The use of a low-cost interactive whiteboard to motivate students at a telesecundaria in the East of Mexico

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<td>AR</td>
<td>Action Research</td>
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<tr>
<td>EFL</td>
<td>English as a Foreign Language</td>
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<td>ESL</td>
<td>English as a Second Language</td>
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<td>ICT</td>
<td>Information and Communication Technologies</td>
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<td>IR</td>
<td>Infra-Red</td>
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<td>IWB</td>
<td>Interactive White Board</td>
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<tr>
<td>PNIEB</td>
<td>Programa Nacional de Inglés en Educación Básica</td>
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<tr>
<td>SEP</td>
<td>Secretaría de Educación Pública</td>
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Abstract

This action research study reports on an intervention at a telesecundaria school in the East of Mexico to motivate thirty teenage learners of English. In order to do this, a low-cost interactive white board was constructed by the teacher/researcher. In addition, interactive activities were created to be used with this device. The intervention was carried out for a period of four weeks. To evaluate this action, data were collected using semi-structured interviews, focus group interviews and observation notes recorded by the teacher/researcher. Findings suggest that using this device along with the activities had a positive effect on some learners who barely participated in class. However, there were some learners who remained passive. For those on whom this action had a positive effect, the activities that seem to have had a greater impact were those of the game type. Other findings suggest that these activities not only entertained learners, but also promoted cooperation and more interaction among them. Possible conclusions are that the low-cost interactive white board does not guarantee per se that learners become motivated and engaged in the class. This depends also on the type of activities that involve learners to achieve goals such as winning in the games. Finally, other possible areas of research are suggested for future action research cycles.

Key words: Interactive white board, motivation, interactive learning, technology
CHAPTER 1: Introduction

People may learn languages for different reasons. Some people learn them for academic purposes, others for business, yet others for a personal interest such as traveling or just for pleasure. From all the languages in the world, English is the most widely used (Crystal, 2003) and its influence is everywhere. As Crystal (2003) states “The [English] language has penetrated deeply into the international domains of political life, business, safety, communication, entertainment, the media and education” (p. 30). It is the domain of education which is of particular interest for this research project.

When English is addressed in education, a distinction is made between English as a Second Language (ESL) and English as a Foreign Language (EFL). Some researchers (Al-Hashash, 2007; Bista, 2011; Krieger, 2005; Phakiti, 2006) have addressed some differences between them. In an ESL setting, English is an official language for communication and is used for a variety of purposes (Phakiti, 2006). Classes are mainly multilingual and learners live in the culture of the language being learned (Krieger, 2005). In an EFL setting, English is not an official language (Al-Hashash, 2007; Bista, 2011; Krieger, 2005; Phakiti, 2006). In the classroom, all learners are monolinguals living in their own country (Krieger, 2005) and English is not used as a means of “communication or instruction” (Phakiti, 2006, p. 20).

In Mexico, the Mexican Ministry of Education (SEP, its acronym in Spanish) includes learning English as a compulsory subject in the national curricula (Davies, 2009; Méndez, 2011; Moore, 2012). For many years, learners have begun learning English at the secondary school level and continued to learn it throughout high school and university. Nonetheless, in 2009 the National English Program for Basic Education (PNIEB, its acronym in Spanish) was launched by the Mexican Ministry of Education to expand English language education in the country (Sayer & Ramírez, 2013). Thus, today English is being learned in all educational levels.
Considering that English is not an official language for communication in our context, English fits into the category of a foreign language (EFL). Due to the characteristics of EFL, teaching the language may present some difficulties in some areas that can be overcome if they are known in advance. One area that has received special attention in EFL contexts is motivation (Bahous, Bacha & Nabhani, 2011; Cuevas, 2013; Kitjaroonchai, 2012; Hernández, 2013; Leslie, 2010; Mattarima & Hamdan, 2011; Pahlavannejad, 2013; Rehma, Bilal, Sheikh, Bibi, & Nawaz, 2014; Tahaineh & Danna, 2013; Walker, 2011; Topalov, 2012). Its importance lies in the fact that in many EFL settings, it is a decisive factor in the success or failure of learning a language. Thus, this action research study sought to investigate some issues related to motivation in EFL at a public *telesecundaria* school in the East of Mexico.

1.1 Context

The context in which this investigation was carried out is a *telesecundaria* school in the eastern part of Mexico. This is a public school that belongs to the national system of basic education. According to the Mexican Ministry of Education (SEP):

> The Telesecundaria is a school modality based on the National Educational System that, together with elementary school, provides general and common education aimed at educating learners holistically and preparing them to take part in society in a positive way. It provides education to young Mexican learners living in rural communities.


*Telesecundaria* schools use the national curriculum for this level and they grant an equivalent certificate to the one that other school modalities offer. Furthermore, in this school modality, there is one teacher in charge of a group of around thirty students as a maximum and each session lasts 50 minutes (Quiroz, 2003). Álvarez and Cuamatzin (2007), citing the SEP (1996), observe that one of the main roles of the teachers is

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1 All quotations taken from texts in Spanish have been translated by the author of this project.
...to coordinate and mediate the learning process in all the subjects by using TV programs, printed material and the recreation of situations in which learners can experience knowledge and values.

(p. 5)

In addition, the supporting material that teachers use are the fifteen-minute TV programs broadcasted by satellite; a guide of basic concepts; a learning guide; and a didactic guide (Quiroz, 2003; Álvarez & Cuamatzin, 2007).

English is one of ten subjects in the general curriculum. There is one teacher in charge of the group and s/he teaches the ten subjects. Nonetheless, as a result of an agreement between the authorities of this particular school and a group of three MA students in TEFL at a public university in East Mexico, classes lasted 90 minutes and were given three days a week in the morning shift during the time of their stay in the school. The teacher in charge worked with learners from 8:00 to 9:30 in the morning. After that, the teacher/researcher was in charge of the group of students during the English class.

The teacher/researcher worked with this group of students for over seven months, which were divided into two periods. The teacher/researcher began teaching in the middle of the school year (February-July, 2014), and worked in first grade with a female teacher, and the first months of the second grade (August-October) with a male teacher. During this period of time the teacher/researcher carried out the four stages of Action Research (AR) methodology as described by Burns (2010) and Richards (2003), which will be addressed in further sections of this work.

1.2 Participants

The participants in this research were thirty teenage students learning English as a Foreign Language at a public telesecundaria school in East Mexico. Their ages ranged from 13 to 15. Sixteen were male and fourteen were female. They all came from a medium socio-economic level. All of them were monolingual speakers of Spanish and had been learning English since they were in elementary school. The English lessons they had received were part of the National English Program in Basic Education. It is important to mention that not all of them had had
the same amount of English courses. That is to say, some learners began learning English when they were in fourth grade of elementary school, but others had not had the chance to take English classes until they were in fifth grade. No method of sample selection was used because they were all part of the same group that was investigated for this action research.

Apart from the learners, two teachers, who were in charge of the group at different moments, participated in the study. The first teacher in charge was a female who had been teaching these students for five months before the teacher/researcher had become their English teacher. She was interviewed in an initial stage of the research to find out potential problems to investigate in this context. The second teacher, a male teacher, was interviewed to evaluate the implementation of the action plan described in chapter 3. Finally it can be said that the teacher/researcher was also part of the research as an observer looking at issues in the classroom.

1.3 Description of the problem

It cannot be denied that learning a language is a demanding activity because it requires great effort on the part of the learners, but to learn a language in a foreign context is even harder because of the few opportunities to be exposed to the target language and the little value one sees in the language itself. If there is no need to use the language for a purpose, then, why should one learn it? For many decades, the educational system in Mexico has required students to learn English beginning in junior high school, but the reality is that many students do not show much interest in learning the English language.

