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**MOTIVATION THROUGH INFORMATION AND
COMMUNICATION TECHNOLOGY USE IN SECONDARY
STUDENTS**

**MOTIVACIÓN POR EL USO DE LAS TECNOLOGÍAS DE LA
INFORMACIÓN Y LA COMUNICACIÓN EN ESTUDIANTES DE
SECUNDARIA**

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1. ABSTRACT

Nowadays, society is living in a technological world. ICT (Information and Communication Technology) is everywhere around people and it is unconsciously used in almost every moment in the daily life. Taking this fact into account, ICT must be included in one of the most important moments in children's life: education. Educators should be able to change the teaching-learning process in order to introduce technology. Teachers should use ICT to teach their subjects and lessons. In addition, motivation also has an important role in the teaching-learning process. It would be important for teachers and students to be motivated in the ICT use. What we intend with this study is to verify whether secondary school students are motivated by the ICT use in the English classroom. In order to achieve the goal, we have administered a questionnaire using gender, school level and age as independent variables as well as fourteen questions as dependent variables. After analysing data we can conclude that girls are more motivated than boys by ICT use during the first secondary school cycle. However, male students are more motivated than female ones though ICT use during the second school cycle in secondary education.

KEY WORDS: ICT, motivation, secondary education, secondary students, secondary teachers, English subject, FL teaching

RESUMEN

Hoy en día, la sociedad vive en un mundo tecnológico. Las TIC (Tecnologías de la Información y la Comunicación) están en todos sitios alrededor de la gente e inconscientemente son usadas en casi todos los momentos de nuestra vida diaria. Por esta razón, las TIC deberían estar incluidas en uno de los momentos más importantes de la vida de los niños: la educación. Los profesores deberían ser capaces de cambiar el proceso de enseñanza-aprendizaje para introducir la tecnología en dicho proceso y estos deberían usar las TIC para impartir sus asignaturas. Además, la motivación juega un papel muy importante en el proceso de enseñanza-aprendizaje, por lo que es importante que los estudiantes y los profesores estén motivados por el uso de las TIC. Lo que se pretende con este estudio es verificar si los estudiantes de Enseñanza Secundaria Obligatoria (ESO) están motivados por el uso de las TIC en la clase de

inglés. Para conseguir este objetivo, hemos hecho un cuestionario usando género, curso escolar y edad como variables independientes así como catorce preguntas como variables dependientes. Después de analizar los datos obtenidos se ha podido concluir que las chicas están más motivadas que los chicos por el uso de las TIC en la asignatura de inglés durante el primer ciclo de Enseñanza Secundaria, mientras que en el segundo ciclo son los chicos los que están más motivados al usar las TIC en clase de inglés.

PALABRAS CLAVE: TIC, motivación, educación secundaria, estudiantes de secundaria, profesorado de Secundaria, asignatura de inglés, enseñanza de una lengua extranjera

2. INTRODUCTION AND JUSTIFICATION

Throughout the course of history, different kinds of technology have been changing society wherever it has been applied. Nowadays, ICT has influenced on almost every aspect of our society. At the same time as society changes, education may not stay in the sidelines, being this reason why it is introducing the use of ICT in the teaching-learning process. According to Franziska Lys: “no es la tecnología lo que hace exitosa la enseñanza sino el cuidado y atención prestados a la integración pedagógica de estas nuevas tecnologías y las oportunidades que se presentan como resultado” (cited in Rubio & Daniel, 2012, p. 1)¹.

ICT is an essential tool in the educational field. When the aim is a foreign language (FL), students should be exposed to plenty of opportunities. Due to ICT use, learners might learn oral and written comprehension and production in an easier and more dynamic way (Izquierdo, 2014). In addition, ICT is not understood simply as a tool, but as a tool the main aim of which is to help students to learn in an efficient way. At the same time, several ways to teach beyond the conventional ones could be created (Chapelle, 2002) and raising the students' interest would motivate them to learn (Izquierdo, Simard & Garza, 2015).

To talk about ICT in education it is necessary to have a background. In this case, Garrido Agudo and Ortega Martín (2014) are two of the main authors who explained all the background of all the projects, which are related to the use of ICT in Andalucía:

- The first project, the *Averroes Project*, took place in 1996. It was created by the Ministry of Education and as it was designed to be “a computer network for non-university academic institutions in Andalucía which could use the Internet as an information, communication and training tool” (Garrido Agudo & Ortega Martín, 2014, p. 56). Some web pages such as *Séneca* were created in order to share information in forums and materials amongst teachers. Nevertheless, it was not given enough sufficient support by the academic community.

¹ “Technology is not the only thing that makes the teaching process successful but the care and attention given to the pedagogic integration of these new technologies and to the opportunities given as a result” (My translation).

- The second project was the *Royal Decree 72/2003* of 18th March. As Garrido Agudo & Ortega Martín (2014) made clear, “it was aimed at improving the quality of life, reaching a greater social and territorial balance and increasing the production and competitiveness of Andalucía” (p. 56). In addition, and keeping in mind this *Royal Decree*, teachers were supposed to receive training in order to be able to use ICT in connection with their teaching process.

- The last project, which was developed at the beginning of the academic year 2009/2010, was named by the Regional Ministry of Education as *Escuela TIC 2.0*. This project aimed to make ICT the main teaching tool during the learning process inside the classroom. Schools were equipped with laptops, interactive whiteboards, projectors and other multimedia resources (Garrido Agudo & Ortega Martín, 2014). Also, teachers, who would be in charge for the appropriate use of all these tools, were encouraged to start participating in several training courses to learn how to use all this new technology in the most efficient and appropriate way. According to these authors, this project pretended set out to achieve at least four different aims, which were the following ones:

- To deal with the quality of education and equal opportunities
- To manage to use ICT quality in the classroom as a learning school
- To develop a methodological change that implies significant learning, constructivism, connectivism, specific teaching and basic competences
- To develop students’ basic competences (Garrido Agudo & Ortega Martín, 2014, p. 57).

On the other hand, it seems to be clear the fact that a lot of factors can influence motivated students. In addition, teachers should be able to motivate their students. Motivation may be defined as: “la atracción hacia un objetivo, lo que va a implementar que la acción de una persona le permita aceptar el esfuerzo necesario para alcanzar dicho objetivo” (García-Sánchez & Cruz, 2016, p. 73)². According to Dörnyei and Csizér (1998), there are several aspects to consider when the digital natives³ are motivated.

2 “The attraction to achieve an objective, which implements that someone’s action let him making an effort to achieve the already stated aim” (My translation).

3 “Individuals for whom digital technology has become ubiquitous” (Vera Cazorla, 2010, p. 212).

Concerning this, students are totally different from one another, having different motivation levels and types. This is the reason why each student should receive a personalised education and teachers are supposed to adapt their teaching process to each learner's needs.

Keeping in mind all we have already said here, the structure of this paper is as follows: after this introduction – in which the justification for the topic will also be included – the hypothesis and the aim will be explained. After them, the literary review will be developed. This part of the paper will be divided into several subsections. The ICT section will come first. It will include an explanation of what ICT means as well as its advantages and disadvantages. In relation to the second one, motivation's topic will be exposed, including some of its different types too. Finally, a third part will analyse the motivation in the classroom attributable to ICT use. As a continuation of the paper, the data analysis and its results will be included. The data analyse whether students in the 1st, 2nd, 3rd and 4th level of Educación Secundaria Obligatoria (from now on referred as secondary school or ESO) at La Salle-Chocillas school are motivated through the use of ICT in their English lessons. The questionnaires used to measure this will be included at the end of the paper, in appendix 1. To finish with, our research conclusions and several pedagogic implications⁴ will be developed at the end of the paper.

Considering our justification to choose this topic and in relation to what has been exposed before some points should be clarified. First of all, I consider that the teaching-learning process should be adapted not only to society but also to its environment. Nowadays we live in a technological era in which technology is used by everybody – which includes students – and we have to take advantage of it. In addition, the difference of age between teachers and students is usually quite big. From my point of view, this gap could be closed if teachers try to understand the student's way of thinking, getting closer to them through ICT use during the lessons. Finally, I consider that motivation is one of the most important factors in the teaching-learning process. Teachers have to be motivated in order to motivate their students as

⁴ Conclusions and pedagogic implications will be included in Spanish following the rules of the University of Almería

well. Both affect the others' motivation. Nevertheless, there are progressively more teachers who suffer from *burnout syndrome* – which is defined by Saiiari et al. in Barutçu and Serinkan (2013) as “a syndrome of physical and emotional exhaustion relating to the development of harmful job attitudes, meagre professional self-concept, and loss of empathic concern for regulars” (p. 319). This is the reason by which they “develop negative self-efficacy expectations” (Silvero Miramón, 2007, p. 115). I think one of the solutions to this problem might be the use of ICT in the classrooms. Using these tools, teachers could be closer to the students, making the lessons funnier and more innovative and dynamic for the students, who would be more motivated and motivating of teachers at the same time.

Finishing the justification for this research work and taking everything that has been said before into account, are students really motivated by ICT use in the lessons? What is the real cause of secondary students' motivation? Does it changes over the years? These questions will be answered by the end of this paper.

3. HYPOTHESIS AND OBJECTIVE

The hypothesis of this research work is the following one:

1. The use of ICT in secondary school levels motivates students to learn English.

The objective of this paper is:

1. To study whether students are motivated by the use of ICT in the English classroom paying attention to their gender.

4. THEORETICAL CONTEXT

This section, in which we are going to include some points related to the theory which is relevant to this research work, is divided into several parts. First, some general information and definitions are given. In addition, it is well known that some

teachers may believe that ICTs are considered as something to take advantage of, while others do not believe that. All the advantages and disadvantages are developed in the second part of this section. Equally important in this research work is motivation. Taking this into consideration, parts three and four are given over to it. The third part will be related to motivation and some of its types. Finally, in the last part, some ICT resources to raise students' motivation are described.

