# THE USE OF THE <br> INTERACTIVE WHITEBOARD IN PRIMARY SCHOOL (STUDENT MOTIVATION) 

Tània BATLLORI i LLINÀS

Quart curs del grau en Mestra d'Educació Primària
Tutor: Àngel Raluy Alonso
Assignatura: Treball Final de Grau
Facultat d’Educació, Traducció i Ciències Humanes
Universitat de Vic - Universitat Central de Catalunya
«We cannot hold a torch to light another's path without brightening our own»

Ben Sweetland

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## 3 Abstract

The purpose of this study is to analyse if the pupils of first grade of primary education are more motivated to learn the English language through the use of the Interactive Whiteboard (IWB). To start with, and as an indispensable element to contextualize my study, it has been necessary to carry out a thorough theoretical research about the use of the IWB in the primary class, about the advantages and disadvantages that has this instrument in the school. Subsequently, I created a didactic unit organized in six sessions where we used the IWB in most of the class. In the same section, I have explained how I created the instruments to collect the data, how I carried out the activities in class and how I evaluated the pupils. This didactic unit has been carried out with pupils of six and seven years old by means of vocabulary related to the food and the story «The very hungry caterpillar». During the different sessions I could observe how the pupils seemed motivated to learn and interact in the class through the IWB; behaviours that I subsequently compared with the observations that I made in a class with no use of the IWB.

Key words: Primary education, motivation, foreign language, English, Interactive Whiteboard (IWB), Information and Communication Technologies (ICT).

Aquest estudi pretén analitzar si els alumnes de primer de primària estan més motivats per aprendre la llengua anglesa a partir de la utilització de la Pissarra Digital Interactiva (PDI). Previ al desenvolupament del treball pràctic ha calgut una recerca teòrica sobre I'ús de la PDI a les aules, sobre els avantatges i desavantatges que té aquesta eina a l'escola. Posteriorment, he creat una unitat didàctica organitzada en sis sessions en les quals utilitzàvem la PDI en la major part de la classe. En aquest apartat explico com vaig crear la part pràctica, com ho vaig portar a terme i com vaig avaluar als alumnes. Aquesta unitat didàctica s'ha dut a terme amb infants de sis i set anys presentant els temes del menjar i la història <L'erugueta goluda». Durant les diverses sessions vaig observar com els infants es mostraven motivats per aprendre i interactuar a la classe a través de la PDI; comportaments que vaig comparar posteriorment amb les observacions que vaig realitzar en una classe on no s'utilitzava la PDI.

Paraules clau: Educació primària, motivació, llengua estrangera, anglès, Pissarra Digital Interactiva (PDI), Tecnologies de la Informació i la Comunicació (TIC).

## 4 Introduction

Continuing the previous research that I did for my pre-school degree TFG, entitled «The use of the interactive whiteboard in pre-school (student motivation)», I have considered that it would be interesting to extend the research to primary education. In this way, we can have a more general overview that would include from pre-school to primary. Therefore, once enrolled at the TFG of the degree on primary education I decided that I would follow the same research as in pre-school. This way, based on the investigations and the research that I made, I elaborated a practical part appropriate to primary. I also think that this topic is really interesting because nowadays we are in the era of the information technology, so the school has to adapt to the reality of today's pupils.

My research is focused on the use of the Interactive Whiteboard (IWB) because nowadays it is very important to teach in a more dynamic way in order to increase the motivation of the students. I have been interested in the use of new technologies in class and I studied double minor in Information and Communication Technology (ICT) and in English. Consequently, I strongly support the need for those areas correlation. This project is about the use of the Interactive Whiteboard (IWB) in primary, specifically in a class with pupils of first year. The main objectives are to identify the advantages and the disadvantages of the use of the IWB; design a didactic proposal for primary using the IWB; and analyse the students' motivation in a class using the IWB through some instruments (a self assessment, an assessment and the teacher's point of view).

Once I chose the topic I started to search literature about the use of Interactive Whiteboards in school, about the different advantages and disadvantages that this instrument brings to the school practice. For the practical work I prepared six sessions that I carried out in «Escola Marta Mata», in Girona (it was also the school where I did my internship) with pupils of first grade. The different didactic units were about food and the story «The very hungry caterpillar». During the different activities, I observed the pupils to see if they seemed motivated to learn and interact in the class through the IWB. To make these observations I elaborated a grid with the items to evaluate of each pupil (I assessed the listening, the
speaking and the attitudes of the pupils). I also gave them a self assessment grid to check their motivation and finally I asked the teacher some aspects related to the motivation of her pupils. To complement the observation I also took some photos of the pupils while they were doing the activities and I also recorded the entire lesson with a camcorder.

Based on the results that I obtained of the different observations I elaborated some final conclusions based on the attitudes that the pupils showed during a class made with the IWB. Of course, these results cannot be generalized because I made the observation with only fifty pupils of one certain school, so we could not extrapolate the results to other schools or situations. In these results, we can appreciate the motivation of the pupils in a class taught through the IWB, focusing on the listening, the speaking and the attitudes of the pupils.

## 5 Theoretical framework

Over the recent years, the advances in technology have affected the way of teaching and learning methodologies. Nowadays we are in the era of the information technology, so the schools have to adapt their methods to this technology. During the past few years, the Interactive Whiteboards (IWB) has started to be installed in schools, and nowadays more and more schools are interested in this new Information and Communication Technology (ICT). According to Roza (2011, p. 28), quoting Betcher and Lee (2009), the Interactive Whiteboard (IWB) is the first electronic instrument designed specifically for education, to be used both by teachers and by pupils. It is formed by a computer, a projector and a whiteboard. Some IWBs are operated with a stylus (a special pen to write on its surface) and others are operated with the finger. The IWB brings to the school the opportunity to change from the traditional models of teaching to a more integrated digital way of teaching. Although the schools are using the IWB, this not means that they stop using the pen, the paper and the normal board; it is only an extra digital instrument to make the class.

The British Educational Communications and Technology Agency (Becta) defines the Interactive Whiteboard (IWB) as follows: «An Interactive Whiteboard is a large, touch-sensitive board which is connected to a digital projector and a computer. The computer can then be controlled
by touching the board, either directly or with a special pen» (Becta; 2003, p. 1). The potential applications that Becta assign to the IWB are the following: «Using web-based resources in whole-class teaching, showing video clips to help explain concepts, demonstrating a piece of software, presenting students' work to the rest of the class, creating digital flipcharts, manipulating text and practising handwriting, saving notes written on the board for future use, quick and seamless revision.» (Becta; 2003, p. 1)

As Roza (2011, p. 16), quoting Dudeney and Hockly (2007), explains, in the recent years, the importance of the use of new technology in the English classroom is increasing. This is happening because of some reasons such as the natural interaction that young learners have with technology, the use of English in technologically mediated contexts, or the possibilities that technology brings to education among others. The natural interaction that young learners have with technology is caused because, like Roza (2011, p. 26), quoting Prensky (2001), points out, people are classified into two groups: the digital natives and the digital immigrants. Digital natives refer to everybody who was born in the digital era and digital immigrants are those who were not born into the digital world. So nowadays, the pupils of the schools are digital natives because they were born in a technological society.