When this AR project started, the teacher/researcher perceived that the reality in his context was similar to that of other school contexts where students did not seem to like English classes. Therefore, in order to confirm that this was a problem in this teaching context, an initial stage of the research was conducted in the *telesecundaria* where the teacher/researcher began to work. Results showed that learners lacked motivation. This conclusion was reached, based on three sets of data: the teacher/researcher’s observation, a semi structured interview with the female teacher in charge of the group, and students’ responses to a focus group
interview. There was not one, but several reasons why they were not motivated. The most recurrent ones were that learners, based on previous learning experiences did not like English because they considered that the classes were boring. Based on these data, it was decided to implement an action plan to solve this problem. A more detailed explanation of these causes and the plan are explained in chapter 3

1.4 Objectives

This research project had two objectives. The first one was to identify and verify a problem in the teacher/researcher’s current teaching practice by using different methods of data collection. Once the problem had been verified, the second objective was to design and implement an action plan to solve this problem by using a low cost interactive white board (IWB). Apart from the IWB, activities based on the contents of the course book were designed.

1.5 Research questions

Two research questions are central in this research project:

a) To what extent does the use of a low-cost interactive white board motivate learners to learn English?

b) What interactive activities can help learners become more interested in learning English?

1.6 Map of research report

This action research study is divided into five chapters. Chapter 1 introduces the topic of motivation and presents the context and participants at a public school in the East of Mexico. Then it provides a brief description of the problem under study. In addition, it describes the objectives of the study and finally, two research questions are provided.

Chapter 2 includes the literature that helps to understand this study. The topic of motivation is explored from three perspectives and the two most important
types (extrinsic and intrinsic) are described. Moreover, interactive white boards and subtypes are defined. Finally, some studies related to the use of interactive white boards to motivate are included.

Chapter 3 describes the research design. Moreover it includes the methods of data collection used in this action research study: semi-structured interviews, focus group interviews and observation notes. It also presents how the data were verified. The outcomes of the initial stage of the research to identify a problem are given. Finally, it offers a description of the action plan designed to motivate learners.

Chapter 4 presents and discusses the main findings in four categories: motivation, participation, activities that enhance language learning, and interaction and cooperation. This chapter also answers the questions that led this AR study.

Chapter 5 provides three implications of this AR study. In addition, some limitations are described. Finally, conclusions and ways forward for future research studies are presented.
CHAPTER 2: Motivation and the interactive whiteboard

This chapter presents some theoretical aspects of motivation in general. In addition, it explores some types of motivation and how they are related to learning English in an EFL context. In addition, given that this research report sought to motivate learners by means of a low-cost interactive white board, this is defined and studies which have made use of it to motivate learners are included.

2.1 Motivation

It is acknowledged that motivation is an important, if not a decisive factor in learning a new language (Bahous et al., 2011; Brown, 2007a, 2007b; Dörnyei, 2001; Kitjaroonchai, 2012; Mattarima & Hamdan, 2011; Pahlavannejad, 2013; Rehma, et al., 2014; Tahaineh & Danna, 2013; Walker, 2011; Topalov, 2012). From the body of existing research, different scholars have provided approaches which will be addressed in general terms to identify how motivation can be interpreted, as well as provide a more specific account of the type that best suits this research.

Motivation as it has been recognized (Brown, 2007a, 2007b; Dörnyei, 2001; Fernández, 2013; Keblawi, 2009) is hard to define due to the different views in different theories. Nonetheless, one definition which seems to be valid for this study is that motivation is a psychological factor that drives people to do things such as pursuing goals and the effort devoted to achieving them (Dörnyei, 2001; Brown, 2007b; Ghanea, Pisheh, & Ghanea, 2011). Though this particular view may be valid, other considerations have to be taken into account. As Brown (2007b) points out, motivation can be interpreted according to the theory of human behavior that is adopted. Thus, in order to have a wider perspective about this topic, three different perspectives are addressed in the subsequent sections based on the work by Brown (2007a, 2007b).

2.2.1 Behavioral perspective

Brown (2007b) points out that from a behavioral perspective motivation is associated with rewards; that is to say, “a behaviorist would define motivation as “the anticipation of reinforcement” (p. 85). In addition, external forces such as
parents, teachers, peers, educational requirements, and job specification among others play an important role in performing tasks (Brown, 2007a).

2.2.2 Cognitive perspective

The cognitive perspective encompasses three theories: Drive theory, Hierarchy of needs theory and Self-control theory (Brown, 2007b). The first one takes into account our innate needs or drives which are different from the reinforcements in the behavioral theory in the sense that these drives are considered innate predispositions to make decisions (Brown, 2007a, 2007b). The drives or needs are exploration, manipulation, activity, stimulation, knowledge, and ego enhancement, and were proposed by Ausubel (1968 in Brown, 2007a, 2007b). The second theory, developed by Maslow (1970, in Brown, 2007a, 2007b), is based upon the previous one, but considers that there is a set of needs represented metaphorically in a pyramidal form, and basic needs have to be fulfilled first before an individual moves to higher levels. This means that an individual will be more motivated as s/he covers basic needs before reaching higher ones. The third theory places the individual at the center, and it is the person who makes choices instead of reacting to others. Furthermore, when individuals make their own choices either in the short-term or long-term contexts, their motivation is at its highest levels (Brown, 2007b).

As it can be observed, one common characteristic of the three theories within the cognitive perspective is that motivation is driven by the individual. Apparently, there are no external forces that trigger their desires to achieve something as in the behavioral perspective, but their motivation comes from their inner self.

2.2.3 Constructivist perspective

From this perspective, there is an emphasis on the social context and individual personal choices (Brown, 2007a, 200b). It is argued that individuals will experience motivation in unique ways which are influenced by their contexts. As Brown (2007a) expresses: “Motivation in a constructivist view is derived as much from our interactions with others as it is from one’s self-determination” (p. 169).
As has been addressed in the three perspectives, motivation cannot be defined in simple terms. Instead, when approaching this issue, it has to be viewed from all the aforementioned perspectives in order to be understood. As Brown (2007a, 2007b) recognizes, learning a language may involve some principles of the three cited perspectives. This is translated in terms of a person who feels motivated to learn English as a foreign language because of the perception of the value of learning languages (reward). They experience and meet the drives of exploration, stimulation and knowledge, and finally this is felt in their particular context. Beyond these theories, there is also a distinction of the types of motivation that are most influential in language learning. For the purpose of this project, extrinsic/intrinsic motivation is presented in the subsequent sections.

2.3 Extrinsic and intrinsic motivation

The distinction between extrinsic and intrinsic motivation is made due to the importance they have been given by several scholars (e.g. Bahous et al., 2011; Brown, 2007a, 2007b; Dörnyei, 2001), in terms of having an influential role in learning a language. Extrinsic motivation refers to “anticipation of a reward from the outside and beyond the self” (Brown, 2007b, p.88) to perform an activity. Examples of rewards are “money, prizes, grades, and even certain types of positive feedback” (Brown, 2007b, p.88). In contrast, Ryan and Deci (2001) define intrinsic motivation as

...the doing of an activity for its inherent satisfactions rather than for some separable consequence. When intrinsically motivated a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards. (p. 56)

From these two types, intrinsic motivation seems to be more powerful because it is more associated to the wishes of an individual rather than to those from external agents. Furthermore, this type of motivation is founded upon the cognitive perspective addressed above and as Brown (2007a, 2007b) has pointed out, several studies seem to favor intrinsic motivation. For these reasons, the notion of intrinsic motivation is considered most appropriate for the understanding of the problem investigated in this study because there were no rewards given to
the students in this particular context; instead, the learners were expected to be motivated because of their own engagement in completing the activities using a low cost interactive whiteboard.

2.4 Interactive learning

Apart from the theory regarding motivation, the notion of interactive learning, which is supported by cognitivism and constructivism (Morgan, 2008; Al-Saleem, 2012) is central to this research. According to Morgan (2008), interactive learning can be defined as:

...instruction which involves students directly in the learning process through a variety of mental and physical activities, including reading, writing, and discussion; problem-solving, cooperative learning, simulations, and investigations. (p. 12-13)

Some investigators agree that this kind of learning promotes interaction, participation and conversation among students and the teacher. Also, it encourages different cognitive skills and engages learners mentally and physically (Bahous et al., 2011; Ghaffarzadeh & Ghaffarzadeh, 2013; Morgan, 2008). In most cases, as Morgan (2008) has pointed out, interactive learning “incorporates a variety of educational strategies, such as use of visuals, reading, writing, discussing, and manipulating concepts” (p. 20). Finally, this type of learning has been associated with the use of IWB in different parts of the world and with different educational levels (Bahous et al., 2011; Březinová, 2009; Ghaffarzadeh & Ghaffarzadeh, 2013; López & Ramírez-Romero, 2010; Morgan, 2008).