4.1. What does ICT stand for?

According to Cabero (1998):

En líneas generales podríamos decir que las nuevas tecnologías de la información y comunicación son las que giran en torno a tres medios básicos: la informática, la microelectrónica y las telecomunicaciones; pero giran, no sólo de forma aislada, sino lo que es más significativo de manera interactiva e interconexiónadas, lo que permite conseguir nuevas realidades comunicativas (p. 198)⁵

and according to Collins Dictionary, ICT is defined as the “activities or studies involving computers and other electronic technology”. Several electronic tools such as computers and laptops, digitizer tablets or digital blackboard may be included in the term ICT. There are plenty of Information Technology (IT) tools which may help teachers to introduce several topics in a dynamic and authentic way. In addition, there are numerous requirements which should be met in order to achieve the real integration of ICT in the schools. Garrido Agudo & Ortega Martín (2014) claim that the quantity of ICT resources “has to be reliable, adapted and available” (p. 59) to students and to teachers. Also, it is necessary that curriculums are adapted to ICT. Schools have to provide teachers with all the material needed and, at the same time, they should be able to support the educators in the use and development of technology.

⁵ “Generally speaking it could be said that new ICT are those which revolve around three basic medium: computing, microelectronics and telecommunications; they revolve around not only in isolation, but also in an interactive and interconnected way, which is more significantly. This allows new communicative realities“ (My translation).

4.2. ICT: advantages and disadvantages

According to several researchers such as Dikkers, Martin & Coulter (2011) or Xu (2010), ICT use might contribute to a better understanding and acquisition of a FL. In addition, Prieto claims (as it was cited in Montes & Vallejo, 2016, 231): “integrar los recursos de las TIC en la labor docente cotidiana se ha convertido en una demanda social, una necesidad para los docentes, un derecho para los alumnos y una obligación para las administrativas educativas”⁶.

Taking this fact into consideration, it is believed that there are more than a few visible advantages for those teachers and learners who use MALL (Multimedia-Assisted Language Learning) in their daily teaching and learning process. In relation to the students’ and teacher’s advantages, it appears to be possible to make the following points:

Firstly, “new mobile media technology (MMT) is moving both information and communication away from central repositories and into each individual learner’s hands” (Dikkers, Martin & Coulter, 2011, p. 21). ICT allows students to be more autonomous, this being the main characteristic of the learning process. Although there are supposed to be roughly 25 students per classroom, there is quite a low likelihood of this happens in the current educational system. ICT use might make learners able to learn in their own way. Independent learning develops students learning progress as far as they would like. Students may be described as knowledge generators as well. Nevertheless, this is not the only way of learning involved. Peers cooperation may be developed as well – improving students’ capacity to work in groups. Moreover, and according to Domingo & Marquès (2011), it is suggested that the fact that comprehension increases by 98% when ICTs are used. Both Domingo & Marquès (2011) also claim that students’ participation in tasks also increases by 88%, which is related to the achievement of aims (increased to 90%). As a result of all of this, students appear to be more motivated, which has a positive impact on teachers’ motivation.

⁶ “Using ICT resources in the daily teaching means a social request, a teachers’ necessity, a right of students and an educational administration obligation” (My translation).

Secondly, teachers also think that using ICTs in their daily lessons is mainly positive. According to their opinion, they are able to give instantaneous feedback to students. In addition, Domingo & Marquès (2011) claim that teachers are able to use more material and resources, which makes it possible to contextualise the activities in a better way. Moreover, it is possible to focus on students' diversity at the time that collaborative tasks are being done by learners. They also place emphasis on the possibility of learning some competences with the ICT use – in particular, the digital competence and learning to learn. In relation to motivation and its enhancement through ICT use:

“El uso de las TIC tiende a incrementar la motivación, ya que como se ha comprobado, aprender cualquier disciplina con el soporte de un ordenador produce disfrute en el alumno y es percibida por este como importante”
(Ruthven, Hennesy & Deaney cited in Montes and Pantoja Vallejo, 2016, p. 233)⁷

On the contrary, and as has been clarified before, there seem to be a few disadvantages as well. In connection with those concerning students, the main disadvantage might be the fact that it is likely the learners' may not pay enough attention to what it is being taught by the teachers. At the same time, teachers might also find a few disadvantages. There seems to be an assumption that more time will be needed for lesson preparation. In addition, they also emphasize the technological problems that might make them lose some teaching time in their sessions (Domingo & Marquès, 2011; Montes & Vallejo, 2016).

4.3. What does motivation mean?

The general concept of motivation, as is cited by Richards et al. in Sugimoto, Rahimpour & Yaghoubi-Notash (2006), is defined in the *Longman Dictionary of Applied Linguistics* as “the factors that determine a person's desire to do something” (p. 153). It is also important to take into account that “motivation in modern approaches to human behaviour is no longer viewed as a static product characteristic of a learner

⁷ “ICT use tends to raise motivation because as it has been confirmed, learning any discipline with a computer support makes students having fun and it is perceived as important” (My translation).

[but] it is seen as a process through which the learner is involved in some action or another” (Sugimoto, Rahimpour & Yaghoubi-Notash, 2006, p. 153).

Nevertheless, the notion of motivation according to the educational field is included in Cubero Molina et al. (as it was cited in García-Sánchez & Cruz Vargas, 2016) as one of the factors that make teaching and learning successful for students and teachers, who are supposed to be a motivating element in the classroom. As Ray (1992) rightly claimed “motivation is an essential condition of learning” (p. 4). In education, motivation is concerned with students but also with teachers. In relation to students, Ames (as it was cited in Ray, 1992) claimed that “if we place a value on developing a motivation to learn in students, we are concerned with whether students initiate learning activities and maintain an involvement in learning as well as a commitment to the process of learning” (p. 4). Moreover, teachers’ role is to guide students, helping them to achieve goals and to develop attitudes which contribute to their long-term involvement in learning (Ray, 1992). However, Dörnyei (1998) asserted “without sufficient motivation, even individuals with the most remarkable abilities cannot accomplish long-term goals, and neither are appropriate curricula and good teaching enough on their own to ensure student achievement” (p. 117).

Bearing this in mind, it is important to clarify that foreign language (FL) learning process might be affected by different types of motivation based on different reasons or goals to learn. Some basic motivation types and definitions of theories are given below.

On the one hand, people who have intrinsic motivation do something because it is essentially interesting for them and they really enjoy doing this action, resulting in learning of high quality. Deci (as it was cited in Ray, 1992) claimed that “intrinsically motivated activities are ones for which there is no apparent reward except the activity itself. The activities are ends in themselves rather than means to an end”. Motivation is intrinsic when it comes from within the individual. As an example, students might be intrinsically motivated when having fun and enjoyable moments is the only reasons for learning a FL. As Ryan & Deci (2000) claim that being active, curious, inquisitive and

playful are some human characteristics from birth onwards. There are no external incentives to develop the interest to do something. In the same way, both maintain that although intrinsic motivation exists within individuals and there might be relation between people and the activities and tasks they perform, not everybody may be motivated by the same activity: “some authors have defined intrinsic motivation in terms of the task being interesting while others have defined it in terms of the satisfaction a person gains from intrinsically motivated task engagement” (Ryan & Deci, 2000, p. 56).

On the other hand, and taking into account the fact that people might not act on their intrinsic motivation, it is possible to distinguish the extrinsic motivation. The second type of motivation is related to doing an activity in order to achieve a specific aim and outcome. As an example, students are extrinsically motivated when they need to get some specific FL level to get a scholarship. In this example, students have an intentional behaviour, this being the reason by which they would be extrinsically and not intrinsically motivated. However, people’s reasons to act in one or another way might not be totally intrinsic or extrinsic but there is often a mutual influence (Gràcia, Sanlorien & Segué, 2017). In addition, it must be taken into account that extrinsic motivation may become intrinsic motivation.

Ryan and Deci (2000) well claimed that it is important to teachers to be able to distinguish between both types of motivation:

because many of the tasks that educators want their students to perform are not inherently interesting or enjoyable, knowing how to promote more active and volitional (versus passive and controlling) forms of extrinsic motivation becomes an essential strategy for successful teaching (p. 55)

Furthermore, motivation is directly related to the learning process. With the introduction of Communicative Language Teaching (CLT) in the teaching process, students’ role started to be more active – while the teachers’ role was only to be a guide and a facilitator of learning opportunities. As students are supposed to be the

centre of the lessons, they are also supposed to be in charge of their own learning process. Zimmerman & Labuhn (as it was cited in de la Fuente Arias & Justicia Justicia, 2018) talk about the auto-regulation importance in the learning process, which in the end is connected to self-motivation and self-determination.

Self-Determination Theory (SDT) is, according to self-determination theorists, related to human behaviours. This means that, in the end, “they are interested in issues related to intrinsic and extrinsic motivation” (Anderman & Anderman, 2014, p. 5). In addition, they believed that people considered as amotivated, have low chances of achieving their needs. Ryan & Deci (as it was cited in Anderman & Anderman, 2014) think that amotivated people are neither intrinsically nor extrinsically motivated.

Finally, the attribution theory provides us with different forms of how people explain to themselves the reasons for their success and failures (Ray, 1992; Graham & Weiner, in Anderman & Anderman, 2014). According to Ray (1992), these forms determine whether the reason something happens in someone’ life is by “ability, effort, mood, difficulty of task, teacher bias, luck or chance and unusual help from others” (p. 9).

4.4. Motivation in the English classroom through ICT use

Students and teachers have to adapt the learning and teaching process to the ICT use. Although their roles have changed, both should be motivated in order to motivate the other one in an indirect way (Ray, 1992; Bertoglia Richards, 2005; Escobar Medina, 2015).