Roza (2011, p. 17), quoting Ybarra and Green (2003), explains that technology can be used as a teaching tool for the English class because the different materials that the teachers could use can provide a language-rich environment in the classroom in order to make the pupils engage in language activities. Through these new technology instruments, both teachers and students can take part in the learning process and participate in the class; and both of them profit from this relationship (because teachers can achieve a more dynamic class and pupils can participate in the class). As Fatih (2008, p. 12), quoting Lee (2000), Warschauer and Healey (1998), states, with the use of the technology it is possible to teach real language within meaningful and authentic contexts (working on listening, speaking, writing and reading skills).

We know that, as Roza (2011, p. 12), quoting Silva (2009), explains, pupils learn in a dynamic and interactive way (especially very young learners). However, there are teachers that still offer little interactivity to
the pupils. Therefore, it is important for the teachers to start by rethinking the teaching pedagogies that they use in the class. Offering little interactivity to the pupils while doing the class brings as a lack of motivation and active participation. We know that in general the pupils are dynamic and visual, so they will learn much more when teaching and learning is associated with these aspects. Roza (2011, p. 24), quoting Haynes' article (2009), claims that it is important to take into account the different learning styles (the different ways to learn) that pupils have. Roza (2011, p. 24), quoting Kinsella (1995), explains that there are four different types of learning styles:

- Visual learning: learn by seeing, looking and observing.
- Auditory learning: learn by listening, repeating or discussing.
- Tactile learning: learn by handling and touching.
- Kinaesthetic learning: learn by moving, doing and experiencing.

This is why teachers have to try to use all the different learning styles to elaborate the different activities, to make sure that all the pupils could learn from it. According to Haynes (2009):

It is especially crucial to take your students' learning styles into account when you are teaching English language learners. It is always important for teachers to teach to their students' learning styles but this becomes crucial when teaching English language learners. English language learners may be highly literate in their own language but experience difficulties when acquiring English because they are accustomed to learning through a different style. In any case, most ELLs are visual or kinaesthetic learners when they first learn English.

There are many advantages in the use of an IWB in the class because of its many functions. Now I am going to explain the different advantages that scholars point out of the IWB. First, we can say that it allows students to interact with the board in an easy way (with the finger or the stylus) and it is quite intuitive. Secondly, it is not limited because the teacher or the pupil can write or create everything that they want for the class. Thirdly, a teacher can put multiple sensory inputs in multimedia forms such as text, images, audio, video, animation, games, and many other things. Roza,
(2011, p. 33), quoting Martín's book Activities for Interactive Whiteboards (2009), explains that we can find a list with some advantages such as being able to work with things that are happening at the moment in the world using the internet, breaking news websites that can also include videos, social networks and others, using authentic experiences and realia to develop the class.

The Interactive Whiteboard provides some benefits for students and for teachers. On the one hand, as Fatih (2008, p. $24-26$ ), quoting Levy (2002), Schmid (2006), Bell (2002) and Walker (2002), argues, some of the benefits for the students are an increase in the motivation and enjoyment, more opportunities to participate and collaborate and to learn through different learning styles. It also reduces the need to take notes, it increases the degree of understanding, it provides a variety of resources, it makes lessons more enjoyable and entertaining, it brings authentic experiences in the class, it helps to attract and retain pupils' attention and many others. On the other hand, as Fatih (2008, p. 27 and 28), quoting Smith (2001), Kennewell (2001), Walker (2002), Levy (2002) and Kennewell and Beauchamp (2007), explains, some of the benefits for the teachers are the following: using the IWB is a useful way to integrate Information and Communication Technology (ICT) in the class because the teachers can make dynamic presentations. It also provides more attractive materials to use in class, the teacher can personalize and create different materials, it reduces the time spent in writing and the materials generated during the class can be saved, printed and reused. Moreover, the IWB allows spontaneity and flexibility, teachers can teach pupils with different learning styles, they are more creative and effective in their explanations, teachers can keep students' attention longer and can motivate them because they can focus on individual problems and they have the opportunity to be more flexible during the class and others. As Roza (2011, p. 34 and 35), quoting Gage (2005), states, teachers can make lessons closer to the reality of the students because of that and with some methodological changes the teachers can organize the class in a more interesting, interactive and engaging way and also with more quality of teaching and learning.

| Chart to summarize the most important aspects of the paragraphs above |  |
| :---: | :---: |
| Advantages of the Interactive Whiteboard |  |
| For students | For teachers |
| - Increase motivation. <br> - Opportunities to participate. <br> - Allows interaction. <br> - Increase the degree of understanding. <br> - Lessons are more enjoyable. <br> - Attract pupils' attention. <br> - Up-to-the-minute information. | - Allows interaction. <br> - Integrate ICT in class. <br> - Dynamic presentations. <br> - Can use multiple sensory inputs. <br> - Attractive materials. <br> - Personalize and create materials. <br> - There is no limitation <br> - Teach to different learning styles. <br> - Keep students attention. |

There are also some disadvantages of using an IWB in the class. First, as Roza (2011, p. 37), quoting Betcher and Lee (2009), explains that with the use of the IWB the teacher also needs a change in the pedagogy that she/he is using, because it is a different way to teach. The methodologies required to teach by means of an IWB are quite different from those that were used by teachers traditionally, before the implementation of the ICTs. The use of the IWB implies the use of new teaching methodologies. It is important to change the methodologies to elaborate and create things specifically based on this new instrument. Not only should the teachers adapt the methodologies used before the implementation of the ICTs, but also it means a change in the way to present the activities to the pupils, to create new activities and not to use the same ones but in the new instrument. So teachers have to be predisposed to change their way of teaching with the implementation of the IWB, otherwise, they will not use all the possibilities of it. Secondly, another difficult aspect for teachers is to be familiar with this new tool, to be willing to create new materials and not only to repeat the same activities in the old way. The success of the IWB will depend on teachers' curiosity and
predisposition to create new things, to experiment and to work using the IWB.

We can also state some drawbacks in the use of the IWB that may affect students and teachers. First of all, as Fatih (2008, p. 29 and 30), quoting Glover and Miller (2001), Hall and Higgins (2005), Levy (2002), Wall (2005), Gray (2005) and Moss (2007), explains, if we want to make the teachers capable of using the Interactive Whiteboard in all its potential and to avoid common problems, they need a fair amount of training and technical support. The teachers have to be confident in using this technology and they can only achieve this with some special training on the area. Without this training, the benefits that we are talking about before may not be experienced in class. Secondly, Fatih, (2008, p. 4), quoting Glover and Miller (2001), points out that there are many teachers in the schools that do not have any competence in Information and Communication Technology (ICT). So without this ICT competence it is really difficult to implement the IWBs in different classrooms. It is necessary to have some basic knowledge on technology. Thirdly, the financial situation of the school is a very important aspect on the implementation of this instrument, because they have to spend a considerable amount of money to equip the different classrooms.