2.5 Interactive whiteboards

The use of interactive whiteboards to assist teaching is becoming a common practice at all levels of education (Bosetti, Pilolli, Ruffoni, & Ronchetti, 2011). In Mexico, the Ministry of Education (SEP) is aware of the innovations in education and has considered the inclusion of interactive white boards (IWB) in junior high schools. This implementation seeks to assist the teachers by using multimedia resources, enrich the teaching practice and catch students’ attention at this school level (Martínez & Martínez, 2007).
An interactive white board can be defined as a board on which users can interact with multimedia content. As some researchers have noticed, most IWB use the same principle, they “comprise a computer linked to a projector and a large touch-sensitive electronic board displaying the projected image” (Lin, 2012, p.4). In some cases, interactive white boards are not necessarily white boards, but any flat surface. As Bosetti et al. (2011) have pointed out “the computer screen is shown on a large surface which is touch-enabled: by touching the surface users can interact with the computer (move the cursor, click etc.)” (p. 269). The most popular IWB is the Smartboard developed by SMART technologies which has been used in different contexts to assist language teaching and learning (Březinová, 2009; Ghaffarzadeh & Ghaffarzadeh, 2013; Morgan, 2008). Nevertheless, in some cases, there is not enough money in the budget to buy one of these IWB and an alternative is the construction of one that is cheaper by the teachers themselves.

2.5.1 Low-cost interactive white board

In Mexico, prices of commercial IWB, without a projector, range from $13,500 to $24,000 MXN. The alternative that was used in this project was a $700 MXN home-made IWB. This white board was built following Lee’s (2008) procedure and consisted of two sets of components. The hardware set was a Wii remote or Wiimote of the Nintendo Wii videogame console, and an infra-red (IR) pen. The software set was software provided by Lee (2008) which is cost-free. As with the other IWBs, a computer and a projector were needed.

One piece of software connected the Wiimote to the laptop using a Bluetooth connection. Once it is connected, the Wiimote tracks the IR emissions of the pen through another piece of software any time it points to the image projected on a flat surface (in this case a normal classroom white board). Finally, the language activities were created using PowerPoint or flash software. This technology has already been used around the world with good results to assist teaching and learning (Bosetti, et al., 2011; Lin, 2012; Lin, Jen, Wang, Lin & Chang 2011; Lin et. al 2011; López & Ramírez-Romero, 2010). Nonetheless, it has to be mentioned that there are a number of limitations due to some technical issues that may be encountered, but which can be solved.
2.6 Studies on motivation using interactive white boards

Nowadays, the use of technology to assist language teaching and learning is increasing (Ishtaiwa & Shana, 2011). This is demonstrated by the growing number of investigations around the world. One of particular interest is about the use of IWBs and its contribution to language learning and teaching. As some researchers have concluded, IWBs contribute to motivate learners, engage them and enhance interaction among them (Al-Saleem, 2012; Benmansour & Meziane, 2013; Březinová, 2009; Fatih, 2008; Ishtaiwa & Shana, 2011; Javidi, Jafizada, & Soori, 2014; López & Ramírez-Romero, 2010; Yáñez & Coyle, 2011). However, these investigations have focused on researching the commercial version of IWBs. Hence, it is necessary to clarify that this research reports on how a low-cost IWB may contribute to motivate English learners.

2.7 Games in language teaching and learning

A final theoretical consideration for this investigation is the notion of games in teaching and learning English. For this investigation, some game activities were designed and others adapted to be used with the IWB. A game can be defined as any activity that has rules and a purpose, is amusing and promotes some kind of learning (Mubaslat, 2012; Tuan & Minh, 2010). In the field of language learning, some researchers emphasize that language games should not be seen as time-fillers or ice-breakers but as activities in which learners use the language during the game (Mubaslat, 2012; Yolageldili & Arikan, 2011).

Regarding the importance of games, it has been acknowledged in some studies that games contribute to enhancing language learning because they create an environment which places the learner at the center of the learning process (Uzun, 2009). In addition, games are considered motivating for learners at any level (Al-Issa, 2009; Kumar & Lightner, 2007; Mubaslat, 2012; Uzun, 2009; Yolageldili & Arikan, 2011). Finally, games are said to contribute to promoting participation, interaction and cooperation among learners to achieve goals in the games (Kumar & Lightner, 2007; Talak-Kiryk, 2010; Tuan & Minh, 2010; Yolageldili & Arikan, 2011).
With the afore-mentioned ideas in mind, some of the games used in this investigation comprise ordering or arranging games, matching games and guessing games.

This chapter has presented the major topics that support this research. The following sections deal with the methodological tools used to collect data in order to identify and understand a problem in a particular teaching context of the teacher/researcher. Moreover, the action plan used to solve the problem is described.
CHAPTER 3: Methodology

This chapter presents the research design based on Action Research. It describes the three data collection methods used to carry out the first stage of the research to identify and understand a problem at a *telesecundaria* school. The same methods were used to evaluate the implementation of the action plan. Outcomes of this initial research are presented as a way to justify the implementation of an action plan to solve the identified problem. Finally, a description of the action plan that was implemented is provided.

3.1 Research design

Teachers may face difficulties in their teaching practice; however, they have the opportunity to overcome these difficulties by carrying out actions inside their classrooms. Given that teachers form a mental picture of their students and their teaching situation, the task of identifying the problem and proposing solutions is sometimes not that difficult to do. It is by means of continuous reflection, research, planning, and implementation of actions that teachers may overcome their difficulties. The actions that they carry out can be systematized by using several research tools, but one way that has been used commonly by teachers is by carrying out AR in the classroom. The subsequent sections aim at providing definitions of this type of research, its main features, how it is different from other types of research (specifically from applied research) and the four stage model that was used.

3.1.1 Defining action research

Action research is considered as a tool in the field of education to describe a process that includes the identification of a problem in the classroom, the data collection techniques, and the interpretation of the data (Finch, 2005). Farrel (2007) goes beyond this view and adds that AR "involves inquiring into one's own practice through a process of self-monitoring that generally includes a cycle of planning, acting, observing and reflection on an issue or problem in order to improve practice" (p. 1). Similarly to Farrel's definition, Donato (2003) argues that AR
provides teachers with information on aspects of their practice, but apart from this, it can also empower them “to take leadership roles in their local teaching contexts” (paragraph 1). Ferrance (2000) also sees action research as an activity in which teachers can work collaboratively in order to find solutions to problems they encounter in their classrooms and whose solutions impact their teaching practice and learners’ achievement. She adds that AR “allows practitioners to address those concerns that are closest to them, ones over which they can exhibit some influence and make change” (Ferrance, 2000, Introduction). Finally, according to Burns (2010), in action research, teachers, “intervene in a deliberate way in the problematic situation in order to bring about change and, even better, improvements in practice” (p. 2).

Summarizing the different definitions of AR, it can be said that AR is a tool that teachers can use to detect possible problems in their teaching practice and bring change into their classrooms through a systematic process that involves planning, action, observation and reflection. In addition, this process can be carried out collaboratively.

3.1.2 Characteristics of AR

Burns (1999) suggests that whereas AR “is driven by practical actions from which theories about learning and teaching can be drawn” (p. 31), in other types of research, researchers try to test theories and prove them and in most cases, the implementation is left to the practitioners. In AR, in contrast, the implementation is part of the research process (Burns, 1999). Another characteristic of AR is that it is carried out using qualitative methods in “naturally occurring settings” (p.24). Although Burns (2010) informs of some criticism of AR regarding the data being too subjective, she argues that researchers can triangulate their methods of data collection. By doing this, the research becomes more reliable and valid. Burns’ (2010) definition of AR can be used as a starting point to understand the differences between AR and other types of research because it emphasizes the practical use of research. The immediate results of AR can serve to help solve the problems in a particular context.
The type of research that is probably closest to AR is Applied Research because it deals with doing research whose outcomes are meant to be applied to different contexts. However, there are marked differences between them. Burns (2010) compared and contrasted them as a way to delineate some features of each type. In applied research, a researcher’s answer to a problem usually serves to add more information to “existing ‘scientific’ evidence” (p.13). However, findings or results of the research are not necessarily applied immediately by the same practitioner. In addition, in some cases the methods of data collection are more structured and controlled because researchers often seek to generalize their findings in similar situations (Burns, 2010). Finally, this author continues, “applied research is usually concerned to connect with and test out grand (that is well-known public or general) theory from the field” (p.14). Thus, the researcher presents information from a particular area of study to display existing knowledge of the topic and to use it as a theoretical framework for the study.