Nowadays, it is considered a fact that students prefer working in groups, which is more motivational for them. Also, “millenials”⁸ (Mason & Rennie, 2008, p. 8) might prefer interactive tasks and learning from audio and visual resources (Vera Cazorla, 2010). As Hennessy (as it was cited in Garrido Agudo & Ortega Martín, 2014) well claimed “the regular use of ICT across the curriculum can increase students’ confidence and motivation in learning”. In addition, Becker (cited in Garrido Agudo & Ortega Martín,

⁸ “Nickname to refer to those born since 1982” (Mason & Rennie, 2008, p. 8).

2014) asserted that “teachers providing ICT activities offering opportunities for active, independent learning can increase students’ motivation to learn”.

ICT introduction in the learning and teaching processes makes it possible to use new resources. This fact gives teachers the opportunity to teach in a dynamic and interesting way for the students. In addition, a personalised, spontaneous and ubiquitous learning may be possible, motivating the students to learn by themselves. To Loazia (2010), ICT has contributed to the creation of new tools which are being incorporated into the educational field little by little, their goal being to favour students-teachers communication. From this perspective, there are several resources that might be used in both processes in the English as a foreign language classroom. All of them might be classified as communicative applications, office automation applications, interactive applications or those which allows the access to content.

- Canva (<https://www.canva.com/>): application with which students are able to create posters, cards... It may be a good idea to use it as a post-comprehension activity, in which they would have to create a poster according to what they have read.

- SymbalooEDU (<https://symbalooedu.es/>): a tool which allows students and teachers to collect and share resources online in a visual and intuitive way. The app Lesson Plans, which is possible to find in SymbalooEDU, is mainly for those who work in the educational field. It allows design and share personalised digital resources.

- Kahoot! (<https://kahoot.it/>): a tool by which it is possible to create a funny learning game in few minutes. It is free to use one of the quizzes, jumbles, surveys and discussions already created by other teachers and create new ones.

- Pear Deck (<https://www.peardeck.com/>): this application allows teachers to give a lesson while their students receive some extra examples and tasks on their devices. Its main aim is to have bidirectional lessons, taking full advantage of explanations.

- Brainscape (<https://www.brainscape.com/>): easy learning and teaching with flashcards is possible with this application. Teachers may borrow one already created by other educators, to create a new one or even let their students create them. In addition, analysing student’s study habits, identifying weaknesses is possible.

- BrainPOP (<https://www.brainpop.com/>): it is a tool which allows teachers and students to be involved in the teaching-learning process. This application allows students to access videos and activities mainly to develop their reading, writing and grammar. BrainPOP Maestros (<https://maestros.brainpop.com/>) is the version for teachers, which allows them access to lesson planning or printable resources. All resources found in both applications, which are motivational and dynamic for students, are designed to explain difficult concepts in an easy way.

- SpeakingPal (<https://www.speakingpal.com/>): an interactive application in which it is possible to practice and develop the oral skill. It also includes video lessons as well as quizzes.

- Quizlet (<https://quizlet.com/>): application to create content. It makes it possible to create flashcards and games by lessons. The teacher is able to look at the students' progression when they finish the lesson.

- ClassDojo (<https://www.classdojo.com/>): this application makes it possible for teachers get in touch with students and their parents in order to share pictures or posters about what their children learnt in the lessons.

- Genially (<https://genial.ly/>) helps teachers to create new interactive content as presentations, videos, quizzes or posters in a visual and communicative way.

All these interactive applications might be used during the lesson in order to motivate the students to learn about the subject in a dynamic way. Using all of them at the same time might be stressful to the teacher and students might get bored of them. Nevertheless, alternating their use could be the best possibility of giving lessons in a funny and dynamic way.

5. METHODOLOGY

This type of investigation is part of what it is considered as a classroom research⁹. Taking this into account, it has been developed a quantitative questionnaire

⁹ A classroom research is "any study that examines how teaching and learning takes place in a context" (Dörnyei, 2011, p. 176).

(appendix 1) – defined by Dörnyei (2011) as variables which are assigned a logical scale of values, which may be expressed in numbers. The next sections explain the methodology we followed to create the questionnaire.

5.1. Sample

The participants are 93 students of ESO who study in La Salle-Chocillas school (Almería). 100% of the participants study English as the compulsory first foreign language, French being the second one.

Regarding the level, the participants can be described as follows: 29% belong to the first level of ESO; 29% belong to the second level; 20,4% belong to the third level and 21,5% belong to the fourth level.

In addition, some factual questions have also been included in order to find out their gender and age. These data have been analysed as independent variables. In relation to gender, 40,9% are boys while 59,1% are girls. The participants' age ranges from 12 to 17 years old. In this way 19 out of 93 participants (20,4%) are 12 years old; 22 (23,7%) are 13 and 14 years old (23,66% each one), 18 (19,4%) are 15 years old, 10 (10,8%) are 16 years old and finally, only 2 students (2,2%) are 17 years old. All data that appears is shown in the following tables:

By gender:

	TOTAL STUDENTS	TOTAL PERCENTAGE
MEN	38	49,9%
WOMEN	55	51,1%

By age:

AGE	12	13	14	15	16	17
TOTAL STUDENTS	19	22	22	18	10	2
TOTAL PORCENTAGE	20,4%	23,7%	23,7%	19,4%	10,8%	2,2%

By academic level:

	TOTAL STUDENTS	TOTAL PERCENTAGE
MEN	11	

1 st LEVEL	WOMEN	16	27	29,04%
2 nd LEVEL	MEN	12	27	29,04%
	WOMEN	15		
3 rd LEVEL	MEN	9	19	20,04%
	WOMEN	10		
4 th LEVEL	MEN	6	20	21,5%
	WOMEN	14		

5.2. Material

In order to carry out our investigation, a questionnaire (appendix 1) addressed to all the participants in the research was created. Its administration took place during the second term of the school year, three weeks before the Easter break. Taking this fact into consideration, its writing was adapted when we thought it was necessary. This was considered advisable to allow for better comprehension by the students. For a better use of all the data analysed, the items were numbered consecutively. In this way, misunderstandings that might occur when presenting the results and the conclusions were avoided.

The questionnaire consisted of 14 attitudinal questions – which were used to find out what students thought as well as their opinions and beliefs (Dörnyei, 2011, p. 102). All questions were analysed as dependent variables¹⁰. The first six questions (items 1 - 6) were quantitative and related to ICT use in the English classroom. Finally, the last eight questions (items 7 - 14) were quantitative and related to the students' motivation towards ICT use in the English classroom. What's more, questions written up as negative (items 7 and 10) were inverted to analyse all the data in an affirmative way. Students' age, gender and school year were also asked as independent variables¹¹.

5.3. Procedure

5.3.1. Design

More than twenty hours of intensive work were devoted to the design of the questionnaire. Significant data from several theories, procedures and techniques have

¹⁰ "Variables whose change the researcher wishes to explain" (Patel, 2009, p. 2).

¹¹ "Variables that help explain the change in the dependent variable" (Patel, 2009, p. 2).

been analysed and adapted to allow for best participants' comprehension. In addition, we also made sure of all the aspects included in this survey were included in the teaching and learning process in a foreign language classroom.

One researcher gave the questionnaires to all the participants in the secondary school and level by level. In all the cases, the surveys were completed by the participants in the time they needed. In addition, all of them were filled in during the English lesson. The researcher gave the same instructions to all the students answering at the same time all the possible students' doubts while they completed it. The items were explained one by one, talking about what they meant.

We intended to motivate all the participants, making them aware of the reasons for which this research was being done. Additionally, all the participants expressly and consciously gave permission for their participation in the investigation.

5.3.2. Definition of variables

The following figure shows the variables used to carry out the study. All of them relate to the aims of this paper, as previously mentioned in section 3. In the questionnaire there are independent variables such as the school year, school level, gender and age in order to describe the students. Dependent variables are also included in the questionnaire: items 1 to 14 are quantitative questions. These variables have been analysed according to a Likert scale¹², following these criteria: 1: totally disagree; 2: disagree; 3: agree; 4: totally disagree.

In the following definition of all the variables, independent and dependent ones have been analyzed in different groups:

Independent variables:

- *School year*

Quantitative variable. The following values have been analysed: 1, 2, 3, 4.

¹² A Likert scale "consists of a characteristic statement and respondents are asked to indicate the extent to which they 'agree' or 'disagree with it by marking one of the responses" (Dörnyei, 2011, p. 105).

- *School course*
Quantitative variable. The following values have been analysed: 1, 2.
- *Gender*
Quantitative variable. The following values have been ascribed: 1: boys; 2: girls.
- *Age*
Quantitative variable. The following values have been analysed: 12, 13, 14, 15, 16, 17.

Dependent variables:

In these variables, the first number is related to the aim analysed with that item and the second one to the number with which the item appears in the questionnaire.

In order to study the objective, which is related to whether students are motivated through ICT use in the English classroom, the following variables have been included in the questionnaire:

v.1.1. ICT is used in the English classroom as a fundamental resource to learn the language.

v.1.2. The frequent use of ICT in the English classroom helps the students to develop their reading, writing, listening and speaking skills.

v.1.3. The frequent use of different ICT helps the students to practice what they have learnt.

v.1.4. The frequent use of different ICT to do activities in groups.

v.1.5. The frequent use of ICT in the English classroom has contributed to considerably improve the students' academic achievement in the English subject.

v.1.6. Students' would like to use more and different ICT resources in the English classroom.

v.1.7 Quantitative variable. Students are rarely motivated by the ICT use because they get distracted, so they do not pay attention to the lessons' contents.

v.1.8. Quantitative variable. Students are motivated by the ICT use in the English classroom.

v.1.9. Quantitative variable. Students are motivated by the teacher's behaviour because he is closer to the students.

v.1.10. Quantitative variable. Using ICT in the English lesson rarely motivates students because of the technological problems involved and the ICT resources usually do not work properly.

v.1.11. Quantitative variable. ICT resources used in the English classroom motivate the students because they usually work properly, without causing problems.

v.1.12. Quantitative variable. Students are motivated by the ICT use because they can learn about other subjects while they learn English.

v.1.13. Quantitative variable. ICT encourages students' motivation, so they have more initiative to continue learning.

v.1.14. Quantitative variable. Students are motivated by the ICT use because ICT gives them the opportunity to learn from their mistakes at the moment they make them.