| Chart to summarize the most important aspects of the paragraphs above |
| :--- |
| Disadvantages of the Interactive Whiteboard |
| - Involve new teaching methodologies. |
| - Need to change the pedagogy and the way to present the activities. |
| - Be familiar with the IWB. |
| - Create new activities. |
| - Training and technical support. |
| - Be confident using this technology. |
| - ICT competence. |
| - Technical problems. |
| - Financial situation of the school. |

In conclusion, and based on what researchers claim, we can say that a class given using an Interactive Whiteboard is perceived as more interesting by the students and the teachers. The different studies point out that the use of the IWB technology in the class offers a large amount of benefits. However, it is important for teachers to acquire an adequate level of knowledge of ICT to use this technology. As some researchers say, students and teachers have positive opinions about the benefits of the use of the IWB in the schools. Nevertheless, the schools need time to incorporate the new technologies in the class because of financial difficulties, training of the teachers and others. In general, in a class taught through the IWB, students are more motivated and consequently they participate more in the activities that the teacher offers to them. Teachers feel more enthusiastic when they start to use the IWB and feel the difference while they are using it. Even so, the IWB may have some technical problems so teachers have to receive some training about this instrument. In addition, they need adequate training and technical support to create the different lessons. In general, both students and teachers valuate positively the Interactive Whiteboard because it brings some benefits to the class.

One of the aims of this study is to see the motivation of the pupils during a class taught with the Interactive Whiteboard. To do this, I did some research on the motivation theories. So based on what I found I have adapted the different aspects that the researchers highlight about motivation to the specific project that I created and for first grade pupils.

As Ioannou-Georgiou and Pavlou (2003) state on their book Assessing young learners, the term assessment is «a general term which includes all methods used to gather information about children's knowledge, ability, understanding, attitudes and motivation» (Ioannou-Georgiou and Pavlou; 2003, p. 4). In addition, they highlight that assessment is different from the term evaluation and the term testing, they do not mean the same. Evaluation is «the process of gathering information in order to determine the extent to which a language programme meets its goals» and testing is «one of the procedures that can be used to assess a child's performance» (Ioannou-Georgiou and Pavlou; 2003, p. 4).

These researchers say that teachers have to assess young pupils for the following purposes:

- To monitor and aid their progress: what the pupils know, what they have difficulties in and how we can help them.
- To provide an evidence of their own progress: establish shortterm goals to point out their own progress and consequently make them feel more motivated and encouraged to learn.
- To monitor teachers' performance: it can help the teacher to evaluate his/her own work.
- To provide information to parents and school authorities: to keep the parents and the school informed about the pupils' progress.
Another aspect that Ioannou-Georgiou and Pavlou (2003, p. 6 - 8) mention in their study are the skills and attitudes that teachers have to assess. First, they talk about the different skills: listening, speaking, reading, writing and the integrated skills. Focusing on my personal study, I have only assessed listening and speaking (because I had six-year-old pupils in my class). The listening includes predicting content, understand the meaning of the content, listening for gist and listening for detailed information. The speaking includes pronunciation, intonation, turn-taking and the achievement of oral communication. Secondly, they talk about the attitudes of pupils, because it is basic to achieve positive attitudes in the class to foster a better attitude while learning the foreign language and the culture. The attitude assessment was carried out through questionnaires and observation.

Ioannou-Georgiou and Pavlou (2003, p. 8 - 12) also point out how we can assess the pupils, and they highlight that it is very important to establish a motivating and positive atmosphere in the class. This positive atmosphere could be damaged depending on what the teachers did when they had to carry out an assessment activity. It is important to carry out an assessment in a way that does not break this positive atmosphere towards the English language. Some of the methods proposed by them are structured assessment activities, take-home assessment tasks, make a selfassessment, make a portfolio assessment, make an observation and others. Focusing on what I need to make my own assessment in the school, I chose
to make an assessment of the pupils (observation) and a self-assessment. As Ioannou-Georgiou and Pavlou say, self-assessment promotes learning skills such as monitoring one's own progress and reflecting one's abilities; and the observation is a continuous assessment of the pupils' behaviour, attitudes and performance.

Ioannou-Georgiou and Pavlou (2003) give a detailed account of the activities we can do with the students for a good assessment. However, most of the activities that they offer are designed for older primary school children, so I had to adapt the items for first grade. One of the things that I had to adjust was that the self-assessment for primary students is also based on reading and writing. But for the project that I carried out I only wanted to assess listening and speaking, because reading and writing were not developed at this age. Therefore, I wrote the minimum things and I put some icons to make it more understandable (happy and sad faces, for example, instead of writing it). Related to the assessment (the observation) that I did, I also have had to adapt some things because the items related to the listening and the speaking were for pupils whose level of English was too high.

Another researcher that talks about motivation in her study is Emma Fuentes. Fuentes (2012, p. 7), quoting Tapia (2005), explains the strategies that teachers have to follow to promote the motivation of the pupils. He divides the strategies depending on the learning moment.

- Strategies to carry out before the activity: arouse their curiosity and highlight the aims of the activities.
- Strategies to carry out during the activity: keep the interest of the pupils (asking for their previous knowledge, following their rate of learning, answering their questions, using a diversity of strategies and others).
- Strategies to carry out after the activity: reflect on the process.
- Strategies to carry out every time: interact with the pupils, making the pupils interact between them, assessing, avoiding demotivation and favouring their self-autonomy.

Fuentes (2012, p. 6), quoting Escaño and Serna (2008) and Tapia (2005), points out that there are some reasons that may cause demotivation in pupils. First of all, because they do not know how to learn;
secondly, because they think that being good while learning is something innate; and thirdly, because teachers (in general) do not give opportunities to the pupils to learn from their mistakes. So teachers have to avoid these actions and have to try to involve the pupils in their learning process and help them to learn.

Another scholar that talks about motivation is Martha Carlton in her article Motivating learning in young children (2003). Carlton points out that children have two types of motivation: intrinsic motivation, when they make their own choice about something because they want to do it; and extrinsic motivation, when the adults choose something for them. On the intrinsically motivated activities the child is motivated by itself so she/he learns and retains information better. On the extrinsically motivated activities the reward comes from outside the child (from their parents or teacher); and it is difficult for the child to keep her/his attention and motivation on what is doing. As Carlton (2003) explains, there are some behavioural characteristics that are indicators of high motivation.

- Persistence: is the ability to do a task during a long period of time. A highly motivated pupil will keep on doing the activity for a long time whereas a demotivated pupil will give up. As teachers, we have to offer tasks that are just challenging enough for the level of the pupils but not too overwhelming.
- Choice of challenge: pupils that experience success in an activity will become motivated, ready for another activity. These pupils will choose the activities which are slightly difficult for them. Demotivated pupils will choose the activities that are too easy for them.
- Dependency on adults: pupils that are motivated do not need an adult watching and helping them with the activities. On the contrary, pupils that are demotivated need constant attention from adults.
- Emotion: pupils that are motivated are satisfied with their work and are interested in doing more activities. Demotivated pupils feel bored and a bit uncommunicative during the activities.