In AR researchers do not seek to provide information that can be generalized and applied to similar situations; instead, they seek to understand the problem and provide immediate practical solutions. Regarding the selection of data collection techniques, AR practitioners use “a much more flexible and open-ended approach, selecting and changing the methods as needed and as new insights emerge” (Burns, 2010, p. 13). Finally, researchers using this methodology create their own theories based on their personal knowledge resulting from their explorations. In Burns’ (2010) words, “they are looking for a theory for practice rather than a theory of practice” (p. 14).

3.1.3 The action research cycle model

In the previous section, some differences were addressed as a means to understand AR in contrast to other types of research and specifically to applied research, which is close to AR in terms of applicability. This section outlines the components of the action research cycle model proposed by Burns (2010).

Citing Kemmis and McTaggart (1988), Burns (2010) points out that AR consists of four phases. These phases are: planning, action, observation, and
reflection. The graphic description is shown in figure 1. An explanation of each of the phases has been included below.

**Planning:** Burns (2010) describes this phase as the moment when researchers identify a problem. After the identification of the problem, the next step is to decide on the type of research that will be carried out, which can be either descriptive or interventionist (Richards, 2003). In addition, at this stage researchers think of how data will be collected and analyzed, who the participants will be, and the possible ways to improve the problem (Burns, 2010; Richards, 2003).

**Action:** After having planned what will be done for the purpose of the research, in the phase called “action”, researchers intervene in the teaching situation by applying the previously designed plan “over an agreed period of time” (Burns, 2010, p. 8). During this phase, more planning is done as a result of questioning the “assumptions of the current situation” (ibid).

**Observation:** During this phase, researchers become involved in the observation of the changes and effects that occur (Burns, 2010; Richards, 2003). In addition, they have to register what happens. As Burns (2010) points out “it is a data collection phase where you use ‘open eyed’ and ‘open-minded tools to collect information about what is happening” (p. 8).

*Figure 1: AR cycle model taken from Burns (2010, p. 9)*
Reflection: This phase can be considered as a closing stage of the AR cycle because it closes the cycle by reflecting on and evaluating what researchers did during the previous stages (Burns, 2010). However, from the conclusions that they draw, they can start a new cycle of AR in order to improve their previous work (Richards, 2003).

The previous sections have provided information regarding the type of research that was used in this study. First, action research was defined by considering different points of view. Second, a comparison was made between AR and Applied Research. Third, a description of the AR cycle model was given, with its main phases: planning, acting, observing, and reflecting.

3.2 Identification and understanding of the problem

In the preceding section, it was pointed out that AR uses methods of data collection in a way that is more flexible than in Applied Research. The methods can vary depending on the purpose of the research; in other words, as Burns (2010) observes: “it’s all a question of matching your data collection methods with what you want to find out” (p. 54). What follows is a description of the data collection methods that were used for the purposes of this study both in the initial research stage and after the implementation of the action plan. It starts with a general overview of what an interview is and some of its advantages. Later, descriptions of semi-structured interview, focus group interview, and classroom observation are provided.

3.2.1 Interviews

Interviews are widely used in qualitative research (Burns, 2010; Griffee, 2012; Harwell, 2011; Kajornboon, 2005; Koshy, 2005; Mackey & Gass, 2005; Marshall & Rossman, 2006; Mora, 2012; Richards, 2003; Torkar, Zimmermann & Willebrand, 2011; Wisniewska, 2011). Generally speaking, an interview is considered as a conversation (Marshall & Rossman, 2006; Torkar et al., 2011). Burns (2010) considers that an interview “is a conversation that explores your focus area” (p. 74). Richards (2003) provides a broader description of the concept and states that “A popular way of capturing the essence of the qualitative interview
is to describe it in terms of everyday interaction, as ‘conversation with a purpose’” (p. 50). He suggests that one important aspect between an ordinary conversation and an interview is ‘listening’. In the former, ‘listening’ is used to participate “to find the right thing to say so as to either encourage the speaker to continue or find ways of bringing our own points into the talk” (p.50). In the latter, the main concern is to encourage the speaker. Therefore, the needed skills “are still collaborative but they are focused on drawing from the speaker the richest and the fullest account possible” (p.50). In addition, Griffee (2012) complements these ideas by pointing out that an interview is also “a person-to-person structured conversation for the purpose of finding and/or creating meaningful data which has to be collected, analyzed, and validated” (p.159). Finally, Koshy (2005) states that, “The main purpose of conducting interviews is to gather responses which are richer and more informative than questionnaire data” (p. 92).

Apart from the above-mentioned definitions, Mackey and Gass (2005) point out that interviews have some advantages, such as allowing to investigate non-observable phenomena (e.g. perceptions or attitudes); eliciting further or more complete information if initial answers are unclear or not related to the topic; lastly, “Interviews can also be conducted in the learner's L1, thus removing concerns about the proficiency of the learner impacting the quality and quantity of the data provided” (p. 174).

**3.2.2 Semi-structured interview**

A semi-structured interview is a type of interview that is widely used in qualitative research (Burns, 2010; Harwell, 2011; Kajornboon, 2005; Mackey & Gass, 2005; McDougald, 2013; Mora, 2012; Richards, 2003; Wisniewska, 2011). Therefore, as action research fits into the qualitative category, the semi-structured interview is a valid type of data collection method. A semi-structured interview is less rigid than a structured interview in which the interviewer has to follow a set of predetermined questions from which he cannot deviate (Griffe, 2012). In semi-structured interviews, the interviewer uses a guide with a series of questions (Mackey & Gass, 2005) whose order can be changed (Kajornboon, 2005). In addition, in this type of interview, the interviewees express their points of view
more openly (Flick, 2009) and the interviewer can check for clarification or can probe if more information is needed (Griffe, 2012; Kajornboon, 2005; Mackey & Gass, 2005). However, semi-structured interviews also have some drawbacks for inexperienced interviewers. For example, relevant data may be missed if the interviewer does not probe (Kajornboon, 2005) or in other cases, “The interviewer may not ask questions that evoke long narratives from participants” (Marshall & Rossman, 2006, p.102).

In this AR study, the teacher/researcher conducted a semi-structured interview with each of the teachers in charge of the group (see Appendix A). The aim of the first semi-structured interview was to explore classroom issues to detect possible research problems for an action research study. The second semi-structured interview aimed at evaluating the implementation of the action plan. Thus, an initial set of questions was designed by the teacher/researcher keeping in mind the possibility of changing the order of the questions or of probing if necessary. Some difficulties were experienced by the interviewer in the initial stage of the research and in the evaluation of the action plan because when answering the first questions, the interviewees had already provided information that was going to be dealt with in the subsequent planned questions. To solve this, it was necessary to re-adjust the questions during the interviews.

### 3.2.3 Focus group interview

A focus group interview was used for both the initial stage of the research and the evaluation of the action plan (see Appendix B). Krueger and Casey (2010) have provided some characteristics that are essential for focus group interviews. For these scholars, in focus groups “the questions are focused. (…) There is no push for agreement or consensus, the environment is permissive and nonthreatening, the participants are homogeneous, the group size is reasonable, the group is guided by a skillful moderator, and the analysis fit the study” (Krueger and Casey, 2010, pp. 381-384).

Different researchers agree with the idea that a focus group interview is a method of data collection in which several people are interviewed at the same time (Griffee, 2012; Koshi, 2009; Krueger & Casey, 2010). The participants in the
interview are guided by a moderator who uses a flexible interview guide of open-ended questions or questioning route (Koshi, 2009; Krueger & Casey, 2010). For Palys and Atchison (2007), a focus group interview “is essentially a group version of the face-to-face interview” (p. 158). However, as Cohen, Manion and Morrison (2011) suggest, in this type of interview, participants interact among themselves discussing a topic provided by the researcher and yield “a collective rather than an individual view” (p. 436). The recommended size for the groups may vary but they usually range from six to eight participants (Fowler, 2009, cited in Cohen et al., 2011; Koshi, 2009; Krueger & Casey, 2010).

