Secondary Education Teachers and the integration of ICT in the classroom[1]

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Summary

The integration of Information and Communication Technologies (ICT) at Secondary Education Centers responds to the demands of society and the need to train digitally literate citizens. However, reality tells us that, on occasions, it is mediated by aspects that generate limitations derived from teachers themselves, who recognize that the main reason for not using digital media in the classroom is the dedication involved in integrating them and the training required to do so. In this qualitative research, in-depth interviews were carried out with ten teachers who use ICT ("ProICT") and teachers who do not use them ("NICT"), so that they could argue their reasons for not doing so. From the results obtained we detected that those who are more in favor of using technologies in the classroom point more to intrinsic reasons, such as attitude, dedication, and training, while those who use them less justify their decision not to use them to external factors such as lack of resources, technical problems, lack of time for training, class preparation or even the reference group of students. Teachers emphasize that training in digital competence, to introduce technology in the classroom, is essential, means opting for a global training that involves integrating ICT in the teacher himself, in order to bring them later to the classroom.

Keywords: secondary education; ICT; integration; teachers; training.

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El profesorado de educación secundaria y la integración de las tecnologías de la información y la comunicación (TIC) en el aula

Resumen

La integración de las tecnologías de la información y comunicación (TIC) en los centros de educación secundaria responde a las demandas de la sociedad y a la necesidad de formar ciudadanos digitalmente alfabetizados. Sin embargo, la realidad nos dice que, en ocasiones, se encuentra mediatizada por aspectos que generan limitaciones derivadas de los propios docentes, quienes reconocen que la razón de la no utilización de los medios digitales en el aula tiene como causa principal la dedicación que supone integrarlas y la formación que se necesita para ello. En esta investigación cualitativa se han realizado entrevistas en profundidad a diez profesores que utilizan las TIC (ProTIC) y a profesores que no las utilizan (NTIC) para que argumenten las razones que le llevan a ello. De los resultados obtenidos detectamos que aquellos que son más partidarios de usar las tecnologías en el aula apuntan más a motivos intrínsecos del propio docente, actitud, dedicación y formación mientras aquellos que las utilizan menos justifican su decisión de no utilizarlas a factores externos como la falta de recursos, los problemas técnicos, el tiempo para formarse, preparación de clases o incluso al grupo de alumnos de referencia. Los profesores destacan que la formación en competencia digital, para introducir la tecnología en las aulas es crucial, lo que supone apostar por una formación global que parta de la integración de las TIC en el propio docente, para llevarlas posteriormente al aula.

Palabras clave: educación secundaria; TIC; integración; profesorado; formación.

Professores do Ensino Secundário e a integração das TIC na sala de aula

Resumo

A integração das Tecnologias de Informação e Comunicação (TIC) nos centros de Ensino Secundário responde às exigências da sociedade e à necessidade de formar cidadãos alfabetizados digitalmente. Porém, a realidade nos diz que, por vezes, é mediada por aspectos que geram limitações derivadas dos próprios professores, que reconhecem que o motivo da não utilização dos meios digitais em sala de aula tem como principal causa a dedicação que isso acarreta. e o treinamento necessário para fazê-lo. Nesta investigação qualitativa, foram realizadas entrevistas em profundidade a dez professores que utilizam as TIC ("ProTIC") e professores que não as utilizam ("NTIC") para que possam explicar as razões que os levam a fazê-lo. Dos resultados obtidos, detectámos que aqueles que são mais a favor da utilização das tecnologias em sala de aula apontam mais para razões intrínsecas do próprio professor, atitude, dedicação e formação, enquanto aqueles que menos as utilizam justificam a sua decisão de não as utilizar para fatores externos como falta de recursos, problemas técnicos, tempo de treinamento, preparação das aulas ou mesmo grupo de alunos de referência. Os professores destacam que a formação em competência digital, para introduzir a tecnologia nas salas de aula, é crucial, o que significa apostar numa formação global que passa pela integração das TIC no próprio professor, para posteriormente trazê-las para a sala de aula.

Palavras-chave: ensino secundário; TIC; integração; professores; formação.

Introduction

The integration of ICT at educational centers is taking place slowly, even though public administrations make a great effort to provide the necessary technological resources and make them available to teachers. This weak integration means that it is not fully adjusted to the real needs of the classroom, and as a result didactic projection is low, in contrast to the technological provision of equipment (Suárez et al., 2020). We understand that the simple incorporation of technologies in the classroom does not imply innovation, as this is based on their implementation (Area et al., 2016). In Spain, only 11,5 % of teachers are encouraged to introduce the use of digital devices in their classes, according to PISA (OECD, 2020). Teachers are not prepared for an effective integration of ICT in the classroom because their digital competence is reduced to an instrumental use of ICT and, as a result, they are not able to develop the necessary skills in students (Blanco et al., 2018; Colomo et al., 2023), nor are they able to develop good digital and media literacy (Bonilla del Río and Aguaded, 2018; Centeno and Acuña, 2023).