Carlton (2003) also highlights that young pupils use oral communication to solve problems. We can often hear pupils talking to themselves (talking out loud) to find the solution of a problem. These pupils have more self confidence so they can solve problems easily because they are motivated in front of challenging situations. Adults can enhance the motivation of the pupils, but they have to be very cautious about the use of extrinsic rewards (because it can interfere with the intrinsic motivation of the pupils). There are some strategies that adults can use to motivate the pupils:

- Provide a good environment to explore and see the effect of their actions.
- Give enough time to finish their work.
- Respond to their needs but let them some independency.
- Provide opportunities to explore together.
- Provide adequate challenges.
- Give the opportunity to evaluate their work.
- Do not use excessive rewards.

Another research that talks about motivation is Dörnyei in his book Motivational strategies in the language classroom (2001). In his book he explains the Williams and Burden's framework of L2 motivation (1997). These researchers consider L2 motivation as something complex, and they divide the motivation influence into internal or external. Some internal factors on motivation are the intrinsic interest on the activity, perceived value of the activity, the self-concept, the attitudes, other affective states, and others. Some external factors on motivation are the significant others (parents, teachers and peers), the nature of interaction, the learning environment and the broader context. All these items are an important part to value about the pupils' motivation, because there is not only one aspect to take into account to recognize if the pupils are motivated or not. As teachers, we should change and promote the external factors of the motivation, but we may not be able to change the internal factors that each pupil has.

Some motivational strategies that Dörnyei states are the following. First, he explains that we can focus on the internal structure of a language class (present material, give feedback...); secondly, design a primarily
trouble-shooting guide (write the motivational problems and make suggestions to solve them); thirdly, focus on key motivational concepts (intrinsic interest, self-confidence or student autonomy); fourthly, centre the discussion on the main types of teacher behaviour that have motivating effects; and finally, comprehensiveness, focused on the different phases of the process-oriented model. These five ways to organize the motivational strategies are quite useful before starting the sessions. Following these approaches we can highlight the problems in the class in terms of motivation and we can start choosing the best strategies to motivate our pupils. Some of the key aspects in the motivational teaching practice are creating the basic motivational conditions (for example, appropriate teacher behaviours and pleasant and supportive atmosphere), generating initial motivation (for example, making teaching materials relevant for learners, enhance the learners' values and attitudes), maintaining and protecting motivation (for example, presenting tasks in a motivating way, making learning stimulating and enjoyable) and encouraging positive retrospective self-evaluation (for example, providing motivational feedback, increasing learner satisfaction). All these key units are really useful for teachers to create and prepare a didactic unit according to some motivational practice, to involve students into the teaching-learning process and eventually motivate them to learn.

## 6 Methods

To elaborate the practical part of this study I elaborated a project that I implemented with the pupils of the school where I carried out my internship. This school was the «Escola Marta Mata», in Girona. The school has pupils from six to twelve years old. I did my internship with the English teacher in first and second year of primary, Lídia Comas, who teaches English to the youngest ones and Arts and Crafts to the pupils in third and fifth year. To do this project, I specifically focused my attention on first graders.

The project that I elaborated consists of different activities created specifically to teach by using the Interactive Whiteboard in the English classroom. As I explained before there are two types of IWB: the ones that are operated with a stylus and the others that are operated with the finger;
the IWB of the school belongs to the first category (a special pen to write on its surface). Based on the topic that I have to focus to elaborate my didactic unit (food, based on the story «The very hungry caterpillar») I created a series of activities and games designed for the six year old children. The games where created by me using the application Notebook, and it was specifically focused on the objectives that I wanted the pupils to achieve. I created and prepared six different oral sessions ${ }^{1}$ : in the first one we played some Interactive Whiteboard games, in the second and the third one we made a caterpillar puppet and a minibook about the story, in the fourth session students learned some Interactive Whiteboard games related to the story, in the fifth session we also saw some other Interactive Whiteboard games and in the sixth one we feed the caterpillar and we made a poster. During these sessions, the pupils were getting familiar with the vocabulary related to the story. During the first activities, the new vocabulary was presented by reading the book «The very hungry caterpillar» and the first Interactive Whiteboard games. Later on, these language items were practiced with other activities using the IWB. I also repeat the story at the beginning of each class. All the activities were created with the aim that the pupils had to participate, to stand up and get closer to the IWB to solve it.

One of the main objectives of this study was to check the motivation of the pupils while they were using the Interactive Whiteboard. So to evaluate the progress of the pupils I elaborated two instruments. One instrument was an assessment grid ${ }^{2}$ for each pupil. In this assessment grid, I focused on listening, speaking and the attitudes of the different pupils. The main objective of this grid was to see if the pupils get involved in the class and if they participated. The second instrument was a self-assessment checklist ${ }^{3}$ for each one. After every lesson, I gave each pupil the selfassessment grid to know the degree of motivation and satisfaction during the activity. On these grids I asked them specifically their opinion about each activity (if they liked it a lot, if they liked it a little or if they did not like it). The brief description and analysis of the two instruments is included on the next section.

[^0]
## 7 Study

I evaluated the pupils using two ways, as I explained before. One instrument was an assessment grid on each child and the second instrument was a self-assessment document, where each pupil had to answer some questions related to their own motivation and satisfaction about the activities. Consequently, in this section I am going to explain the conclusions of both instruments. The general results/conclusions are expressed in rounded percentages. I also asked the English teacher some interesting questions about her students' motivation during my sessions, to take a different point of view. This would be interesting to see how the teacher sees the pupils in a class.

To start with, I am going to describe the results of the individual assessment ${ }^{4}$. Although the assessment is divided into two different grids (because there are two different groups of first grade in the school: group A and group B), to reach a conclusion I've put together the two groups to analyze the results in general. In this grid we can see the percentage of pupils that did each item always, often or sometimes. The items from one to three refer to listening; the items from four to nine refer to speaking and the items from ten to seventeen refer to their attitudes.


[^1]

In this graph we can see that the listening of the pupils is good, because most of them can often understand sentences ( $66 \%$ of the pupils), can often follow oral instructions (54\% of the pupils) and can often recognize the words that we are working on (50\%). About 40\% of the pupils can always recognize the different words. In terms of speaking, some of the pupils feel comfortable to speak most of the times (44\%) but they are still very shy speaking in English. We can see that most of the pupils often try to communicate (60\%) but only sometimes they initiate communication ( $58 \%$ of the pupils). Most of them can often ask and answer simple questions (How are you? Which food is that? What's this?) (76\%) and in general the pronunciation is good. Pupils only have some difficulties with the sound «日» in the words «three» and «Thursday», for example, because they pronounce it like the «f» in Catalan. But with the correct input they will solve that problem. Most of them can always name the words of the vocabulary that have been taught without problems (56\% of the pupils). About their attitudes, we can see that there is the same percentage of pupils that show interest in the class always and often (46\%), make
often the effort to pay attention (50\%) and to co-operate (52\%). We can see that the pupils always participate in the class (46\%) and can carry out the task ( $48 \%$ of the pupils). Most of the pupils try often to express themselves (62\%) and the rest of the class only try sometimes to express themselves (22\%); as I said before, because they do not know enough English vocabulary and they do not feel enough comfortable to speak in the foreign language. In general, during a class with the IWB, most pupils always pay attention to the class ( $46 \%$ ) and only half of the pupils listen often to the teacher (52\%).