Advantages of focus group interviews include the following. They are time-saving (Cohen et al. 2011); the interaction between researcher and participants allows him/her to clarify information - “ask questions to follow-up emerging ideas” - and observe participants’ “non-verbal behavior” (Koshi, 2009, p. 14). Another advantage is that the focus group interview reduces the participants’ anxiety and nervousness of being interviewed individually “allowing ideas and thoughts to be triggered by what others in the group say” (Burns, 2012, p. 77).

As to their disadvantages, this type of interview usually produces a large amount of data, which may be difficult to analyze (Cohen et al., 2011; Koshi, 2009). Moreover, some members may be more dominant in their participation and exclude others from contributing to the discussion (Cohen et al., 2011). Apart from these disadvantages, Koshi (2009) argues that the moderator has to be able “to keep discussions on topic and data relevant” and in some cases, the moderator may “influence participants’ responses and interaction” (p. 14). Finally, citing Patton (2002), Flick (2009) states that a weakness of this method “is the limited number of questions you can address and the problems of taking notes during the interview” (p. 196).

In this study, ethical issues were very important. Consequently, the activity and the purpose of the interview were first explained to the participants; then, they were informed that the data emerging from the discussion would be used for research purposes only and that the participants’ identity would remain anonymous in the research report. At the end of the activity, students were thanked for
participating and they were reminded again that the final report would not reveal their identity.

The final version of the focus group interview was adapted to suit the cognitive abilities of the participants who are teenagers learning English in a *telesecundaria* school. First, the teacher/researcher read the questions one by one and asked the participants to discuss them. Then, in order to report their responses, they were given a 90 x 70 cm sheet of paper in which they were asked to write their responses and were told that they had to present the information in the form of a poster (see Appendix A). Four groups were formed with the students who attended school that day. After they finished writing their responses, the participants presented their posters. This was done to elicit more details concerning their responses. However, some problems emerged during the implementation of the activity. For instance, forming the groups was time-consuming and some learners were reluctant to work in their groups. In addition, in some groups not all the learners provided the answers to the questions. The strategy of asking questions during the poster presentation helped to solve this problem to some extent because the information was enriched.

### 3.2.5 Observation

The third method of data collection was based on observation. Observation is a method of data collection favored in qualitative research (Burns, 2010, 1999; Gay & Airasian, 2003; Griffie, 2012; Mackey & Gass, 2006; Marshall & Rossman, 2006). It consists of systematically and intentionally recording actions, events, interactions, relationships, among other aspects in a given setting (Burns, 2010, 1999; Griffie, 2012; Mackey & Gass, 2006). This means that observation has to be done on a regular basis and with a purpose in mind. Moreover, in defining some of the characteristics of observation as a data collection method, some authors have addressed the roles that researchers can take and the types of observation: ‘participant’ or ‘non-participant’ (Burns, 1999), ‘structured’ or ‘non-structured’ (Mackey & Gass, 2006), or ‘closed’ and ‘open’ (Griffie, 2012).

One of the advantages of using observations is that it helps to “collect large amounts of rich data on the participants' behavior and actions within a particular
context (Mackey & Gass, 2006, pp. 175-176). In addition, when the researcher takes on the role of a participant, the participants may not feel threatened as they would when observed by an external observer (Griffee, 2012). The use of the ‘non-structured/open’ observation allows the researcher to explore different phenomena without focusing only on one particular aspect of the classroom. However, there are some disadvantages. It can be said that not everything can be observed and recorded and in some cases there is ‘observer bias’ because the interpretation of the events is carried out through the teacher/observer’s own lenses (Griffee, 2012).

In this action research study, the type of observation that was utilized was observation notes, which is participant, non-structured and open. In Observation notes the data are recorded by describing and narrating (Burns, 2010). Notes are recorded by the researcher or an external observer. These notes usually include “descriptions and accounts” of different aspects of the classroom, such as “the physical layout, verbal and non-verbal information, the structure of the groups, or the sequences of activities and tasks” (p. 67).

3.2.6 Verification of data

Triangulation refers to a combination of data collection methods (Griffee, 2012; Richards, 2003). However, Richards (2003, following Denzin, 1970) mentions another three types of possible triangulation: “data triangulation, investigator triangulation, and theory triangulation” (p. 251). As it is documented in the literature, triangulation helps to strengthen the data that have been collected, making our conclusions more objective (Burns, 2010). Additionally, it also helps to avoid any bias (Burns, 2010; Griffee, 2012; Mackey & Gass, 2006).

Apart from triangulation, in some cases another tool is suggested known as ‘member checking’, which consists in showing the findings of the research to the participants so that they assess that the data are accurate (Leech & Onwuegbuzie, 2007). Nevertheless, it has been argued that for ethical considerations it is also possible to omit doing ‘member checking’ due to the fact that “informants may have a tendency to internalize the information they have read, which could affect their subsequent responses” (Krefting, 1991, p. 219).
Considering the above views, for the purpose of this study, only triangulation of data collection methods was chosen. This tool was used to understand the phenomena inside the classroom and to evaluate the implementation of the action plan. The teacher/researcher compared and contrasted the data collected from the semi-structured interview conducted with the teachers; the information gathered from the focus group interviews and some of the observation notes made by the teacher/researcher. The outcomes of the initial research are described below and the findings of the evaluation of the action plan are reported in chapter four following the same process.

3.3 Outcome of initial research

Table 1 displays the main findings that resulted from the data collection in the initial research

<table>
<thead>
<tr>
<th>Findings: interview</th>
<th>Findings: focus group</th>
<th>Findings: observation notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of interest</td>
<td>Dislike of English</td>
<td>Lack of interest</td>
</tr>
<tr>
<td>Rejection to work</td>
<td></td>
<td>Unwillingness to participate in the activities</td>
</tr>
<tr>
<td>Lack of engagement</td>
<td></td>
<td>Unwillingness to complete the activities.</td>
</tr>
<tr>
<td>Not doing homework</td>
<td></td>
<td>Lack of stimulus</td>
</tr>
<tr>
<td>Lack of effort to learn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Outcomes of initial research

As may be seen above, the teacher in charge of the group and the teacher/researcher share some common ideas about the learners. In most cases, the perceptions about the learners’ attitudes towards learning seemed to be negative. Both of them perceived that learners seemed uninterested in learning English. In addition, the first teacher in charge and the teacher/researcher observed that learners made few attempts to learn and participate in their activities (e.g. homework and in-class activities). Finally, the teacher/researcher’s perception was that learners seemed to lack stimuli to do the work. This perception was supported
by the fact that any time the teacher/researcher announced that the activities would be registered in their daily participation, learners made an effort to complete them.

The findings of the focus group are mainly an account of learners’ ideas about learning English. Most of them expressed that they did not like English very much. Their comments seemed to suggest that the causes for their dislike to learn English were the result of previous negative learning experiences, and also because of the current methodology employed by the teacher/researcher. Though it was not reported in the findings of the focus group interview, two of the questions sought to explore what they had liked about their previous English classes and how learners would like their English classes to be at the time of the initial research phase. In the first question, they asserted that they had liked the use of games in class and the use of playful activities “I liked her games” (Team 4). In the second question, they provided similar answers “we want to have more games in class” (Team 1).

The information that learners provided regarding what they had liked about learning English in the past and how they would like their classes to be at the time of the initial research phase contributed to the understanding of why they projected such negative attitudes towards learning, why they were unwilling to complete their academic activities, and why they did not engage in learning in general. However, no generalization can be made because some learners did want to participate and made an effort to learn. It was observed, as well, that they seemed to need a stimulus to complete their academic activities.

Based on all the data including the final observations about learners’ opinions of why they liked or disliked English, the conclusion that was drawn was that they appeared to favor activities that motivated them and engaged them in learning. Therefore, the research topic for the study was motivation.