In fact, we note that most educational centers continue to follow teaching procedures based on outdated methodologies that do not address current digital reality and needs (García, 2019), and therefore, even if the use of technologies in daily life has increased, in schools the problems of integrating these media persist due to disciplinary, technological, and training components linked to teachers. Therefore, to guarantee integration, in addition to financial investment, we must develop new concepts, practices and competences in teachers and other educational agents (Area et al., 2018). In this sense, we consider that the most decisive factor to integrate digital technologies into the classroom and contribute to real pedagogical progress is undoubtedly teaching staff (Colás et al.,2018; Starkey, 2020).

In general, teachers show a good attitude towards the use of ICT in the classroom, although they also face infrastructural, technical, and organizational problems that hinder their integration (Vega et al., 2021); not forgetting that they are also concerned about the background and didactic approach to ICT use and will make use of ICT according to this approach (Fraga and Alonso, 2019). Similarly, training in digital competences is a fundamental aspect for them to use ICT effectively in teaching processes, in their own professional development, and in that of their students; however, previous attempts and efforts to promote digital teacher training have been more focused on instrumental and technical aspects than on the development of real educational practice in the classroom (Grimalt et al., 2020).

For all these reasons, when addressing the integration of these technologies in schools, concern has been focused on addressing the use of ICT as a key transversal competence and on studying how to incorporate digital skills into the curriculum (Eurydice, 2019; Redecker and Punie, 2017), developing educational policies focused on pedagogical innovation through ICT and promoting integration of digital technology in schools' educational and organizational practices (Area et al., 2020), materialized in the implementation of actions in this regard, such as the Digital Education Action Plan (designed in 2018 and renewed in 2021), which insists in the importance of focusing efforts on digital teacher training and its influence on the use of ICT in the classroom, with a commitment to certificate these digital competences and the importance of reducing the digital divide by modernizing digital and technological education in the classroom (Llorent y De Pablos, 2022).

Teachers' digital competence and their knowledge of ICT depend not only on their training, but also on their own attitudes and beliefs about the use of ICT in the classroom.

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It also depends on the availability of time, equipment, materials, and a bias against traditional teaching methodologies; elements that for many teachers can lead to an attitude of opposition to the incorporation of ICT (European Commission, 2018; Fernández, 2020).

However, we must consider that students in Compulsory Secondary Education already have digital devices and are active users who make a massive use of social networks and require educational actions to address these new digital divides (Estefanía et al., 2020). From results of research carried out on the use and consumption of ICT (Ballesta et al., 2021) on the use of Internet in the classroom, pupils showed low levels of use in the classroom by their teachers, as can be seen in **figure 1**, where 37,6 % of pupils say that their teachers do not use Internet in their classes and 55,6 % say that only some do.

Figure 1.

Internet use by teachers
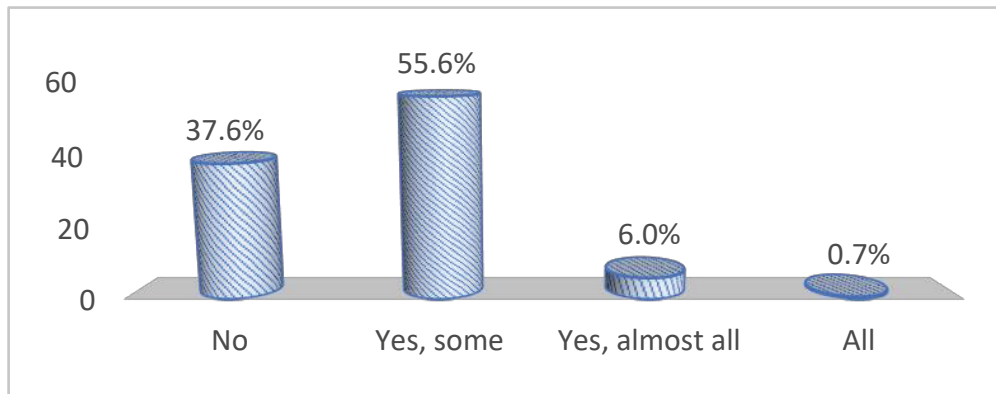
Note. Source in-house data.