Moreover, I would also like to present the results of the different selfassessment grids that the pupils answered during the different lessons with the IWB $^{5}$. I will talk about the conclusions on their own motivation and satisfaction about the different class activities. Although self-assessment is shown in two different grids (because there are two different groups of 1st grade in the school: group A and group B), to reach a conclusion I have combined both groups to explain the results in general. The selfassessments that I gave to the pupils where in Catalan.

[^2]


Session 2



Session 3


| Session 3 |  |
| :---: | :---: |
|  | -At all <br> -A little <br> -A lot |




Session 5







In general, all the pupils seemed to like the different activities a lot. When I asked them their own opinion about the class in general, they gave a very positive overall opinion. In all the sessions, more or less $80 \%$ of the pupils liked the class a lot. When I asked them if they enjoyed speaking English, more than $65 \%$ of the class liked it a lot, and in some sessions a $20 \%$ of the class answered that they liked it just a little. And when I asked them if they liked to learn English, most of them answered that they liked it a lot (more than $75 \%$ of the pupils in all the cases). About the different activities, most of pupils liked them a lot. The different activities were: the story, game about the fruits, colours, days of the week, make a caterpillar, colour a minibook, put in order the story, a poem, big and small, butterfly cycle, feed the caterpillar and the poster. The games that they liked the most were when they made the caterpillar ( $96 \%$ of the class like it a lot) and when they coloured the minibook ( $92 \%$ of the class). They also liked the IWB games, particularly the fruit, the colour game, the days of the week, the game where they had to put the story in order and the butterfly cycle (more than $85 \%$ of the pupils). They enjoyed playing games with the IWB, because it is an instrument that allows pupils to participate actively in the class. More than $90 \%$ of the pupils answer that they like to play games with it.



About their state of mind, I asked them how they felt during the class (represented by faces: happy, normal, bored, sad and angry). Most of the pupils answered that they were happy during the sessions. There were some pupils that felt bored during the activities, some of them felt sad, and some of them felt angry. And when I asked them why they felt like this, in general they answered that it was because they had to wait until it was their turn and they had to keep seated. This was caused because only one pupil could go to the IWB each time, and they did not want to wait. They also felt like this because some other pupils were annoying them during the class or because of some things not related to the class. I have to say that these opinions of the pupils about the activities and their state of mind are not completely correct, because I hear some pupils in the class discussing about what they can mark (which face) and they did it together; so it cannot be taken as undisputable truth.

To have a different point of view I also asked the English teacher in the class if she can answer some questions related to the motivation of the pupils during the sessions ${ }^{6}$. Based on her answers, it can be stated that she sees the activities as more motivating for the pupils, as they are born in a

[^3]digital society. The teacher thinks that the Interactive Whiteboard is more motivating because it allows interaction, so they feel more important during the class and they become a part of the teaching-learning process. So in general, the aspects that the teacher highlights as positive in the use of the IWB are more or less the aspects that the researchers point out about that tool. As researchers say, the positive aspects in the use of the IWB are that the pupils can participate actively in a class (so they feel more motivated as a part of the learning process), both teachers and pupils can have access to all the information that they want or need in that moment and the teacher can prepare her own material for the class. About the negative aspects, the most important ones could be the lack of time to prepare the materials to use in the IWB, the difficulty to work with small groups and the internet connection (that sometimes was really slow). About the first one, it is true that teaching with the IWB needs some more preparation time, but this only happens the first times that a teacher is using that tool, because a teacher gets more familiar through the practice. The beginnings are always difficult, but if they get training on how to use the IWB, it would be easy to prepare the materials. About the internet connection, I also think that the schools are not really prepared to use all that technology in the class. The internet connection is slow, it stops sometimes, and the computers do not always work. There are some problems with those new technologies. But in general she perceived the IWB quite positive and she thinks that it really motivates the pupils.

## 8 Conclusions

This study reflects the advantages and disadvantages of the Interactive Whiteboard (IWB) in the school context. In general, and according to the researchers, we can state that there are more advantages than disadvantages. About the advantages of the IWB we can highlight the ones that refer to the pupils. The use of the IWB in the class allows the pupils to learn and be more interested in what is being taught. Therefore, we can say that in general they are more motivated and interested in learning and, at the same time, they participate and collaborate in the class because the IWB promotes interaction between the teachers, the pupils and the lesson. Related to the teachers, with the use of the IWB they can achieve more interesting, entertaining, interactive and dynamic lessons (and this influences pupils' attitudes as well); also, the teacher can personalize the materials that she/he is going to use in the class. About the disadvantages of the Interactive Whiteboard, the most important ones are the following: the methodology that teachers use while they were using the IWB (because they cannot use the same methodology as in a traditional class); the predisposition that they have to have to be confident with this new tool and the financial problems (because it is an expensive instrument).

To observe the degree of motivation that the pupils feel, I have read some studies related to primary education pupils and then I have adapted the different aspects to the specific things that I wanted to highlight. I created several items to identify the motivation that pupils felt during the class. During the different sessions that I carried out in the school with the pupils, I could prove that they were more motivated while they were doing activities that needed interaction. As we can see in this study, pupils feel more interested and motivated in class when teachers offer them interactive activities; activities that allow them to participate and collaborate. With the use of the Interactive Whiteboard I see the different aspects that the researchers highlight from their studies. The pupils were more motivated to participate in the games that I had created because I offered them the possibility to collaborate in the lesson that I was teaching. This was important for them because they felt part of the class and of course they were motivated. The opinions of the teacher are quite similar to the
opinions that the researchers have. There are some positive aspects (motivation and participation, for example) but also some negative aspects (bad internet connection, lack of training in the use of the tool and others). And she also thinks that the pupils where more motivated with the IWB than without it, since the pupils were able to participate more.

In conclusion, and focusing on what $I$ have seen during my intervention in the school and during my research, in general pupils collaborate and participate more in a class with the IWB, and consequently they try to express themselves in English. Another aspect that the teacher should take into account is classroom management since only one student can come up to the board and interact with it. I have to say that the obtained results of the school are not absolute because I only carried out the activities in one school and with a reduced number of pupils. So we cannot extrapolate these results in other contexts or situations. In the school, most of the pupils felt more motivated to learn while we were using the Interactive Whiteboard. They focus their attention on what the teacher was teaching because the activities were dynamic, visual and needed their collaboration.

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## 10 Annex

### 10.1 Activities created for the sessions

In this section you can find the different activities that I create for the Interactive Whiteboard and for some sessions. All the activities have the same home screen, which is this one:


### 10.1.1 First session: Interactive Whiteboard games 1

Count


The pupils have to place the fruit under the correct number.