3.4 Action Plan

Bearing in mind the afore-mentioned findings, in this AR study it was decided to implement an action plan to motivate learners using a low-cost IWB. One of the strongest reasons that support research about motivation is that authors such as Bahous et al. 2011; Brown, 2007a, 2007b; Dörnyei, 2001; Kitjaroonchai,
2012; Mattarima and Hamdan, 2011; Pahlavannejad, 2013; Rehma, et al., 2014; Tahaineh and Danna, 2013; Walker, 2011; Topalov, 2012, consider that motivation is a key factor in succeeding or failing to learn a language.

The reasons for using an IWB are varied. One is that most teenage learners at this *telesecundaria* school are acquainted with technology because most of them use smartphones, tablets, and laptops. Another one is that in this *telesecundaria* school, the teacher in charge of the group teaches the lessons assisted by a TV set (one of the main features of the *telesecundaria* school system) and other technological devices. Finally, this technological tool has also been used in several studies carried out in other contexts around the world, most of which report good results concerning motivation issues. These studies include those by Al-Saleem, 2012; Benmansour and Meziane, 2013; Březinová, 2009; Fatih, 2008; Ishtaiwa and Shana, 2011; Javidi, Janfaza, and Soori, 2014; López and Ramírez-Romero, 2010; and Yáñez and Coyle, 2011.

3.4.1 Implementation

The implementation of the action plan consisted of two stages. The first one was the construction and piloting of the low-cost IWB. The second one was the creation and implementation of interactive learning activities based on the contents of the students’ book. By interactive it is meant that students were able to manipulate the exercises in each activity by means of the low-cost IWB. Each of these stages is described in more detail below.

Building the low-cost IWB took approximately one month. As it was explained in chapter 2, this technological device consisted of hardware and software. The hardware was an IR pen and the Wii remote control. The first piece of hardware was built and tested by the researcher. This is why building the device took this long. The second piece of hardware was not built, but bought at a store. Once the two pieces of hardware had been tested and proved to be working properly, the researcher used the required software and used the low-cost IWB with a different group of students. In this test, all the components worked properly and were later implemented with the participants in this research. The image below shows how it was set up in the classroom.
The second stage was the implementation of the interactive activities (see Appendix C). The design of these activities made use of varied software. In the piloting stage, the software Hot Potatoes was used. However, some difficulties arose with Hot Potatoes, so it was decided to use PowerPoint and GenMagic software for all the subsequent activities. Additionally, interactive games were also downloaded from the website http://gamestolearnenglish.com/. These interactive games were used as warm-ups or to review vocabulary. The table below shows the implementation, the topics and the activities used in a four-week period.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Daily routines</td>
<td>Ordering a text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unscrambling sentences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matching listening activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Memory game: verbs</td>
</tr>
<tr>
<td>2</td>
<td>Describing physical appearance</td>
<td>Ordering words</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matching exercises</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matching opposites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Memory game</td>
</tr>
<tr>
<td>3</td>
<td>Describing animals</td>
<td>Matching pictures with words</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Word search puzzle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Game: reveal the image</td>
</tr>
<tr>
<td>4</td>
<td>Health and body</td>
<td>Matching exercise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Word search puzzle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ordering letters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Game: hangman</td>
</tr>
</tbody>
</table>

*Table 2: Description of the action plan*
As it can be seen from table 2, for each topic, three or four activities were designed depending on the length of the topic. There were two approaches to the use of the low cost IWB in the three sessions of English per week. In the first approach, the teacher and students studied the topics for one or two sessions without using the device and completed some activities in the students’ book. In the third session, the teacher/researcher used the interactive activities so that students would review and practice the topics by using the interactive material.

In the second approach, the teacher/researcher used the IWB in the first session to introduce the new topic with a warm-up (usually an interactive game) with the help of the device. Later, he gave a short presentation of the new topic and used interactive activities based on the exercises that were in the book, but that had been transformed into interactive activities. With this approach, students did the activities on the IWB and were asked to complete the exercises in their books as homework.

This chapter has described the research design of this investigation, the data collection techniques, the outcomes of the initial stage of the research and the action plan implemented to motivate students at the telesecundaria school. What follows is the evaluation of this implementation.
CHAPTER 4: Findings

This chapter describes the evaluation of the implementation conducted during a four-week period. It provides a summary of the main data collection techniques, and finally, it presents the findings that resulted from the data from three different sources.

4.1 Evaluation of the action

In this action research, formative and summative evaluations were considered. In order to do this, three data collection techniques were used: a semi-structured interview, a focus group interview (FGI) and observation notes (ON) taken during the implementation sessions. The focus group interview and the semi-structured interview became part of the summative evaluation whereas the observation notes contributed as the formative evaluation. A review of the reasons for choosing these data collection techniques was given in chapter 3. The findings described below resulted from the triangulation of the data obtained from the sources previously mentioned and are reported in four categories, which are: motivation, participation, activities that enhance language learning, and interaction and cooperation.

4.1.1 Motivation

The central problem that this action research aimed at solving was the lack of motivation of thirty teenage students at a telesecundaria school in the East of Mexico. Based on the analysis of the data, students seemed to have become motivated by the use of the IWB and the interactive activities. The comments below demonstrate how this conclusion was reached; they are some of the responses to one of the questions in the focus group interview ‘Did the use of the IWB motivate you to learn English? Why?’

When contrasted with the responses that they provided in an earlier stage of this research, one of the teams commented that learning and understanding English

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2 All comments provided by the students and teacher in charge have been translated from Spanish to English
was easier with the use of the IWB, which suggests that it contributed to increasing their motivation to learn the language

Yes because the exercises helped very much and it was easier to learn, [it helped] to explain better the words that we did not understand

(Team 2, FGI)

Similarly, another team considered that the use of the IWB was amusing as well as entertaining while they were learning, which again seems to reinforce the increase of motivation.

Yes because it was amusing and using the IWB was easy. Because we learned in an entertaining way

(Team 4, FGI)

A comment made by the second teacher in charge of the group also contributed to the students’ opinion about their increase of motivation. His response was made to the leading question ‘I would like you to tell me if you noticed that the use of the IWB motivated students to become interested in the English classes’.

I consider it did because it is an interesting interactive resource for teenagers. They are curious about using it and they become more motivated towards the class and this has an effect on the subject, on their scores

(T-2)

A final source of evidence that also supported the students’ perception was the teacher/researcher’s notes. It was observed that there was an eagerness to participate more to complete the activities, in this case, activities of the game type.

...learners played hangman using the category of professions. They enjoyed playing [hangman] and were eager to participate

(ON-1)

Finally, although learners faced technical problems when they used the device, this did not seem to be an impediment to continue learning, leading to the belief that they were motivated.

Even though it was hard for them to manipulate the IR pen, they were interested in completing the activity despite their failures.

(ON-2)
As may be observed from these examples, there seems to be a shared perception that students were motivated by the use of the IWB. This finding is similar to what other investigators reported after implementing the use of this type of technology in the classroom (Al-Saleem, 2012; Benmansour & Meziane, 2013; Březinová, 2009; Fatih, 2008; Ishtaiwa & Shana, 2011; Javidi et al. 2014; López & Ramírez-Romero, 2010; Yáñez & Coyle, 2011). For example, Yáñez and Coyle (2011) suggested the following about the use of the IWB to motivate learners in their study:

The way in which information is presented, through colourful and interactive game-like activities, is seen by the pupils as motivating and makes learning fun for them. That is probably why all of them agreed they would like to use the IWB more frequently.

(p. 454)

From this quotation and the comments mentioned above, there is an interrelationship between the design of the activities and the IWB. Thus, using the IWB does not guarantee *per se* that learners will become motivated. This has to be taken into account when decisions are made about the use of this device in the classroom.

4.1.2 Participation

It has to be remembered that in the initial stage of this research study, low student participation was a related issue to the identified problem of motivation. The data obtained during the implementation of the action plan suggest that the use of the IWB enhanced student participation in the class. The type of participation was either individual or in groups. For activities where students had to complete exercises, the participation was mostly individual. When there was a game such as Hangman, Reveal the image, or in the listening activity, students worked in groups and often collaborated while doing the activity. Some of the students’ opinions are displayed below.
[the activities that we liked were:] parts of the body and ordering words to make descriptions, reveal the image, match words with images in the routines and the use of antonyms because they made us participate

(Team 1, FGI)

Similarly, an interesting comment made by the teacher in charge of the group supports the increase of participation in the classroom.