5.3.3. Data treatment

The statistical analysis was descriptive – we focused on the sample results description and exploration (Dörnyei, 2011) – due to the fact that we did not know what the results would be. A study was conducted from all the variables included here. In this study, the median¹³ appears as well as lineal diagrams and percentages. It is important to clarify that items 7 and 10 in the questionnaire were related to students' lack of motivation. But, all the other items were written related to students' motivation. In order to analyse all data in the same way, items 7 and 10 were reversed. Item 7 will be considered as “me motiva mucho usar las TIC en clase de inglés porque no me distraigo y presto atención a los contenidos” instead of “me motiva poco usar

¹³ “Middle point in a set of scores that have been arranged in a rank order” (Dörnyei, 2011, p. 214).

las TIC en clase de inglés porque me distraigo y no presto atención a los contenidos”, as it appeared in the questionnaire. In the same way, item 10, which appeared in the survey as “me motiva poco usar las TIC en clase de inglés porque normalmente dan problemas y no funcionan”, would be analysed as “me motiva mucho usar las TIC en clase de inglés porque normalmente no dan problemas y funcionan”. In these two items, the numbering given by the students was modified as follows: 1 would be 4, 2 would be 3, 3 would be 2 and 4 would be 1. It also should be taken into account that 2 participants did not answer items 8 and 13. This is the reason why we only analysed 92 participants instead of 93 in these items. All data were analysed using IBM SPSS statistical software.

6. DATA ANALYSIS AND RESULTS

In this part of the research, data analysis will be made. After analysing them, their results will be shown and explained at the end of this section.

In order to analyse all data collected and related to the research aim – which is to secondary students’ motivation to learn English through ICT use – the most important tables and figures are included here. However, those which are not essential for analysis are included in the appendices.

First of all, we have started making a descriptive statistical analysis, which can be found in the appendix 2 (table 1). In this analysis, items from 1 to 14 and the total were included in order to analyse the median. Data were analysed in a descending order. In the table “N” is understood as the total number of participants who answered that item, “Mínimo” and “Máximo” is the minimum and maximum score that students could select for the item. Finally, the medium is placed in the last column.

Taing all these data obtained into consideration, it is possible to correlate age, gender and school level with the total, as we can see below (table 2):

Table 2*Age, gender and school level correlations with the total*

		EDAD	GÉNERO	CURSO	TOTAL
EDAD	Correlación de Pearson	1	,072	,859**	-,299**
	Sig. (bilateral)		,493	,000	,004
	N	93	93	93	91
GÉNERO	Correlación de Pearson	,072	1	,060	-,047
	Sig. (bilateral)	,493		,565	,657
	N	93	93	93	91
CURSO	Correlación de Pearson	,859**	,060	1	-,231*
	Sig. (bilateral)	,000	,565		,028
	N	93	93	93	91
TOTAL	Correlación de Pearson	-	-,047	-,231*	1
	Sig. (bilateral)	,299**	,004	,657	,028
	N	91	91	91	91

** . La correlación es significativa en el nivel 0,01 (2 colas).

* . La correlación es significativa en el nivel 0,05 (2 colas).

The results of the analysis seem to be quite clear: age correlates with the school level to a large extent. This fact means that both variables are not independent. Age correlates with the school level because the older students, the older the students, the higher the school level. In addition, age correlated with the total, which means that the older students are, the less motivated they are. Gender is a priori not related to the school year.

Once gender, school year and age data were correlated with the total, we correlated each item by item with the total. In this analysis it must be taken into account that items 7 and 10 should be analysed, as it was said before, in a positive way. Only the more relevant items (7, 8, 9, and 12) are shown below (table 3):

Table 3*Item by item correlation with the total*

	EDAD	GÉNERO	CURSO
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7. Me motiva poco usar las TIC en clase de inglés porque me distraigo y no presto atención a los contenidos	Correlación de Pearson	-	-,017	-,229*
	Sig. (bilateral)	,295**	,004	,870
	N	93	93	93
8. Me motiva el uso de las TIC en clase de inglés	Correlación de Pearson	-	-,003	-,234*
	Sig. (bilateral)	,306**	,003	,980
	N	92	92	92
9. Me motiva que el profesor de inglés use las TIC porque es más cercano a los alumnos y tiene más contacto con nosotros	Correlación de Pearson	-	,128	-,170
	Sig. (bilateral)	,278**	,007	,222
	N	93	93	93
12. En clase de inglés, me motiva poder aprender sobre otras materias a la vez que aprendo inglés cuando usamos las TIC	Correlación de Pearson	-,218*	-,207*	-,235*
	Sig. (bilateral)	,036	,046	,024
	N	93	93	93

** . La correlación es significativa en el nivel 0,01 (2 colas)

* . La correlación es significativa en el nivel 0,05 (2 colas)

The rest of the items, which are not essential for this research due to their marginal relevance are placed in appendix 3 (table 4).

The results of this analysis reveal that school level and age are the main cause of students' motivation. As regards gender, in item 12 it is observed that girls are motivated to learn English in the English subject, but not about any other participants, as happens in boys. They seem to be motivated to learn about other topics in the English subject. This fact means that gender is not the cause of motivation, but it is relevant in several items. In relation to the school level, students are less motivated by the ICT use as they are in the 3rd and 4th school level (items 7, 8, 12). Finally, it might be demonstrated that age is related to motivation in students. Items 7, 9 and 12 clarify that when students are younger, they are more motivated.

So far, data have been analysed by the school year, but not by the school cycle. Making a comparison between data analysed by school level (figure 1) and by cycle (figure 2) it may be possible to distinguish that secondary students in the first two levels are much more significantly motivated. However, students in the second school cycle are less motivated. Taking this into account, data will be analysed by school cycle and not school level from now on, because data analysed by school levels were not as significant as by school cycle:

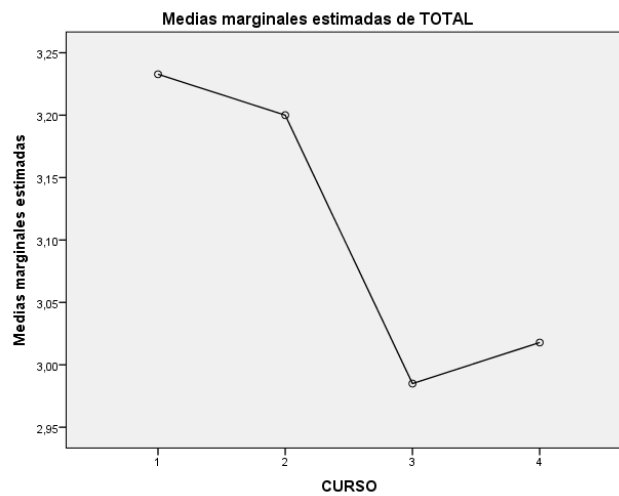


Figure 1. Data analysed by school level

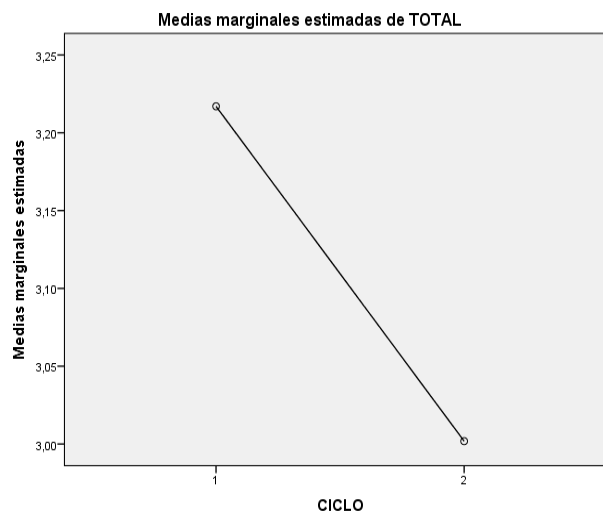


Figure 2. Data analysed by cycle

According to the gender-school cycle, there is not a general effect but a partial one, as it may be observed in figure 3 when the total is analysed by gender (from now on, when we talk about gender, we will use “1” to relate to boys and “2” to relate to girls):

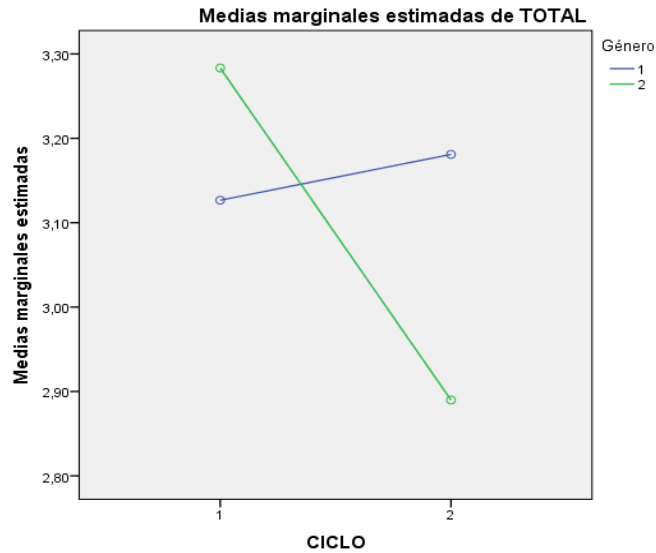


Figure 3. Gender-school cycle total data analysis

In general, analysing item by item with the gender, a clear distinction may be made between boys and girls and their school cycle. First of all, in the first cycle girls seems to be more motivated than boys in all the aspects. There are only four items in which boys appears to be more motivated than girls during the first two years of secondary school:

- Item 2. Boys seem to be more motivated than girls due to ICT use, which helps them to develop their writing, speaking, reading and listening skills:

Medias marginales estimadas de 2. El uso de las TIC en clase de inglés me ayuda a desarrollar mis habilidades de reading, writing, speaking y listening

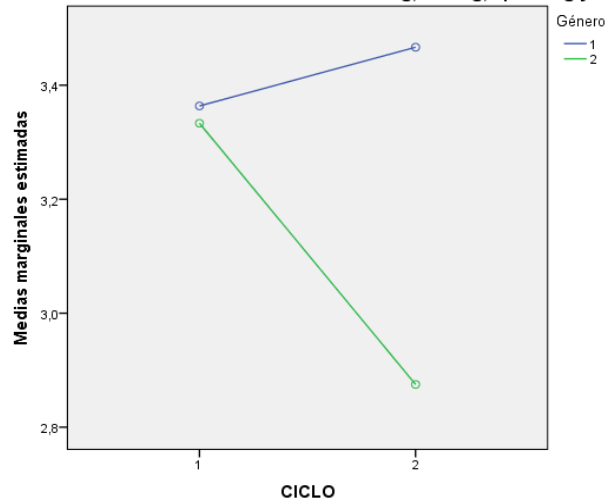


Figure 4. Male and female students' motivation using ICT to develop their skills

- Item 12. Boys seem to be more motivated than girls due to the fact that using ICT they are able to learn about different topics apart from English:

Medias marginales estimadas de 12. En clase de inglés, me motiva poder aprender sobre otras materias a la vez que aprendo inglés cuando usamos las TIC

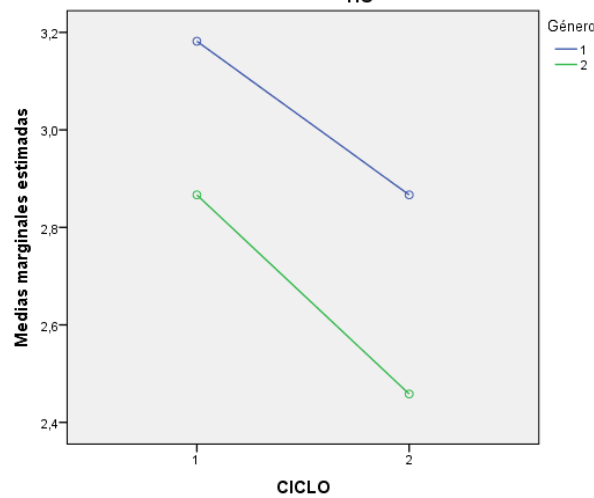


Figure 5. Male and female students' motivation using ICT to learn about different topics

- Item 13. Boys seem to be more motivated than girls because using ICT they have more initiative:

Medias marginales estimadas de 13. Las TIC fomentan mi motivación y hacen que tenga una mayor iniciativa para seguir aprendiendo

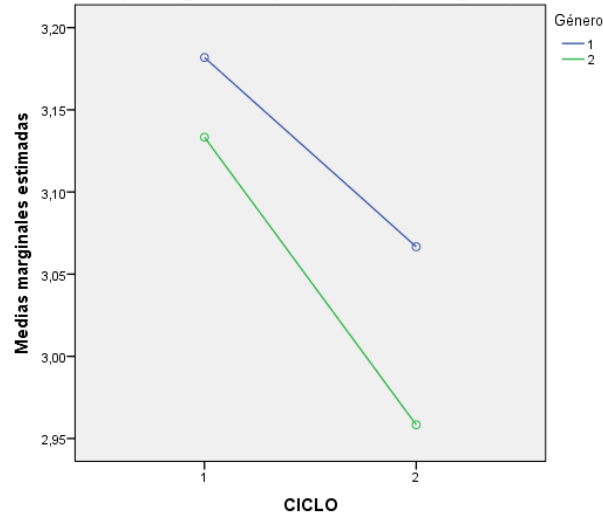


Figure 6. Male and female students' initiative using ICT

- Item 14. Boys seems to be more motivated by ICT because its use gives them the opportunity of learning from their own mistakes at the moment they make them:

Medias marginales estimadas de 14. Me motiva usar las TIC en la clase de inglés porque me permiten aprender de mis errores justo en el momento en el que los cometo

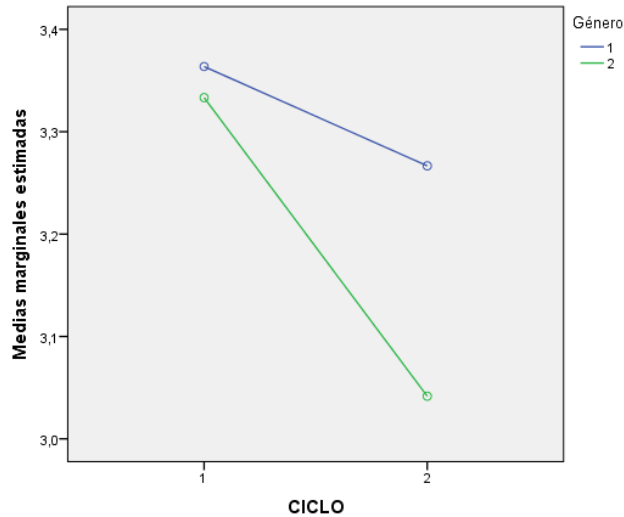


Figure 7. Male and female students' motivation using ICT to get instantly feedback

In all other items, which are included in appendix 4, girls seem to be less motivated than boys by ICT use.

According to the second school cycle, girls also seem to be less motivated than boys. In relation to the results, they are only two items in which female students seem to be more motivated than boys:

- Item 1. Girls are more motivated than boys because they consider ICT use as a fundamental resource in the English lessons:

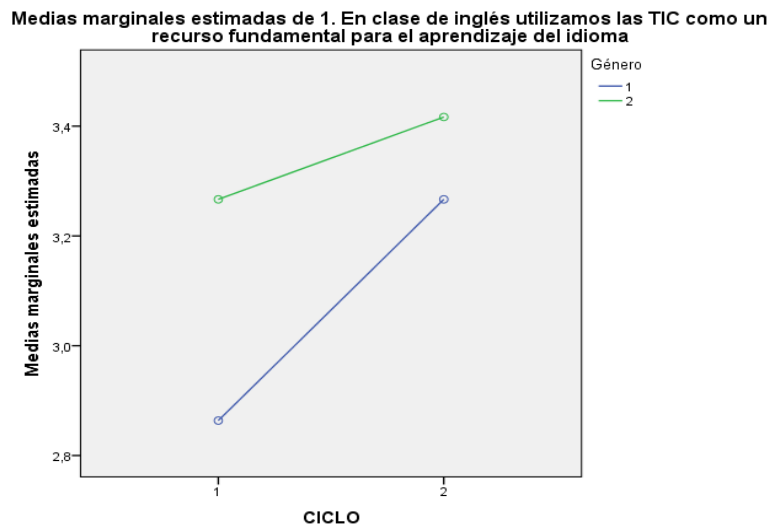


Figure 8. Male and female students' ICT consideration as a fundamental resource in the English lessons

- Item 9. Girls seem to be more motivated than boys by the teacher's ICT use, which is related to the teacher's closeness to the students:

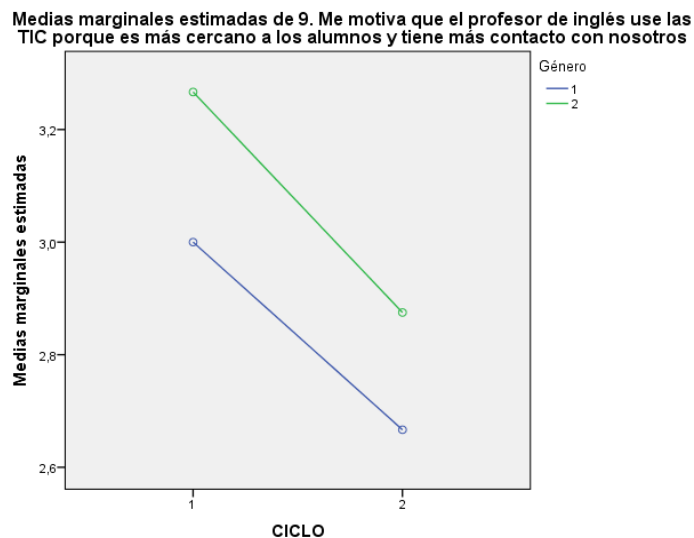


Figure 9. Male and female students' motivation by teacher's closeness to them during the lessons

In all other items, which are included and analysed in appendix 2, boys seem to be more motivated than girls by ICT use.

Nevertheless, there is an exception. It is important to analyse the fact that, during the first school cycle and in accordance with how students make use of ICT in order to practice what they learnt –item 3–, girls seems to be really motivated while boys are less motivated than them. However, on considering the second school cycle, it is clear that both, male and female motivation in this aspect is almost nonexistent (figure 10):

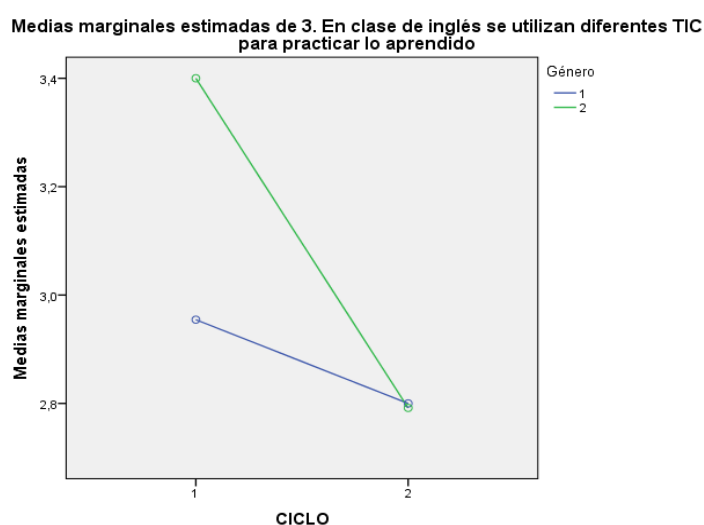


Figure 10. Male and female students' motivation using ICT to practice what they learnt.