Similarly, regarding the possible use of audio-visual materials derived from television programs for the development of classes, students showed a low, scarcely generalized level of use, as showed in **figure 2**. Only 9,6 % stated that the teacher always or almost always integrates television content into the development of their subject and 90,4 % stated that they never or almost never refer to their programs for the development of the content they teach.

Figure 2.

Television use by teachers
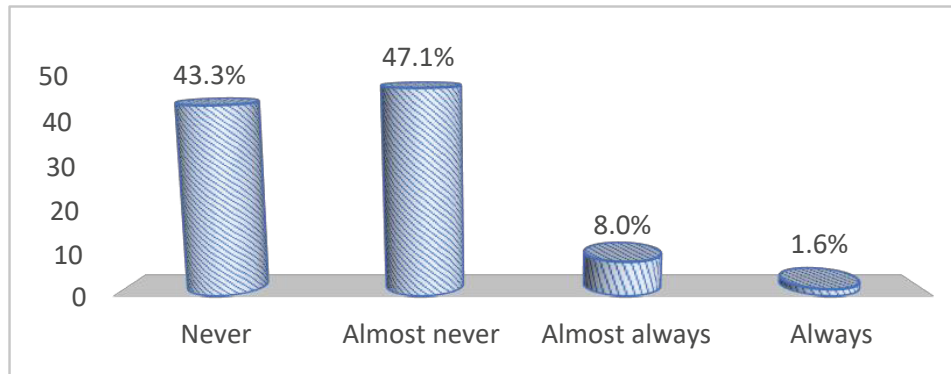
Note. Source in-house data.

In view of this, students stated that most of their teachers do not make use of technology to develop their subjects, so that during the research it was necessary to investigate the motivations of teaching staff to understand the reasons that led them not to use the media, as reported by the students. Therefore, the existence of this digital divide is confirmed with respect to the real gap between the use that students make of digital media outside the classroom and the use that teachers make of them at school.

Materials and Methods

• **Objective**

Given that the analysis of the results obtained in our research project showed that teachers did not use ICT to develop their subjects, we set ourselves the following objective: To find out the reasons why Compulsory Secondary Education teachers do not use ICT in the classroom.

• **Participants and context**

The work presented here corresponds to the second phase of a research work carried out in 15 secondary schools in the Autonomous Community of the Region of Murcia (CARM), where a preliminary questionnaire was applied to secondary school students in the 3rd and 4th years of compulsory secondary education. Of 28.999 students in 3rd and 4th year of Compulsory Secondary Education in the Region of Murcia, 2,734 were surveyed, which, at a confidence level of 97 %, gives a ± 2,89 sampling error. In this second phase, the procedure followed was intended to gather qualitative information to go more deeply into the results obtained in the first phase. To achieve our objective, 10 in-depth interviews were carried out with teachers from five Compulsory Secondary Education schools, selected by convenience with respect to the qualifications of teachers who work there, from among the secondary schools that participated in the research.

• **Procedure**

Two teachers from each educational center were interviewed, using the criterion that one of the teachers was in favor of and

used ICT on a regular basis, and the other was not in favor of ICT use, nor did he/she use ICT frequently. We called the first two "ICT teacher" (pro-ICT teacher) and the second "NICT teacher" (less-ICT teacher). The "ICT teacher" was characterized by habitual use and the belief that ICT is an effective tool in their teaching work; in contrast, the "NICT teacher" was characterized by more sporadic use and the belief that ICT is a resource that can occasionally be brought into the classroom. To select these teachers, we had the support and complicity of the school's management team, who told us which teachers to interview.

• **Technique**

In the field of education, it is increasingly necessary to seek complementarity between a quantitative and qualitative approach, as this combination provides more complete research results (Hernández et al., 2006). Therefore, in this research we started with a quantitative approach to end, in the second part of the research, with a qualitative approach, to understand and work in more depth the results extracted in the quantitative analysis, "to understand, describe, and sometimes explain social phenomena 'from the inside' in a number of different ways" (Flick, 2015, p. 11). For this purpose, in-depth interviews, also called open-ended interviews, have been used, where the researcher usually raises one or two issues, and other questions emerge from the interviewees' responses (Taylor and Bogdan, 2009). The criteria generally used to choose the subjects to whom this technique is applied are their qualifications in relation to the subject matter in question.

The aim of this technique is to complete the world of meanings for the subject around a topic: in our case, the use of technology by Compulsory Secondary Education teachers. After an initial meeting of teaching experts in the field, it was decided not to develop a script for the interview but to start with a single question that would serve as a proposal for dialogue in which the subject would narrate their difficulties, motivations, and experiences regarding the use of ICTs in their professional work as teachers. The role of the interviewer was therefore limited to letting the interviewee speak. The proposed topic was formulated with the following question: "*Why do you think ICT is not used in teaching*?" In this way, the aim was for the subjects to freely express their opinions about the personal significance of their practice with ICT.