I consider that the electronic Whiteboard is an essential tool so that the apathetic student will go to the board and his attention is caught.

(T-2)

These comments are reinforced by some of the information recorded in the observation notes.

In this activity (matching parts of the body), I could notice that they were still excited about participating in the activity but what struck me the most was that one of the girls who never participated asked to correct some of the parts of the body that her classmates had matched incorrectly

(ON-5)

Based on the comments displayed above, there seems to be a positive influence of the IWB not just to increase learners’ participation, but also their collaboration. In a previous study conducted by Březinová (2009), a difference was noticed in the participation between pupils who used a normal white board and those who used an IWB: “The pupils who usually do not interact were eager to come to the IWB and partake” (p. 117). Moreover, in his investigation about teachers and students’ attitudes towards the use of IWBs, Fatih (2008) concluded that “In IWB-based lessons, students are more motivated and participate in the activities more” (p. 100). However, the activities also seem to be of great importance and seem to influence students’ participation as well, as was confirmed by the comments made by the learners in this study.

4.1.3 Activities that enhance language learning

As was observed earlier, it has been suggested that the IWB was not the only thing that contributed in motivating the learners. It seems as if the students’ motivation depended on the combination of the device and the activities. According to students’ perceptions, some activities helped them to learn new words and to understand those words, possibly because they were visually presented to them
and they were able to interact with the contents. In their comments, students stated that:

Matching images with words, Word search puzzle, listening activity, and hangman. These activities helped us because it was easy to understand... because we learned words (names of animals) and how to describe people

(Team 5, FGI)

Regarding this finding, Fatih (2008) suggested in his study that “different types of activities and materials may make it possible to help all of them [students] understand topics more easily” (p.73). This seems to confirm what the students of this study perceived. In a different study, Yáñez and Coyle (2011) found that "children enjoy the tactile element and the versatility of the activities the IWB offers" (p. 454). However, apart from the activities of content, students in the telesecundaria had a stronger preference for games. Most of them agreed that they had liked games the most. Although they believed that some of the activities were only activities to have a good time in the classroom, they had a pedagogic purpose, which was mainly to learn vocabulary. This was also registered in the teacher/researcher’s notes.

The first activity was a game called Reveal the image. ... They took turns to select one square and ... a piece of a big image was uncovered. When students thought that they knew what image it was, they said the name. They enjoyed this activity very much.

(ON-4)

4.1.4 Interaction and Cooperation

In studies using IWBs in classrooms, such as Coyle, Yáñez, and Verdú, 2010; Fatih, 2008; Morgan, 2008, it has been reported that this tool promotes interaction between teacher and students or students and students. In other studies (for example, Toscu, 2013) research has been conducted about the effect of IWBs on interaction. Although interaction was not a central topic to the identified problem, it was observed that when students in this AR study used the IWB, they interacted less with the teacher and more among themselves. This interaction seemed to contribute positively to the correct completion of the activities through
peer assistance. An explanation for this interaction could have been the fact that students had to work in teams in some activities, mainly in games. This is illustrated by a comment made by the teacher in charge:

The student who went to the board, the representative of the team, the team helped him and they shouted “move that, push there” so I consider that they like it

(T-2)

This may suggest that the activities that the teacher/researcher had designed and the use of the IWB not only promoted interaction, but also peer cooperation to complete the activities. However, in some cases, working in teams also caused some conflicts when they tried to complete the activities. There were cases in which students became annoyed because their classmates were cheating either because they broke the rules of the games or because only one person dominated the participation. Some activities had to be stopped until an agreement was reached. This meant subtracting points from the team that cheated. This can be illustrated by the teacher/researcher’s comment:

…there was a point at which some of them began to argue because they said that it was unfair that the other team was cheating. But the problems were solved after some talking with the two teams

(ON-4)

4.2 Answering the research questions

There were two central questions that this AR aimed to answer. The first one aimed to discover to what extent the use of a low-cost IWB motivated learners to learn English. The answer to this question is that the use of a low-cost IWB motivates learners only to a certain extent. At least six students who had never participated before showed interest in and enthusiasm for the classes and increased their participation. The group of students who were already participative before the implementation continued doing so throughout the period of time that the low-cost IWB was used. However, at least a third of the group did not show much interest in using the device. The causes are unknown, but a shared characteristic among these students is that they were mainly girls. This does not
mean that all girls did not like using this device. These girls were usually quiet and
withdrawn and may have felt embarrassed to participate and make mistakes,
especially because they are young teenagers in a mixed group. It should be noted
that they were not encouraged to participate. In fact, the teacher/researcher did not
encourage any student to participate because this could have negatively affected
the results of the implementation.

In his model of motivational teaching practice, Dörnyei (2001) suggests that
motivation has to be maintained and protected. Here, his recommendations are
that learning should be made stimulating and enjoyable; tasks should be presented
in a motivating way; cooperation should be promoted among learners, among
others. Some of these strategies were found in this study.

Finally Dörnyei (2001) suggests including motivational strategies in our
teaching practice. These strategies “refer to those motivational influences that are
consciously exerted to achieve some systematic and enduring positive effect” (p.
28). Considering that some of his suggestions were found in this research, it can
be said that they match the intrinsic kind of motivation considering that this type is
more enduring and there were no rewards given by the teacher.

The second question that this AR tried to answer was about the type of
interactive activities that could help learners become more interested in learning
English. Based on the students’ responses and the observation notes, it seems
that the participants liked most of the activities; however, they showed preference
for the matching activities, possibly because they were the easiest to do and did
not require higher thinking processes. A second type of activities that attracted
their attention was games. What is striking is that interactive activities in which they
had to process information to reach the correct answer were the least favored.
These least favored activities were the activity of listening and one in which they
had to describe a person.

A possible explanation for these preferences may be given by what Willis
(1996) has suggested. According to her, there are specific tasks that learners can
do at their level. In her proposal the tasks are classified into listing, ordering and
sorting, comparing, problem solving, sharing experiences and creative tasks. For beginner learners, she suggests that tasks begin with the first four types. She warns, however, that problem solving activities are challenging tasks which demand more intellectual and reasoning powers. The cognitive processes involved in the four types of tasks are brainstorming, fact finding, sequencing, ranking, categorizing, classifying, matching, finding similarities, finding differences, analysis, reasoning and decision-making. Bearing in mind these ideas, further learning activities for the interactive whiteboard should be created not only considering the game-like feature, but also the above-mentioned cognitive processes of learners.
CHAPTER 5: Discussion and reflections

This AR research report investigated how a low-cost IWB along with interactive activities may motivate learners at a telesecundaria school in the East of Mexico. The problem of motivation was identified in the initial stage of the research and as a result an action plan was designed and implemented with thirty students during four weeks. The teacher/researcher assessed the intervention by using three data collection techniques: a semi-structured interview, a focus group interview and observation notes. It was found that the use of interactive activities and IWB moderately motivated the students. The activities that were perceived by the students as most successful were matching and game-like activities.

5.1 Implications

The findings of this research have possible implications in three different fields: motivation, teaching methodology, and material design for language learning. For motivation, it was found that learners moderately liked using the IWB and the activities that accompanied this device. Probably the most relevant findings of this research were that using interactive activities not only motivated students to participate more in class, but also they cooperated among themselves in order to complete some of the activities. Considering this, a possible implication is that technology can assist language teachers to increase motivation and engage learners in class. The use of technology does not demerit other actions that teachers usually carry out to motivate students in the classroom, but can potentially contribute to the teaching-learning process.

Regarding teaching methodology, it is visible how technology is being used more and more in language classrooms. Thus, in a near future, the use of information and communication technologies (ICTs) in our teaching practice will become part of the skills that will be required of language teachers. The implication of this research therefore, is that it provides some ideas mainly for novice teachers, but also for more experienced teachers who want to include technology to assist their teaching practice.
This research also has implications for material design to teach and learn languages. As it was seen in this research, students preferred interactive game-like activities. Their preference for more complex activities that demanded reasoning to complete them was scarcer. Bearing this in mind, future interactive activities used in IWBs should be created in the form of game-like activities, but should also aim at developing more complex thinking skills as well to promote the four language skills which were not considered in this research project.