Taking all the analyses into account and as a continuation of this research, we include the general data results paying attention to our initial hypothesis and the aim. Motivation by ICT use in secondary education students depends mainly on the gender and on the age (which implies the school level and cycle). Girls are – in general – more motivated than boys during the first two years of High School. However, this fact changes as the students' age progress. During the second half of high school, boys are much more motivated while girls are much less motivated by the ICT use.

7. CONCLUSIONES E IMPLICACIONES PEDAGÓGICAS

En este estudio, en base a los resultados obtenidos y teniendo en cuenta nuestra hipótesis inicial – el uso de las TIC en Educación Secundaria motiva a los estudiantes para aprender inglés – concluimos que ésta es por una parte aceptada, pero por otra es refutada.

En primer lugar, nuestra hipótesis es aceptada porque nuestros resultados revelan que ambos (chicos y chicas) están motivados por el uso de las TIC.

En segundo lugar, podemos afirmar que nuestra hipótesis es refutada ya que no todos los chicos y chicas estudiantes de ESO están motivados a la misma vez. La motivación de los estudiantes de Secundaria parece depender de su género, curso escolar y edad (Bugler, McGeown & St Clair-Thompson, 2015). Las chicas parecen estar más motivadas durante el primer ciclo (1^{er} y 2^o curso de Secundaria), mientras que los chicos parecen estar más motivados durante el segundo (3er y 4^o curso de ESO). Además, es importante aclarar el hecho de que tanto chicos y chicas están motivados de diferente manera al aprender sobre diferentes materias mientras hacen uso de las TIC. En este sentido, son varios los artículos que apoyan los resultados de nuestros estudios, considerando que hay una relación directa entre el género de los estudiantes, el curso que estudian, su edad y su motivación. (Soria & Torrano, 2016; Delgado, Inglés, García-Fernández, Castejón & Valle, 2010; Cerezo Rusillo & Casanova Arias, 2004).

Por otra parte, en relación con nuestro objetivo – analizar si los estudiantes de ESO están motivados por el uso de las TIC en el aula de inglés según su género – y de acuerdo con nuestros resultados, hay varios aspectos – la consideración de las TIC como un recurso fundamental en la clase de inglés, o la cercanía del profesor a los estudiantes durante las horas de clase – que afectan de diferente manera a los discentes según el sexo y el año que cursan.

Una vez analizados los datos, llegamos a una serie de conclusiones, que se mencionan a continuación y serán desarrolladas posteriormente:

1. Durante el primer ciclo de Secundaria (1er y 2º curso), las chicas están más motivadas por el uso de las TIC que los chicos. Sin embargo, durante el segundo ciclo (3º y 4º ESO), son los chicos los que están más motivados por el uso de las TIC que las chicas.

2. Los chicos se motivan más que las chicas cuando reciben *feedback* instantáneo al usar las TIC.

3. Los chicos tienen más iniciativa que las chicas para aprender mediante el uso de las TIC.

4. La diversidad – entendida como inteligencias múltiples (Gardner, 1985) – está relacionada con diversos aspectos que motivan tanto a chicos como a chicas para aprender.

En relación con la primera conclusión, los chicos consideran que el uso de las TIC les ayuda a mejorar su comprensión escrita, hablada, auditiva y lectora. Sin embargo, las chicas no están tan motivadas en este aspecto. Además, ellos prefieren usar las TIC como manera de mejorar su nivel de inglés aprendiendo al mismo tiempo sobre otras asignaturas o diversos temas. Esto significa, por ejemplo, que a ellos puede gustarle usar los recursos digitales para leer un texto o escuchar un audio sobre biología en inglés. Debido a esta actividad, serían capaces de aprender sobre ese tema mientras aprenden nuevo vocabulario en inglés sobre biología. Las chicas, sin embargo, consideran que no les motiva usar las TIC para aprender sobre otros temas mientras mejoran su nivel de inglés.

De acuerdo con la segunda conclusión, hay ciertos aspectos que dan al alumnado la oportunidad de mejorar su conocimiento. Uno de ellos es dar a los estudiantes *feedback* en el momento que cometen un error, recibéndolo de forma inmediata. Teniendo en cuenta los resultados, concluimos que los chicos están más motivados que las chicas cuando se habla de aprender de sus propios errores en el momento en el que los cometen (Ni, 2013).

En relación a la tercera conclusión, se debe tener en cuenta la motivación por el uso de las TIC en relación con la iniciativa de los estudiantes para aprender. Después de nuestro análisis, concluimos que los chicos están más motivados que las chicas durante

ambos ciclos de Secundaria, aunque hay una mayor diferencia cuando estudian el segundo ciclo.

La cuarta conclusión a tener en cuenta es la diversidad – entendida en este caso como diferentes tipos de inteligencia – de los estudiantes en el aula (Pritchard, 2014). Es posible afirmar que ni chicos ni chicas están interesados ni motivados por el mismo tipo de actividades ni tienen los mismos temas de interés. Debido a esta diferencia, concluimos que los profesores deben pensar en el hecho de que todos los estudiantes no aprenden de la misma manera.

Durante todo este estudio nos hemos referido a diferentes aspectos que podrían afectar al proceso de enseñanza aprendizaje. La motivación del alumnado por el uso de las TIC debe ser tenido en cuenta por los profesores cuando diseñan las actividades que usarán en clase. La diversidad en el aula de inglés podría ser entendida en relación a diferentes religiones o razas. Sin embargo, la diversidad de estudiantes de la que hablamos ahora es referida a género y su forma de pensar y aprender. Todos estos factores deberían hacer forzar a los profesores a adaptar las lecciones a sus estudiantes (Mujis & Reynolds, 2018).

Teniendo en cuenta los resultados de nuestro estudio así como las conclusiones, los docentes tienen que comprender las necesidades de sus estudiantes, diseñando procesos de enseñanza individuales para facilitar todo en la medida de lo posible el proceso de aprendizaje a los discentes (Tomlinson, 2014).

Algunas de las implicaciones pedagógicas que el profesorado debe tener en cuenta durante sus clases son enumeradas y desarrolladas a continuación:

1. Habilidades básicas desarrolladas por la motivación de los estudiantes mediante el uso de las TIC.
2. Clases dinámicas y motivacionales diseñadas por profesores.
3. Motivación bidireccional en las clases.
4. Chicos y chicas trabajando de forma conjunta en el aula.
5. Diversidad – entendida como inteligencias múltiples – en el aula y clases centradas en los estudiantes

Como se ha dicho anteriormente, los chicos y las chicas no desarrollan los mismos procesos de aprendizaje. Teniendo esto en cuenta, es importante aclarar algunas cosas – el uso de las TIC en el aula de inglés, la motivación de los estudiantes y la diversidad en las clases – que influyen en la educación de los estudiantes y su proceso de aprendizaje.

Con respecto a la primera implicación pedagógica, la Tecnología de la Información y la Comunicación esta en todos sitios, lo que incluye al sector educativo. “ICT integration in education generally means technology-based teaching and learning process that closely related to the utilization of learning technologies in schools” (Ghavifekr & Rosdy, 2015, p. 175). El desarrollo tecnológico en los colegios da a los alumnos la posibilidad de mejorar en clase sus habilidades básicas. Además, los estudiantes que normalmente usan las TIC durante su proceso de aprendizaje, son capaces de desarrollar de forma inconsciente competencias como el pensamiento crítico, la toma de decisiones, el trabajo cooperativo y la comunicación de forma efectiva con otros. Este hecho es posible debido a diferentes actividades – como los videojuegos – que podrían ser utilizados en durante la lección de inglés. Asimismo, varios son los estudios que revelan que los estudiantes que normalmente usan las TIC demuestran más capacidad de aprendizaje que los que no los usan (Mikre, 2011).

De acuerdo con recientes estudios, los docentes consideran que incluir el uso de las TIC en sus clases así como los recursos y materiales de enseñanza encontrados online (Ghavifekr & Rosdy, 2015), les dan la posibilidad de actualizar sus propios materiales, diseñando nuevas, interesantes y dinámicas clases para motivar al alumnado. Al mismo tiempo, el uso de las TIC ofrece la posibilidad de enseñar centrándose en cada alumno. Este hecho aumentará la motivación de los estudiantes, ya que las clases estarían diseñadas específicamente para cada forma de aprendizaje, prestando atención a las necesidades de cada alumno.

En relación a la segunda implicación pedagógica, varios son los estudios (Bernaus, Wilson & Gardner, 2009) en los que la motivación juega un importante papel tanto en el rol del profesor y del alumnado como en el proceso de enseñanza y aprendizaje. El aprendizaje no tiene lugar sin motivación (Rehman & Hader, 2013). La motivación del

alumnado debe ser desarrollada con actividades dinámicas, interesantes y divertidas que sean hechas durante las clases por el profesor (Bernaus, Wilson & Gardner, 2009).

La tercera implicación pedagógica está relacionada con la motivación en los colegios, que debe ser algo bidireccional entre docentes y alumnado. Si los profesores motivan a los estudiantes y estos participan de forma activa en las clases, disfrutando lo que ha sido diseñado para ellos, es probable que los profesores se sientan también motivados (Cornelius-White, 2007).