An example of the activity solved

## WRITE THE CORRECT NUMBERS



## WRITE THE CORRECT NUMBERS




The pupils have to draw a line from the number to the correct amount of fruit

DRAW A LINE FROM THE NUMBER TO THE CORRECT FRUIT

(3)
(4)
(5)


Colours


An example of the activity solved

The pupils have to place each piece of food under the correct colour


Days of the week


## DAYS OF THE WEEK

| MONDAY |
| :---: |
| TUESDAY |
| WEDNESDAY |
| THURSDAY |
| FRIDAY |
| SATURDAY |
| SUNDAY |



An example of the activity solved

### 10.1.2 Second session: Caterpillar puppet

Make a caterpillar puppet


### 10.1.3 Third session: Minibook

## Caterpillar poem



The pupils have to listen to the whole poem. Then the teacher says it sentence by sentence making the gestures and the pupils have to repeat it

## Colour the minibook

The pupils have to colour the minibook and write the words of the different things



HE BUILT A COCOON
AND AFTER TWO WEEKS, HE WAS A BEAUTIFUL


THE CATERPILLAR POEM
CATERPILLAR, CATERPILLAR CAT, CAT, CAT
MADE HIMSELF A CHRYSALIS FAT, FAT, FAT
HE WAITED AND HE WAITED SAT, SAT, SAT
AND HE BECAME A BUTTERFLY JUST LIKE THAT! 3


### 10.1.4 Fourth session: Story games

Days of the week: the same activity explained before
Put in order the story


WHICH FRUITS ARE MISSING?
DRAW IT!


## SUNDAY $\rightarrow$

The pupils have to drag and place the food next to the correct day of the week

An example of the activity solved

The pupils have to drag and place the food next to the correct day of the week and draw the ones that are missing


The pupils have to count and put the correct number next to the correct number of food

An example of the activity solved


The pupils have to remember and guess what food the caterpillar eat each day and how much

The pupils can drag the caterpillar to show what food the caterpillar ate.

### 10.1.5 Fifth session: Interactive Whiteboard games 2

## Big and small



The pupils have to place each piece of food in the correct place, depending if they are small or big


The pupils have to put the fruit in the correct order, from small to big

An example of the activity solved

Life cycle of a butterfly


The pupils have to drag and place the words under the correct picture


The same activity with real pictures of the life cycle of a butterfly

Butterfly calendar


CALENDAR OF THE CATERPILLAR


The pupils have to drag and place each picture in the correct day of the calendar to follow the story

An example of the activity solved

### 10.1.6 Sixth session: The caterpillar

Feed the caterpillar



Each pupil has two pieces of food and they have to put them into the mouth of the caterpillar in the same order than in the story

## Caterpillar poster

Each pupil has a couple of pictures to stick on the wall. They have to stand up and stick them in order.


### 10.1.7 Extra activities



NAME:
THE LIFE CYCLE OF A BUTTERFLY
WRITE THE NAMES IN THE CORRECT PLACE

COCOON EGG CATERPILLAR BUTTERFLY


NAME:

## LET'S DRAW

DRAW SOMETHING ABOUT THE STORY \&THE VERY HUNGRY CATERPILLAR*
THE VERY HUNGRY CATERPILLAR

NAME:

## COLOUR AND WRITE



THE C -.-.-.-.-. BECAME
A BEAUTIFUL B_-.-.-.-.

```
BUTTERFLY
CATERPILLAR
```



### 10.2 Evaluation

### 10.2.1 Assessment instrument



### 10.2.2 Self-assessment instrument

The following documents are the different self-assessment checklists that I gave to the pupils in the different sessions.
$\qquad$

| LES ACTIVITATS QUE HEM FET... |  |
| ---: | :--- |
|  | MHAN AGRADAT MOLT |
|  | MHAN AGRADAT UNA MICA |


| MHA AGRADAT EL JOC DE LES FRUITES | MOLT | MNA | GENS |
| :--- | :--- | :--- | :--- |
| MHA AGRADAT CLASSIFICAR PER COLORS | MPHA AGRADAT TREBALLAR ELS DIES DE |  |  |
| LA SETMANA |  |  |  |


| M'AGRADA PARLAR EN ANGLES |  |
| :--- | :--- | :--- |
| MPAGRADA APRENDRE ANGLES |  |
| MISSARADRA JUGAR A JOCS AMB LA |  |

DURANT LA CLASSE MHE SENTIT...


NOM

| LES ACTIVITATS QUE HEM FET... |  |
| ---: | :--- |
|  | MHAN AGRADAT MOLT |
|  | MHAN AGRADAT UNA MICA |
|  | NO MHAN AGRADAT |


|  | MOLT | UNA | GENS |
| :--- | :---: | :---: | :---: |
| MHA AGRADAT FER EL CATERPILLAR | MHA AGRADAT TREBALLAR ELS DIES DE |  |  |
| LA SETMANA |  |  |  |


| M'AGRADA PARLAR EN ANGLES |  |
| :--- | :--- | :--- |
| M'AGRADA APRENDRE ANGLES |  |
| MISSARRA DIGITAL INTERACTIVA (PDI) |  |

DURANT LA CLASSE M'HE SENTIT...


NOM: $\qquad$

| LES ACTIVITATS QUE HEM FET... |  |
| ---: | :--- |
|  | MHAN AGRADAT MOLT |
|  | MHAN AGRADAT UNA MICA |
|  | NO MHAN AGRADAT |


|  | MOLT | UNA | GENS |
| :--- | :--- | :--- | :--- |
| MHA AGRADAT EL CONTE |  |  |  |
| MA SETMANA |  |  |  |


| M'AGRADA PARLAR EN ANGLES |  |
| :--- | :--- | :--- |
| M'AGRADA APRENDRE ANGLES |  |
| PISSARARA DIGITAL INTERACTIVA (PDI) |  |

DURANT LA CLASSE MHE SENTIT...


NOM $\qquad$
LES ACTIVITATS QUE HEM FET...

|  | MHAN AGRADAT MOLT |
| ---: | :--- |
|  | MHAN AGRADAT UNA MICA |


|  | MOLT | UNA | GENS |
| :--- | :---: | :---: | :---: |
| MHA AGRADAT FER EL MINIBOOK | MHA AGRADAT FER EL CATERPILLAR | sers |  |


| M'AGRADA PARLAR EN ANGLES | \% | ( | $\bigcirc$ |
| :---: | :---: | :---: | :---: |
| M'AGRADA APRENDRE ANGLES | (6) |  | 5 |

DURANT LA CLASSE MPHE SENTIT...


NOM: $\qquad$
LES ACTIVITATS QUE HEM FET...

|  | MHAN AGRADAT MOLT |
| ---: | :--- |
|  | MHAN AGRADAT UNA MICA |
|  | NO MHAN AGRADAT |


|  | MOLT | UNA | GENS |
| :--- | :---: | :---: | :---: |
| MHA AGRADAT EL POEMA DEL <br> CATERPILLAR | MHA AGRADAT FER EL CATERPILLAR |  |  |
| MHA AGRADAT FER EL MINIBOOK | ses |  |  |


| M'AGRADA PARLAR EN ANGLĖS | (20) | ( | 5 |
| :---: | :---: | :---: | :---: |
| M'AGRADA APRENDRE ANGLĖS | \% | (宔) | 5 |

DURANT LA CLASSE MHE SENTIT...


