarras recibieron?</p> <p>Director: Dos.</p>	

<p>encuentran y por qué?</p>	<p>Gonzalo: Dos. ¿Dónde se encuentran y por qué?</p> <p>Director: Se encuentran (...) originalmente estaban en la sala de castellano, o sea, comunicación y lenguaje, y matemática. Pero últimamente se cambió una, la de matemática, se llevó a la sala de computación, donde se están dictando los cursos de inglés y algunas otras asignaturas que están haciendo uso de la pizarra digital.</p> <p>Gonzalo: ¿Y por qué se tomó la decisión de tenerlas en esos lugares?</p> <p>Director: Porque pensamos que son las dos asignaturas base del conocimiento. Comunicación y lenguaje, matemática son dos de las asignaturas que nosotros creemos que son fundamentales para la formación general de nuestros estudiantes en las otras asignaturas que vienen en los ramos técnicos. Y es un déficit que tiene el</p>	<p>Conocimiento de implementación de la PDI Espacio físico de PDI Uso de PDI</p> <p>Conocimiento de los logros de aprendizaje</p>
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	<p>país en estas dos áreas. Lo hemos oído mucho (...) que el 80% de las personas no entienden lo que leen. Y bueno, y la parte matemática es un problema nacional, en todos los colegios.</p>	
<p>¿Los profesores recibieron alguna capacitación para el uso de la PDI o el ministerio llegó y las entregó?</p>	<p>Gonzalo: ¿Los profesores recibieron alguna capacitación para el uso de la PDI o el ministerio llegó y las entregó?</p> <p>Director: Se entregaron y la verdad es que se han ido capacitando con las personas que han venido de la Universidad del Bío-Bío a hacer práctica, básicamente Manuel Molina. Él ha estado capacitando a los profesores en el uso de estas pizarras. No tuvimos una capacitación del ministerio.</p>	<p>Inexistente apoyo externo</p>
<p>¿Quiénes están a cargo del cuidado y mantención de las pizarras</p>	<p>Gonzalo: ¿Quiénes están a cargo del cuidado y mantención de las pizarras digitales?</p> <p>Director: Bueno, es un conjunto... Pero</p>	

<p>digitales?</p>	<p>básicamente están a cargo de la secretaría docente y del jefe del laboratorio de computación, que en este momento, como reemplazante está Manuel Molina.</p> <p>Gonzalo: Actualmente las dos pizarras están funcionando, ¿cierto?</p> <p>Director: Sí, las dos.</p>	<p>Conocimiento de los recursos desde el funcionamiento</p>
<p>¿Ha estado usted en contacto o usado las PDI y por qué razón lo habría hecho? ¿Cuáles cree que son las mayores ventajas y desventajas que esta herramienta tecnológica</p>	<p>Gonzalo: ¿Ha estado usted en contacto o usado las PDI y por qué razón lo habría hecho?</p> <p>Director: Bueno, yo como director no estoy haciendo clases, porque mis clases son muy interrumpidas por diversos motivos, así que he estado como observador en algunas clases, pero no las he usado nunca, personalmente.</p> <p>Gonzalo: Entonces usted ha podido observar el uso de la PDI por parte de los docentes,</p>	<p>Conocimiento del uso de la PDI</p>

<p>ofrece?</p>	<p>¿y cuáles cree que son, tras haber observado las clases con la PDI, cuáles cree que son las mayores ventajas y desventajas que esta herramienta tecnológica ofrece?</p> <p>Director: Yo creo que la dinámica que se produce dentro de la sala de clases. La interacción entre el profesor, los alumnos y esta pizarra digital. Esa interacción es muy rica y ayuda a que el estudiante esté realmente atento a lo que está pasando dentro de la sala de clases.</p>	<p>Contribución de la PDI : Interacción, Motivación Orden</p>
<p>¿Se tenía algún tipo de expectativa en cuanto al uso de las PDI? ¿Qué dificultades ve en la implementación del uso de las pizarras digitales</p>	<p>Gonzalo: Cuando recién llegan las pizarras, ¿se tenía algún tipo de expectativa en cuanto a su uso?</p> <p>Director: Consideramos que era algo muy importante, un modernismo de ese tipo, y desgraciadamente nos demoramos un poco en que la gente se capacitara para poder usarlas, darles la utilidad que se merecen. Porque la verdad es que el uso de ellas le da</p>	<p>Innovación - recursos TIC Pedagógicos Ventajas de la PDI</p>