Con respecto a la cuarta implicación pedagógica, los chicos y chicas no están siempre motivados por el mismo tipo de actividades o temas. De acuerdo con Cerezo Rusillo y Casanova Arias (2004), el género es una de las variables personales que más afectan al proceso de aprendizaje.

Después de leer sobre las ventajas y desventajas de que los chicos y chicas trabajen de forma conjunta así como habiendo analizado nuestros datos, podemos concluir que estando en la misma aula y trabajando juntos, ambos aprenden cómo vivir en una sociedad donde seguramente tendrán que trabajar juntos. Sin embargo, y de acuerdo con nuestros resultados, no están motivados por el mismo tipo de actividades, por lo que no pueden ser enseñados de la misma manera. Es posible que la principal razón por la que los chicos prefieren aprender con el uso de las TIC es que, normalmente, ellos las usan más que las chicas (Tømte, 2008). Es importante diseñar clases centradas en los alumnos para poder resolver el hueco dejado en la motivación por el género de los discentes. Cada estudiante tiene sus propias necesidades educativas y los profesores son quienes deben enseñarles de esta manera.

En relación a la quinta implicación pedagógica, la diversidad – referida, como ya se ha mencionado anteriormente, al género y las inteligencias múltiples – en el aula. Todos los estudiantes son diferentes unos de otros, por lo que la diversidad en el aula de lenguas extranjeras debe tenerse en cuenta. Cada profesor podría tener que tratar con diferentes tipos de aprendizaje o niveles de motivación. Si se diera esta situación, los docentes son los responsables de usar diferentes métodos de enseñanza para enseñar a los estudiantes de la mejor forma posible.

Teniendo en cuenta la posibilidad de encontrarse con esta situación, Gardner (1985) desarrolló la teoría de las Inteligencias Múltiples, la cual explica que cada persona tiene una manera diferente de aprender, dependiendo de sus habilidades, capacidad cognitiva o inteligencia. Esta es la razón por la que este autor distinguió entre ocho tipos de inteligencia: intrapersonal, interpersonal, lógico-matemática, lingüística, musical, espacial, kinestésica y naturalista (González Martín, 2009).

Los docentes deberían adaptar el currículum a las inteligencias del alumnado. Las TIC facilitan el trabajo de los profesores debido a todas las fuentes que podrían usar para crear materiales nuevos. Sin embargo, es cierto que adaptar el proceso de aprendizaje a cada alumno requiere que el profesor invierta mucho tiempo para encontrar el recurso adecuado al proceso de aprendizaje que cada alumno tiene.

Como se ha comentado anteriormente, las inteligencias múltiples deberían ser tenidas en cuenta por los profesores. No obstante, no es lo único a lo que se le debe prestar atención, ya que también se debe tener presente la inteligencia emocional (Toro, 2017; Ibarrola & Etxebarria, 2017).

Como Toro (2017) afirma, hoy en día los colegios normalmente no prestan atención a los demás tipos de inteligencia, a esas que no están relacionadas con lo puramente educativo, como por ejemplo la inteligencia emocional. La emoción es un elemento esencial en la enseñanza, pudiendo diferenciar entre las emociones que ayudan al aprendizaje y las que lo dificultan. Sin emociones no hay ni memoria ni aprendizaje (Ibarrola & Etxebarria, 2017). Todas estas son las razones por las que las emociones e inteligencias de los alumnos deben ser atendidas por los profesores durante el proceso de enseñanza y aprendizaje.

Para resumir, todas las implicaciones pedagógicas mencionadas anteriormente permiten a los profesores enseñar centrándose en las necesidades de cada alumno. Además, esto también permitiría a los discentes aprender de una forma específica, de acuerdo a su conocimiento previo y sus necesidades.

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9. APPENDICES

APPENDIX 1

CUESTIONARIO DE OPINIÓN DEL ALUMNADO DE ESO SOBRE SU MOTIVACIÓN POR EL USO DE LAS TIC Y LA FRECUENCIA Y EL USO DE ESTAS EN LA ASIGNATURA DE INGLÉS. COLEGIO LA SALLE-CHOCILLAS (ALMERÍA)

INSTRUCCIONES: lee atentamente las siguientes preguntas y respóndelas conforme a la siguiente escala:

1 = totalmente en desacuerdo;

2 = en desacuerdo;

3 = de acuerdo;

4 = totalmente de acuerdo.

Este cuestionario es **totalmente anónimo**, por favor, responde con sinceridad.

Curso:

Género:

Edad:

	1	2	3	4
1. En clase de inglés utilizamos las TIC como un recurso fundamental para el aprendizaje del idioma				
2. El uso de las TIC en clase de inglés me ayuda a desarrollar mis habilidades de reading, writing, speaking y listening				
3. En clase de inglés se utilizan diferentes TIC para practicar lo aprendido				
4. En clase de inglés se utilizan las TIC para realizar actividades en grupo con otros compañeros/as de clase				
5. El uso de las TIC en la asignatura de inglés ha contribuido a mejorar considerablemente mi rendimiento académico en la asignatura de inglés				
6. Me gustaría usar más y diferentes recursos TIC en clase de inglés				
7. Me motiva poco usar las TIC en clase de inglés porque me distraigo y no presto atención a los contenidos				
8. Me motiva el uso de las TIC en clase de inglés				
9. Me motiva que el profesor de inglés use las TIC porque es más cercano a los alumnos y tiene más contacto con nosotros				
10. Me motiva poco usar las TIC en clase de inglés porque normalmente dan problemas y no funcionan				
11. Me motivan los recursos TIC usados normalmente en el aula de inglés				
12. En clase de inglés, me motiva poder aprender sobre otras materias a la vez que aprendo inglés cuando usamos las TIC				
13. Las TIC fomentan mi motivación y hacen que tenga una mayor iniciativa para seguir aprendiendo				
14. Me motiva usar las TIC en la clase de inglés porque me permiten aprender de mis errores justo en el momento en el que los cometo				

¡GRACIAS POR TU COLABORACIÓN! 😊

APPENDIX 2

Table 1

Descriptive statistic analysis

	N	MÍNIMO	MÁXIMO	MEDIA
7. Me motiva poco usar las TIC en clase de inglés porque me distraigo y no presto atención a los contenidos	93	1	4	3,43
6. Me gustaría usar más y diferentes recursos TIC en clase de inglés	93	1	4	3,39
8. Me motiva el uso de las TIC en clase de inglés	92	1	4	3,26
14. Me motiva usar las TIC en la clase de inglés porque me permiten aprender de mis errores justo en el momento en el que los cometo	93	1	4	3,26
2. El uso de las TIC en clase de inglés me ayuda a desarrollar mis habilidades de reading, writing, speaking y listening	93	1	4	3,26
1. En clase de inglés utilizamos las TIC como un recurso fundamental para el aprendizaje del idioma	93	1	4	3,20
4. En clase de inglés se utilizan las TIC para realizar actividades en grupo con otros compañeros/as de clase	93	1	4	3,16
11. Me motivan los recursos TIC usados normalmente en el aula de inglés	93	1	4	3,14
TOTAL	91	1,86	3,93	3,1248

10. Me motiva poco usar las TIC en clase de inglés porque normalmente dan problemas y no funcionan	93	1	4	3,10
13. Las TIC fomentan mi motivación y hacen que tenga una mayor iniciativa para seguir aprendiendo	92	1	4	3,09
3. En clase de inglés se utilizan diferentes TIC para practicar lo aprendido	93	1	4	3,02
9. Me motiva que el profesor de inglés use las TIC porque es más cercano a los alumnos y tiene más contacto con nosotros	93	1	4	3,00
12. En clase de inglés, me motiva poder aprender sobre otras materias a la vez que aprendo inglés cuando usamos las TIC	93	1	4	2,84
5. El uso de las TIC en la asignatura de inglés ha contribuido a mejorar considerablemente mi rendimiento académico en la asignatura de inglés	93	1	4	2,67
N válido (por lista)	91			

APPENDIX 3

Table 4

Item by item correlation with the total

		EDAD	GÉNERO	CURSO
EDAD	Correlación de Pearson	1	,072	,859**
	Sig. (bilateral)		,493	,000
	N	93	93	93
GÉNERO	Correlación de Pearson	,072	1	,060
	Sig. (bilateral)	,493		,565
	N	93	93	93
CURSO	Correlación de Pearson	,859**	,060	1
	Sig. (bilateral)	,000	,565	
	N	93	93	93
1. En clase de inglés utilizamos las TIC como un recurso fundamental para el aprendizaje del idioma	Correlación de Pearson	,096	,217*	,149
	Sig. (bilateral)	,359	,036	,155
	N	93	93	93
2. El uso de las TIC en clase de inglés me ayuda a desarrollar mis habilidades de reading, writing, speaking y listening	Correlación de Pearson	-,177	-,169	-,136
	Sig. (bilateral)	,090	,105	,194
	N	93	93	93
3. En clase de inglés se utilizan diferentes TIC para practicar lo aprendido	Correlación de Pearson	-,162	,129	-,174
	Sig. (bilateral)	,122	,217	,095
	N	93	93	93
4. En clase de inglés se utilizan las TIC para realizar actividades en grupo con otros compañeros/as de clase	Correlación de Pearson	-,033	-,049	-,037
	Sig. (bilateral)	,757	,640	,727
	N	93	93	93
5. El uso de las TIC en la asignatura de inglés ha contribuido a mejorar considerablemente mi rendimiento académico en la asignatura de inglés	Correlación de Pearson	-,040	-,017	-,026
	Sig. (bilateral)	,704	,872	,803
	N	93	93	93
6. Me gustaría usar más y diferentes recursos TIC en clase de inglés	Correlación de Pearson	-,177	-,008	-,165
	Sig. (bilateral)	,090	,943	,114
	N	93	93	93
10. Me motiva poco usar las TIC en clase de inglés porque normalmente dan problemas y no funcionan	Correlación de Pearson	-,149	-,125	-,084
	Sig. (bilateral)	,154	,231	,421
	N	93	93	93