NOM $\qquad$
LES ACTIVITATS QUE HEM FET...

|  | MHAN AGRADAT MOLT |
| ---: | :--- |
|  | MHAN AGRADAT UNA MICA |


|  | MOLT | UNA | GENS |
| :--- | :---: | :---: | :---: |
| MHA AGRADAT TREBALLAR GRAN I PETIT | MHA AGRADAT TREBALLAR EL CICLE DE |  |  |
| LA PAPALLONA |  |  |  |


| M'AGRADA PARLAR EN ANGLĖS | (0) | ( ) | 5 |
| :---: | :---: | :---: | :---: |
| M'AGRADA APRENDRE ANGLĖS | \% |  | 5 |

DURANT LA CLASSE MHE SENTIT.-

$\qquad$
LES ACTIVITATS QUE HEM FET..

| $\because$ | MHAN AGRADAT MOLT |
| ---: | :--- |
| $\because$ | MHAN AGRADAT UNA MICA |
| $\because$ | NO MHAN AGRADAT |


|  | MOLT | UNA MICA | GENS |
| :---: | :---: | :---: | :---: |
| MHA AGRADAT EL JOC D'ALIMENTAREL CATERPILLAR | (6) | (シ) | \% |
| MPHA AGRADAT FER EL MURAL | (6) | (-) | 5 |


| M'AGRADA PARLAR EN ANGLĖS | (6) | ( | $\bigcirc$ |
| :---: | :---: | :---: | :---: |
| M'AGRADA APRENDRE ANGLĖS | (6) | (-) | $\bigcirc$ |

DURANT LA CLASSE MHE SENTIT.-


### 10.3 Results of the assessment and self-assessment

In this section you can find all the results of the assessment and the self-assessments that I made during my didactic unit.

### 10.3.1 Assessment

Here you can find the results of the assessment that I made of each pupil (the complete chart of each class), the statistics and the bar chart.







### 10.3.2 Self-assessment

Here you can find the results of the self-assessment that the pupils answer (the complete chart of each class) and the statistics.

| $\begin{aligned} & \text { Group B } \\ & 11-11 \end{aligned}$ | O |  |  |  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 1 \\ & 1 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |  |  | M'agrada aprendre andes |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 2 | 2 | 1 | - | 1 | 2 | 2 | normal |  |
| $2 \mathrm{~L}=1$ | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | contenta |  |
| $3-1$ | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | contenta |  |
| $4=$ | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 5 | 2 | 1 | 2 | 2 | - | 2 | 2 | 1 | normal |  |
| 6 는 | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 7 . | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 8 - ${ }^{\text {d }}$ | 2 | 2 | 2 | 2 | - | 1 | 2 | 2 | contenta |  |
| 9 . 1 재ํ | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 10 | 2 | 2 | 1 | 2 | - | 2 | 2 | 2 | content |  |
| 11. | 2 | 2 | 2 | 1 | - | 1 | 2 | 2 | normal |  |
| 12. | 1 | 2 | 1 | 1 | - | 0 | 1 | 2 | content |  |
| 13 . | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 14. ${ }^{-15}$ | 2 | 2 | 2 | 0 | - | 2 | 2 | 2 | normal |  |
| 15 | 1 | 1 | 2 | 2 | - | 2 | 1 | 2 | contenta |  |
| 16. | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | contenta |  |
| 17 . | - | - | - | - | - | - | - | - | - |  |
| 18 . B $^{\text {a }}$ | 1 | 1 | 2 | 2 | - | 2 | 1 | 2 | trist |  |
| 19 . | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | normal |  |
| 20 | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 21 - | 1 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| $22=$ | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | content |  |
| 23 , | 2 | 2 | 2 | 0 | - | 2 | 2 | 2 | normal |  |
| 24 - | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | normal |  |


| Molt | 2 |
| :--- | :--- |
| Una mica | 1 |
| Gens | 0 |


| Number pupils |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 19 | 20 | 21 | 18 | 0 | 19 | 20 | 22 |
| Una mica | 4 | 3 | 2 | 3 | 0 | 3 | 3 | 1 |
| Gens | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 |
| Total | 23 | 23 | 23 | 23 | 0 | 23 | 23 | 23 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 22 | 21 | 21 | 20 | 0 | 19 | 18 | 23 |
| Una mica | 1 | 2 | 2 | 0 | 0 | 2 | 4 | 0 |
| Gens | 1 | 1 | 1 | 4 | 0 | 3 | 2 | 1 |
| Total | 24 | 24 | 24 | 24 | 0 | 24 | 24 | 24 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 21 | 23 | 0 | 0 | 13 | 21 | 23 |
| Una mica | 2 | 0 | 0 | 0 | 7 | 2 | 0 |
| Gens | 1 | 1 | 0 | 0 | 4 | 1 | 1 |
| Total | 24 | 24 | 0 | 0 | 24 | 24 | 24 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 21 | 23 | 0 | 0 | 19 | 18 | 24 |
| Una mica | 2 | 1 | 0 | 0 | 3 | 3 | 0 |
| Gens | 1 | 0 | 0 | 0 | 2 | 3 | 0 |
| Total | 24 | 24 | 0 | 0 | 24 | 24 | 24 |



| $\begin{aligned} & \text { Group B } \\ & 25-11 \end{aligned}$ |  |  | M'ha agadat fer el minadat... | - |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 2 | - | 1 | 2 | contenta |  |
| $2-1$ | 2 | 2 | - | 2 | 2 | contenta |  |
| $3 \quad=1$ | 2 | 2 | - | 2 | 2 | normal |  |
| 4 - ${ }^{3}$ | 2 | 2 | - | 0 | 0 | content |  |
| 5 - | 2 | 2 | - | 2 | 2 | normal |  |
| 6 - | 2 | 2 | - | 2 | 2 | content |  |
| 7 7 | 2 | 1 | - | 1 | 2 | content |  |
|  | 2 | 2 | - | 2 | 2 | contenta |  |
| 9 9 | 2 | 2 | - | 2 | 2 | normal |  |
| 10 | 2 | 2 | - | 2 | 2 | content |  |
| 11 - | 1 | 2 | - | 1 | 2 | contenta |  |
| 12 | 2 | 2 | - | 0 | 0 | content |  |
| 13 = | 2 | 2 | - | 2 | 2 | normal |  |
| $14=1$ | 2 | 0 | - | 2 | 2 | contenta |  |
| $15 \sim$ | 2 | 2 | - | 2 | 2 | normal |  |
| 16 는 | 2 | 2 | - | 2 | 2 | contenta |  |
|  | 0 | 1 | - | 1 | 0 | trist |  |
|  | 2 | 2 | - | 2 | 2 | normal |  |
| 19 - | 2 | 2 | - | 2 | 2 | contenta |  |
| 20 - | 2 | 2 | - | 2 | 2 | content |  |
| 21 - | 2 | 2 | - | 2 | 2 | content |  |
| $22=$ | 2 | 2 | - | 2 | 2 | content |  |
| 23 - | 1 | 2 | - | 1 | 2 | enfadat | perquè m'han empès |
| 24 - | 2 | 2 | - | 2 | 2 | contenta |  |


| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Molt | 21 | 21 | 0 | 17 | 21 |
| Una mica | 2 | 2 | 0 | 5 | 0 |
| Gens | 1 | 1 | 0 | 2 | 3 |
| Total | 24 | 24 | 0 | 24 | 24 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Molt | 22 | 24 | 0 | 18 | 22 |
| Una mica | 2 | 1 | 0 | 5 | 2 |
| Gens | 1 | 0 | 0 | 2 | 1 |
| Total | 25 | 25 | 0 | 25 | 25 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 20 | 14 | 21 | 20 | 0 | 15 | 18 | 22 |  |
| Una mica | 3 | 8 | 1 | 3 | 0 | 5 | 4 | 0 |  |
| Gens | 1 | 2 | 2 | 1 | 0 | 4 | 2 | 2 |  |
| Total | 24 | 24 | 24 | 24 | 0 | 24 | 24 | 24 |  |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 21 | 21 | 21 | 22 | 0 | 17 | 18 | 23 |
| Una mica | 3 | 3 | 3 | 2 | 0 | 5 | 4 | 1 |
| Gens | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| Total | 24 | 24 | 24 | 24 | 0 | 24 | 24 | 24 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 16 | 10 | 21 | 15 | 13 | 16 |
| Una mica | 6 | 8 | 2 | 7 | 6 | 4 |
| Gens | 1 | 5 | 0 | 1 | 4 | 3 |
| Total | 23 | 23 | 23 | 23 | 23 | 23 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 22 | 15 | 22 | 22 | 19 | 20 |
| Una mica | 1 | 8 | 2 | 1 | 4 | 3 |
| Gens | 1 | 1 | 0 | 1 | 1 | 1 |
| Total | 24 | 24 | 24 | 24 | 24 | 24 |




| Molt | 2 |
| :--- | :--- |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 14 | 14 | 19 | 0 | 14 | 17 |
| Una mica | 7 | 5 | 2 | 0 | 4 | 2 |
| Gens | 1 | 3 | 1 | 0 | 4 | 3 |
| Total | 22 | 22 | 22 | 0 | 22 | 22 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Molt | 22 | 21 | 20 | 0 | 18 | 19 |
| Una mica | 1 | 3 | 4 | 0 | 4 | 4 |
| Gens | 1 | 0 | 0 | 0 | 2 | 1 |
| Total | 24 | 24 | 24 | 0 | 24 | 24 |




| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Molt | 19 | 21 | 17 | 14 | 20 |
| Una mica | 5 | 3 | 5 | 7 | 2 |
| Gens | 0 | 0 | 2 | 3 | 2 |
| Total | 24 | 24 | 24 | 24 | 24 |



| $\begin{aligned} & \text { Group A } \\ & 10-12 \end{aligned}$ |  |  |  |  | - |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 In | 2 | 1 | 2 | 2 | 1 | normal |  |
| 2 - | 2 | 2 | 2 | 2 | 2 | content |  |
| 3 m | 2 | 2 | 2 | 2 | 0 | normal |  |
| 4 | 2 | 2 | 2 | 2 | 2 | content |  |
|  | 2 | 1 | 2 | 2 | 1 | normal |  |
| 6 W | 2 | 2 | 2 | 2 | 2 | contenta |  |
| 78 | 1 | 1 | 1 | 1 | 1 | normal |  |
| 8 . | 2 | 2 | 2 | 2 | 2 | content |  |
|  | 2 | 2 | 2 | 2 | 2 | avorrit | perquè havíem d'esperar |
| 10 | 2 | 2 | 2 | 2 | 2 | content |  |
| 11 . | 2 | 2 | 2 | 2 | 2 | content |  |
| 12. | 2 | 2 | 2 | 2 | 2 | content |  |
| 13 ㅍㅏㅜㄹ | 2 | 2 | 2 | 2 | 2 | contenta |  |
| 14 | 1 | 2 | 2 | 1 | 2 | content |  |
| 15 | 2 | 2 | 2 | 2 | 2 | contenta |  |
| 16 배느․ | 2 | 2 | 2 | 2 | 2 | content |  |
| 17 H ${ }^{\text {d }}$ | 1 | 2 | 1 | 1 | 2 | normal |  |
| 18 . $=$ | 1 | 2 | 2 | 2 | 2 | normal |  |
| 19 . | 2 | 2 | 2 | 1 | 1 | content |  |
| 20. | 2 | 2 | 2 | 2 | 2 | normal |  |
| 21. | 2 | 2 | 2 | 2 | 2 | contenta |  |
| $\frac{22}{} \cdot \underline{y}$ | 2 | 1 | 2 | 1 | 1 | normal |  |
| 23 - | 2 | 1 | 0 | 1 | 2 | normal |  |
| 24. | 2 | 2 | 2 | 1 | 1 | content |  |
| 25 | 2 | 2 | 2 | 2 | 2 | normal |  |
| 26, | 2 | 2 | 2 | 2 | 2 | content |  |


| Molt | 2 |
| :--- | :---: |
| Una mica | 1 |
| Gens | 0 |


| Number of pupils |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Molt | 22 | 21 | 23 | 19 | 19 |
| Una mica | 4 | 5 | 2 | 7 | 6 |
| Gens | 0 | 0 | 1 | 0 | 1 |
| Total | 26 | 26 | 26 | 26 | 26 |



### 10.4 Interview

The interview with the English teacher is the following.

1. Has vist diferències entre la motivació dels alumnes en una classe on s'utilitzava la PDI i en una classe on no s'utilitzava?

Sí, perquè les noves generacions d'alumnes han crescut amb les tecnologies i estan molt motivats. És una eina d'aprenentatge que permet la interacció.
2. Creus que els alumnes estaven motivats mentre realitzaven les activitats amb la PDI?

Els alumnes estaven molt motivats amb els jocs interactius.
3. En una classe on s'utilitzava la PDI, hi ha hagut moments en què els has vist més motivats que en una classe sense l'ús d'aquesta eina?
Sí, estan més motivats perquè és una eina de treball diferent, on els alumnes participen activament.
4. Quins aspectes consideres que són més positius i quins negatius pel que fa a l'ús de la PDI a l'aula?
Aspectes positius:

- L'alumne pot participar de forma activa en jocs interactius, presentant treballs davant de la classe, etc.
- Permet accedir de forma immediata a qualsevol tipus d'informació.
- Permet utilitzar material informàtic i didàctic que prepara el professorat.

Aspectes negatius:

- La manca de temps del professorat per preparar material informàtic adequat al seu alumnat.
- La dificultat per poder treballar amb un grup reduït d'alumnes a I'hora de realitzar els jocs interactius.
- La connexió a Internet és molt lenta i sovint falla.

5. Hi ha alguna altra referència que vulguis fer pel que fa a la motivació dels alumnes?

Res més.


[^0]:    ${ }^{1}$ The pictures of each activity are in the annex 10.1
    ${ }^{2}$ The example of the assessment is in the annex 10.2.1
    ${ }^{3}$ The example of the self-assessment is in the annex 10.2.2

[^1]:    ${ }^{4}$ The complete grids and the statistics of the assessments of each group are in the annex 10.3.1

[^2]:    ${ }^{5}$ The complete grids and the statistics of the self-assessments of each group are in the annex 10.3.2

[^3]:    ${ }^{6}$ The interview with the teacher is in the annex 10.4