5.2 Limitations

There are at least five limitations in this action research. These limitations were time constraints, technical problems using the low-cost IWB, lack of an exclusive space to set up the low-cost IWB, the use of software to create the activities, and sharing the group with a different teacher.

5.2.1 Time constraints

Time is considered to be a limitation for a better development of the project because it was not possible to document the intervention for a longer period of time. Moreover, since this research was carried out with a group of students that had to be shared with another teacher, the other teacher's class had to be interrupted to set up the IWB (setting up the projector and computer, placement of the Wii remote control and calibrating the screen). Usually, this took around ten extra minutes.

5.2.2 Technical problems using the low-cost IWB

Since this IWB was home-made, there were some recurrent technical problems in comparison with commercial IWBs. The most common one was the set-up and calibration because sometimes the Wii remote control could not track the IR light of the IR pen. In addition, since this was new to students, they had to learn how to manipulate the IR pen and students sometimes became desperate because they were unable to manipulate the interactive activities.
5.2.3 Lack of exclusive space for the IWB

The lack of a space to set up the IWB represented another limitation for its good functioning. In the context of this AR, the space was reduced so whenever a student walked out he blocked the image of the projector. In other cases, if by any chance they bumped into the table where the devices were placed, the screen was de-calibrated and the teacher had to re-calibrate the device again.

5.2.4 Use of software to create the activities

Due to the lack of knowledge about how to use the software to create the interactive activities, it was a real challenge for the teacher/researcher to find information about the creating of this type of activities and to make them work. Furthermore, specialized software is scarce so in some cases the activities had to be simplified.

5.2.5 Sharing the group with a different teacher

The last limitation was the fact that the group of students had to be shared with another teacher. One particular problem was that the plan could not always be implemented because the teacher in charge was absent from school and the projector and cables to set up the IWB were locked up. As a result, the implementation had to be postponed sometimes for weeks.

5.3 Changes next time around

Considering the above limitations, there are some suggestions for changes. The first one is that it seems fundamental to have a group of one’s own and to be able to choose a special place where the IWB can be set up. This alone would solve many problems that occurred in this study. Second, it is vital that both the students and their teacher become used to this device before it is actually used for activities in the classroom. Third, it seems important that the teacher should be trained to use the specialized software. In addition, the teacher should have more available options of software to design the activities. Finally, the length of the implementation stage should be longer because time was very limited to obtain more conclusive results.
5.4 Conclusion

This AR study was an attempt to provide a solution to the problem of lack of motivation in a telesecundaria in the East of Mexico. The findings suggest that using a low-cost IWB contributed to solving this problem, but it needs to be highlighted that it was not possible to motivate all learners using this device. In addition, as it was pointed out earlier in chapter 4, the IWB does not guarantee *per se* that learners will be motivated. There is a need to accompany the use of the device with appropriate interactive activities that encourage students to be more participative. The findings also suggest that the teacher probably needs to intervene so that those students who were not participative are integrated into the activities and make use of this device. In this way the teaching and learning of English may be more beneficial for both teacher and students. Moreover, the teacher has to find ways to develop more motivational strategies, such as those mentioned by Dörnyei (2001), and if possible translate them into practical ideas for the classroom. A final consideration is that, since we are living a moment when the fast growth of technology is reaching our classrooms and when students are becoming more acquainted with it, we should not underestimate the use of technology and not hesitate to use it. In contexts where technology is inaccessible, the solution can be economical options such as the home-made IWB utilized in this research.

5.5 Ways forward

This investigation only focused on trying to motivate teenage learners by using a low-cost IWB, and it contributed to achieving this goal to a certain extent. However, there are many other aspects that have to be analyzed. For future projects using this technological device, suggestions include investigating whether or not using an IWB and interactive activities impact learning performance. Another possible research topic is to investigate how interactive activities can help learners develop the four language skills and if possible propose an internal syllabus for the subject of English at this telesecundaria school. This is because the current materials barely promote the development of all the language skills.
References


Kumar, R., & Lightner, R. (2007). Games as an interactive classroom technique: Perceptions or corporate trainers, college instructors and students.


Appendix A: Semi-structured interviews for the teachers

Interview for the female teacher

¿Cuánto tiempo llevas siendo profesora de los estudiantes?
¿Realizaron algún examen diagnóstico cuando entraron?
En general ¿cuál era su nivel de conocimientos según los resultados que obtuvieron?
¿Notaste algunas deficiencias en sus resultados?
¿Cómo cuáles?
¿Cómo percibes su actitud, en general, hacia la escuela?
¿Los ves motivados, poco motivados?
¿En qué materias percibes que están más motivados? ¿En cuáles te parece que no lo están?

Para el caso de la materia de inglés, ¿cómo percibes su actitud ante esta materia?
¿Crees que sus actitudes han repercutido de alguna manera en sus calificaciones?

Para cerrar esta entrevista, ¿cómo consideras que puede mejorarse la actitud de los estudiantes hacia la materia de inglés?
Interview for the male teacher

¿Cuál ha sido la percepción general que ha tenido sobre el desempeño de los estudiantes en sus clases?

¿Qué actitud cree que tienen los estudiantes con respecto a la escuela?

¿Considera que están motivados en general?

Usted tuvo la oportunidad de ver la implementación del uso de un pizarrón interactivo de bajo costo en la clase de inglés. ¿Pudo notar si la utilización de este recurso logró motivar a los estudiantes a interesarse en la clase de inglés? ¿de qué manera?

Alguna recomendación que pudiera sugerir
Appendix B: Focus group interviews

Focus group interview 1: Students

Preguntas para entrevista

1. Esta actividad es una entrevista grupal en la que me gustaría que participaran con algunas ideas sobre su experiencia con la material de inglés. Como recuerdan, al inicio de mi presentación como maestro de inglés les comenté que tenía planeado realizar una investigación. Esta actividad es parte de la investigación. La información que se recabe será simplemente con propósitos académicos y no repercutirá en su evaluación. Ninguna de las respuestas que proporcionen será considerada como correcta o incorrecta. Sólo se pide expresar sus opiniones. En algunos momentos haré algunas anotaciones sólo para corroborar mi información al momento de analizarla, de modo que no se sientan intimidados por esto.

2. ¿te gusta el inglés? ¿por qué?

3. ¿Cuándo tuviste tus primeras clases de inglés?
   a. ¿qué te gustó?
   b. ¿qué no te gustó?

4. ¿te gustan las clases de inglés ahora? ¿por qué?

5. ¿Consideras importante la materia? ¿por qué?

6. ¿cómo te gustaría que fueran las clases de inglés?

Gracias por su participación. Si alguno de ustedes tuviera algún otro comentario sobre la materia de inglés y no se consideró en esta actividad pueden hacerlo con toda libertad.
Focus group interview 2: Students

Preguntas para entrevista

1. Esta actividad es una entrevista grupal en la que me gustaría que participaran con algunas ideas sobre su experiencia con la material de inglés. Como recuerdan, al inicio de mi presentación como maestro de inglés les comente que tenía planeado realizar una investigación. Esta actividad es la segunda parte de la investigación. La información que se recabe será simplemente con propósitos académicos y no repercutirá en su evaluación. Ninguna de las respuestas que proporcionen será considerada como correcta o incorrecta. Sólo se pide expresar sus opiniones. En algunos momentos haré algunas anotaciones sólo para corroborar mi información al momento de analizarla, de modo que no se sientan intimidados por esto.

2. En primer año a algunos de ustedes no les gustaba el inglés ¿cuál es tu opinión del inglés ahora?
   ¿Te gusta? ¿No te gusta? ¿Por qué?

3. ¿qué te pareció el uso del pizarrón interactivo?
   a. ¿qué te gustó?
   b. ¿qué no te gustó?

4. ¿te motivó a aprender inglés? ¿por qué?

5. ¿qué actividades del pizarrón interactivo consideras que te ayudaron a aprender? ¿por qué?

6. ¿qué otras cosas de la clase te gustaron? ¿qué otras no te gustaron?

Gracias por su participación. Si alguno de ustedes tuviera algún otro comentario sobre la materia de inglés y no se consideró en esta actividad pueden hacerlo con toda libertad.
Appendix C: Interactive activities