<p>interactivas?</p>	<p>un aspecto total y absolutamente distinto a la hora de clases.</p> <p>Gonzalo: Y se han cumplido esas expectativas.</p> <p>Director: Yo creo que de a poco se han ido cumpliendo, especialmente ahora que estamos en la parte de comunicación y lenguaje, preparando SIMCE, preparando a los alumnos de primero y segundo año para las pruebas que vienen y también, como tú te has dado cuenta, en inglés también, están dando un resultado bastante bueno, bastante satisfactorio. Estamos utilizándolas de una forma mucho más (...) como merece que se usen por el valor que tienen desde el punto de vista docente.</p> <p>Gonzalo: Tras haber pasado por todo esto, ¿qué dificultades ve en la implementación del uso de las pizarras digitales interactivas?</p>	<p>Contribución de la PDI – Innovación Pedagógica</p> <p>METODOLOGÍA DOCENTE</p> <p>Didáctica : uso adecuado de los recursos</p>
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	<p>Director: La verdad es que no te podría decir que le vea alguna cosa negativa. Yo creo que depende mucho del docente de darle el uso adecuado y puede ir matizando, digamos, las horas de clases con la pizarra digital y otros tipos de enseñanza que creo que no se pueden dejar de lado. Yo creo que hay montón de situaciones que no podemos ir dejando de lado. Digamos, que el alumno siga escribiendo, por ejemplo. Porque ya, prácticamente, cuando empezamos a utilizar todos estos sistemas tecnológicos, el estudiante ya prácticamente no usa el lápiz y el papel. Así que yo creo que hay que usarlas de forma racional e ir matizando estas clases un poco más dinámicas con otras más tradicionales, pero que también son efectivas.</p>	
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Appendix 6: Teacher's interview transcription

Transcripción entrevista profesora

Gonzalo: ¿Tuvo alguna experiencia anterior con la PDI? Si no, ¿por qué?

Profesora: no, nunca la había ocupado, sólo las había visto y tenía mucha curiosidad en saber cómo funcionaba, pero no había tenido la dicha de haber ocupado una pizarra de este tipo.

Gonzalo: o sea, usted la había visto acá en el liceo.

Profesora: sí, la vi.

Gonzalo: sin uso, y después se empezaron a utilizar, ¿cierto?

Profesora: sí

Gonzalo: ¿Qué cambios observó en los alumnos al trabajar con la PDI?

Profesora: ellos estaban contentos. Se sentían muy tecnológicos, se sentían muy *topísimos*, se sentían gratos, motivados o sea, hubo un cambio así *guau*. Y los chicos que no la estaban ocupando, porque eran otros cursos paralelos: "*claro porque ellos sí y nosotros no*". Entonces fue algo totalmente positivo.

Gonzalo: ¿Qué comentario podría hacer acerca de la pizarra como motivador?

Profesora: es muy motivadora, igual uno no tiene que hacer uso y abuso de esta cosa, como siempre le he dicho a mis alumnos en práctica o yo misma, o sea, uno es un professor, tiene aprender a ser profesor con lápiz, con papel, uno lo lleva en la sangre y en este caso es un medio importante que nos sirve para mejorar

nuestra calidad de las clases. Encuentro que es muy bueno estar como con la tecnología de punta, ha sido importante en lo que es este año para mí ocuparla, aprender a ocuparla, mirar y... y creo que voy aprendiendo, porque estoy aprendiendo igual que los alumnos.

Gonzalo: haciendo una especie de meta-análisis, ¿qué cambios vio en usted al utilizar este recurso tecnológico?

Profesora: eh... yo encuentro que he avanzado, es avanzado, a lo mejor me falta todavía, necesito como mas seguridad, pero he visto mejora, eh... es como no se, como mucho más practico, es mucho mas entretenido, esto es mágico, es como la pizarra mágica o la pizarra inteligente, me ahorra ciertas cosas, lo que no me gusta si es que hay que conectar tanto aparatito, tanto cablecito, pero la tecnología es así y yo ya la estoy llevando auestas conmigo, asi que encuentro que me ha servido para mejorar mis clases... y la motivación de mis alumnos están mucho mas llanos a aprender con esta pizarra que sin la pizarra, ojala que dure.

Gonzalo: em... En relación a las planificaciones de las clases, ¿se hace más complejo tratar de llevar las ideas que uno tiene al papel, al escribirlas en cuanto al uso de la pizarra digital interactiva?