11. Me motivan los recursos TIC usados normalmente en el aula de inglés	Correlación de Pearson	-,058	-,040	-,078
	Sig. (bilateral)	,580	,703	,456
	N	93	93	93
13. Las TIC fomentan mi motivación y hacen que tenga una mayor iniciativa para seguir aprendiendo	Correlación de Pearson	-,061	-,054	-,050
	Sig. (bilateral)	,563	,609	,634
	N	92	92	92
14. Me motiva usar las TIC en la clase de inglés porque me permiten aprender de mis errores justo en el momento en el que los cometo	Correlación de Pearson	-,142	-,067	-,165
	Sig. (bilateral)	,174	,524	,113
	N	93	93	93

** . La correlación es significativa en el nivel 0,01 (2 colas)

* . La correlación es significativa en el nivel 0,05 (2 colas)

APPENDIX 4

Medias marginales estimadas de 4. En clase de inglés se utilizan las TIC para realizar actividades en grupo con otros compañeros/as de clase

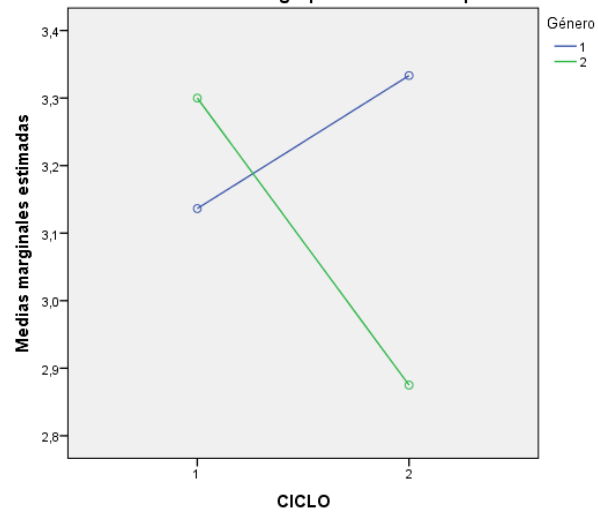


Figure 11. Male and female students' motivation using ICT with their peers during the lesson

Medias marginales estimadas de 5. El uso de las TIC en la asignatura de inglés ha contribuido a mejorar considerablemente mi rendimiento académico en la asignatura de inglés

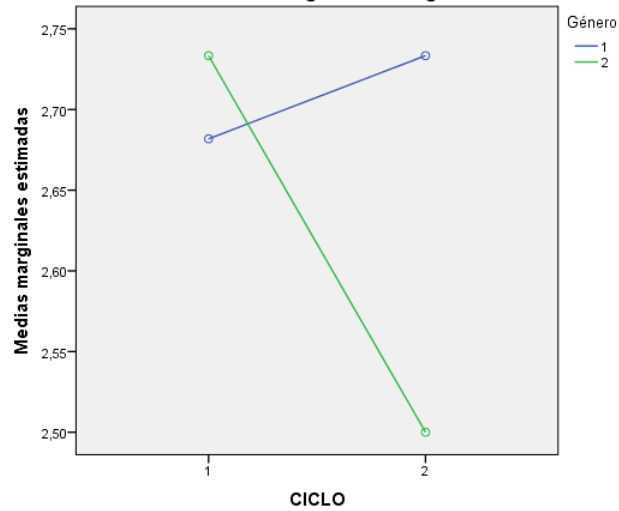


Figure 12. Male and female learning achievement through ICT use

Medias marginales estimadas de 6. Me gustaria usar más y diferentes recursos TIC en clase de inglés

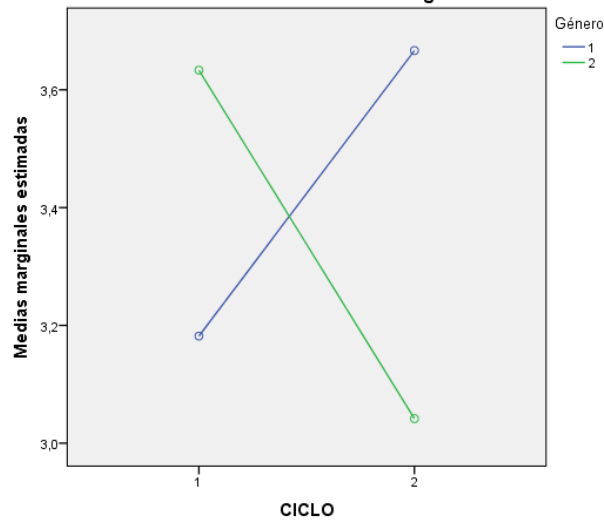


Figure 13. Male and female wish to use more and different ICT resources

Medias marginales estimadas de 7. Me motiva poco usar las TIC en clase de inglés porque me distraigo y no presto atención a los contenidos

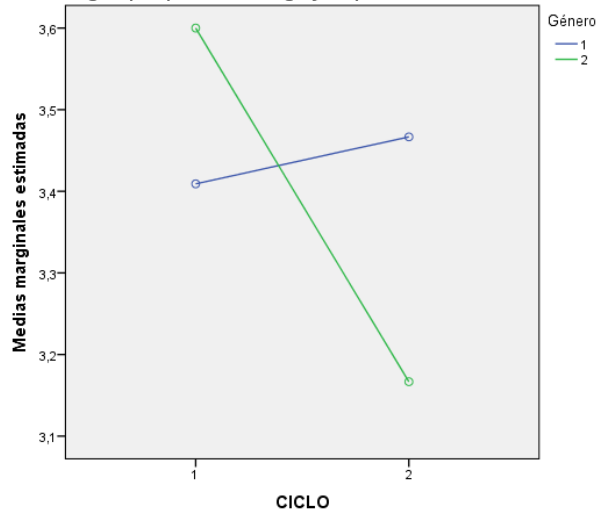


Figure 14. Male and female students' motivation because they pay low attention during the lessons

Medias marginales estimadas de 8. Me motiva el uso de las TIC en clase de inglés

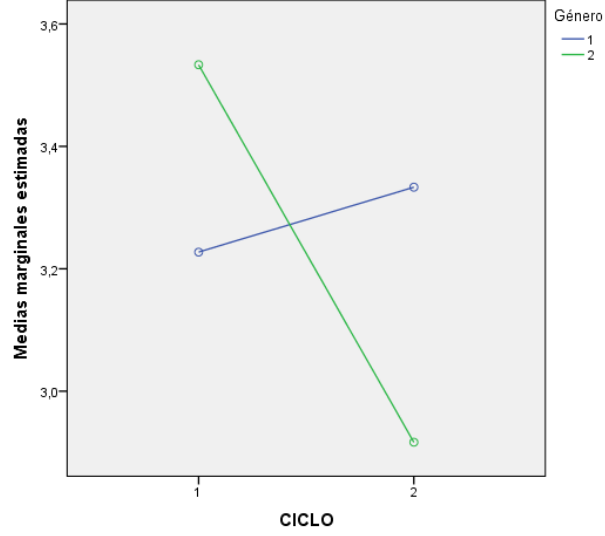


Figure 15. Male and female students' motivation through ICT use in the English lesson

Medias marginales estimadas de 10. Me motiva poco usar las TIC en clase de inglés porque normalmente dan problemas y no funcionan

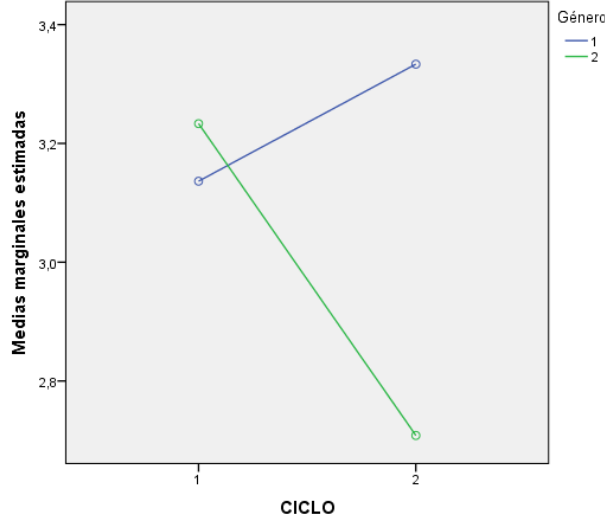


Figure 16. Male and female students' motivation through ICT and their technical problems

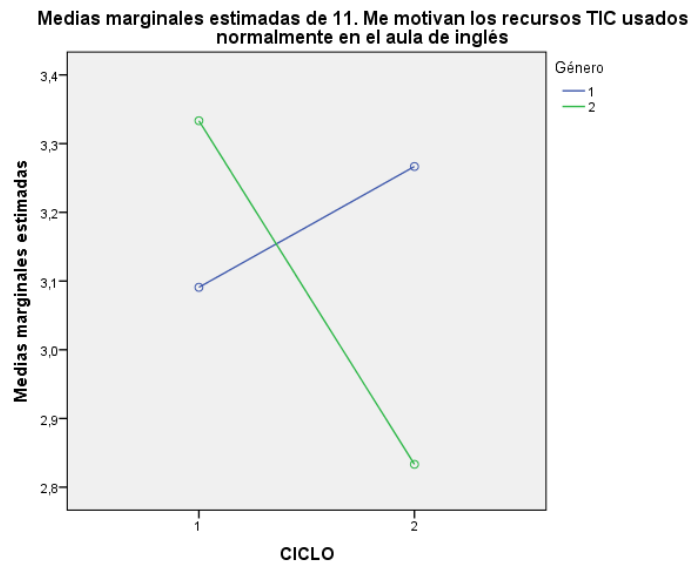


Figure 17. Male and female students' motivation though usually ICT use in the English classroom