Profesora: no porque ya estamos acostumbrados a planificar, llevamos tantos años planificando que es un medio audiovisual más. Así que para mí no hay mayor implicancia.

Gonzalo: En su opinión, ¿Cómo fue el desempeño y el aprendizaje de los alumnos con la PDI?

Profesora: el desempeño ha sido mejor, el aprendizaje más rápido. Ellos están motivados, ellos tienen ganas, uno aprende haciendo y aquí se ha logrado el *learning by doing*.

Gonzalo: de acuerdo a los resultados, a las notas y todo eso, ¿cree que (y por qué cree) que pudo haber influido el uso de la PDI en el rendimiento alcanzado por los alumnos?

Profesora: los hace a los alumnos más participativos, más activos, entonces es mucho más entretenido para ellos mover un monito, cambiarlo, hacer un términos pareados, rayar con la mano, rayar con el lápiz, no sé, el hecho de que yo toco, yo aprendo. En cambio si yo comparo con el curso que no tenía esta pizarra, el aprendizaje fue mucho más pasivo y los chicos igual son un poco más lentos en estos casos están mucho más pendientes, mucho más motivados así que gente motivada gente que aprende se a sacar mejores notas.

Gonzalo: y, ¿efectivamente sucedió así? ¿Hubo alguna mejora?

Profesora: si, y disculpa, ellos se sienten mejor, o sea los otros niños se sientan porque a nosotros no y a ellos si, entonces es como una discriminación que sin querer queriendo la tuvieron, afortunadamente la escuela ahora hace una semana

nos paso de sala de clases una sala completa de computación con todos los medios audiovisuales y va incluida la Smart Board, así que ahora todos los cursos tienen este nuevo material audiovisual y estamos contentos, bien por los niños, bien por nosotros y gracias a ustedes que nos permitieron alcanzar la tecnología y ponernos mas en onda como se dice.

Gonzalo: esto tal vez sirva como una especie de conclusión aunque un poco anticipada, ¿En que contribuyó la PDI al trabajo en el aula?

Profesora: eh... a un mejoramiento de la clase, a una motivación, a un aprender haciendo mucho mas activo y mucho mas eficaz. La pizarra nos ha servido, nos cambio o sea, antes era, empezamos muchos años atrás con el over head projetor, después seguimos que se yo con los cds o los VHS y después los, eh... el mundo es tan tecnológico que después seguimos con los laptops y ahora tenemos la Smart Board, entonces el mundo va cambiando rápidamente y nosotros ahora gracias a esa tecnología podemos optar a mejores cosas.

Gonzalo: esto es como volviendo al trabajo mismo docente con la PDI, ¿Por qué se eligieron los contenidos trabajados en la PDI? La idea es que nos pueda decir que contenidos se trataron y si pudieron ser en cierta medida traducidos a la PDI, y si es que por esa razón se escogieron uno y no otros para trabajar con este recurso.

Profesora: Mira los contenidos más que nada fueron al azar, porque yo tengo unidades que tengo que ver durante el año, pero no a su vez soy estricta en pasar mis materias, o sea flexibilizo. Y vimos cuales eran pertinentes a esta época del año al curso que estábamos viendo porque no todos los cursos tienen el mismo nivel ni todos saben la misma cantidad ni la misma calidad, entonces lo que vimos era la materia que mas o menos correspondía a las necesidades de los alumnos y elegimos ese contenido y esa materia y por eso se paso. Y se ajustó, se acomodó a la pizarra interactiva.

Gonzalo: Finalmente quisiera que nos dijera cualquier idea que le haya quedado en el tintero o sentimiento que tenga respecto al uso de la PDI durante este tiempo.

Profesora: eh... aprendimos. Un aprender haciendo, yo soy fanatica del Learning by doing y yo veo, o sea profesores felices, alumnos felices o alumnos felices profesores felices, eso es lo que puedo decir, que estuvimos felices en clases tuvimos un buen semestre y los alumnos están muy contentos y este medio audiovisual contribuyo a que ellos estando contentos pudieran haber aprendido un poquito mas de lo que nosotros queremos enseñarles.

Appendix 7: Extra CD-ROM contents

Extra CD-ROM contents include

1. Clases: Classes video recordings
2. Manuales y recursos: Manuals and resources for operating the IWB.
3. Planificaciones: Class planning, including both groups with resources and lesson plans used.

Extra CD-ROM requirements

- Windows Internet Explorer 6+
- Video player for AVI format
- PDF reader
- Word processor
- Presentation software