The duration of the interview was not fixed in advance, so it was the interviewees themselves, depending on their response, time, and wealth of meanings, who determined the duration of the interview. In short, the interviews were terminated based on saturation criteria (when the interviewee no longer contributed anything new to the topics dealt with).

• **Analysis of qualitative data**

For data analysis, the interviews with teachers were recorded and, subsequently, the content of the interviews was transcribed and analyzed using the qualitative data analysis software "MAXQDA" version 10.0.

In addition to the texts from the recording, extra-literal variables referring to the arrangement and use of ICT in the classroom were used for content analysis. The aim was to find out if there were differences in the use of ICT according to these variables.

Results

After the transcription and analysis of the different interviews conducted, the process of categorizing the responses obtained was carried out; these categories emerged from the analysis a posteriori. **Table 1** shows the codes that, in general terms, appear most frequently after the analysis of the results.

Table 1.

Codes most frequently repeated in the interviews without differentiating teacher type.

Categories	Code	Definition	Frequency
Dedication	Ded	Integration of ICT in the classroom requires time and effort in terms of training, preparation of lessons, use of devices, and use of ICTs.	26
Training	Tra	Training (formal or informal) on the use of ICTs or on ICTs per se.	22
Convenience	Conv	It alludes to the comfort zone, to doing things without breaking with routine.	14
Teachers' attitude	TeaAtt	Interest in ICT and innovation in general understood as a change that brings about an improvement in practice.	14
Teachers' age	TeaAge	Understood as younger teachers being more competent (ICT training and use), and older teachers (less ICT training and use).	12
Digital competence	DC	Developing digital competence to be able to use ICTs.	10
Old style	Os	Introducing ICT means making changes and not all teachers (both young and old) are ready to innovate.	10
Teaching applications	TeaApp	Application of ICTs in your work, subject, etc.	10
Type of student body	TypStu	It refers to the fact that there are students who can work with ICT (focus on the task) and others who cannot (get distracted by using *Youtube, Facebook*...).	8
Adequate infrastructure	SufInfra	Resources available: broadband, computers, Internet connection, etc., but even so, there is no move towards using ICT in the classroom.	7

Below are some quotes from teachers taken from their interviews. Each of the quotes was also coded according to the teacher interviewed (E1, E2), the Secondary School to which they belonged (C1, C2, C3, C4, C5) and the category assigned (coded in the **Table 1**).

Teachers emphasize that among the different factors that influence the use of ICTs, we find that they require extra dedication and that they need to invest a lot of time to make good use of them:

I think that there are a lot of factors that have an influence. One of them, [...] lack of time. Often there is no time, between what you must prepare and correct [...], we do not even have time to talk to each other (E2, C2, Ded).

Training is another important factor, they recognize that there is a wide range of training available, but that such training does not always achieve the development of digital competence in teachers, understanding that other aspects

influence the development of this competence, in addition to the training received:

> One of the excuses given for not using ICTs was the lack of training. [...] there has been a lot of varied training. [...] Teacher and Resource Centers (CPRs) in the Region of Murcia have been training in the use of ICT, [...] Lifelong learning. I am referring to practicing teachers (E1, C1, Tra).

> [...] They do not have the competence to do more complicated things, and the question is why they do not have that digital competence (E2, C4, Tra).

Getting out of the comfort zone also influences the use of ICTs, from the teachers' perspective: "Convenience; our textbook; our notes; we communicate; we explain; we use the blackboard" (E2, C2, Conv). Also, many of the participants indicated that this lack of use is not always due to external factors but depends largely on the attitude of the teacher: "So, what I believe to be the change that ICT can bring about in schools has not taken place, because in the end it depends on the attitude of the teaching staff" (E1, C3, TeaAtt).

And that this, in turn, depends largely on age, highlighting that younger teachers have fewer difficulties in using it because they have greater contact with new technologies, which provides them with greater digital competence:

> And the difference between young teachers and older teachers is very, very noticeable. Because young teachers, however, as they are being educated (even our own students), they live with technology every day, and I am sure that, if any of them, in the future, go into teaching, they will use technology more than non-technology (E1, C5, TeaAge).

Precisely, digital competence is one of the fundamental reasons that mark the use or non-use of ICT, from the point of view of some teachers, as shown in the following commentary: "I believe that those who do not use these new technologies do so because their lack of digital skills" (E1, C1, DC).

Another reason highlighted by teachers is that they intend to introduce major changes through ICT in a school that has not changed in many years:

> Well, in schools, high schools, universities... they still use textbooks or notes and exams as they did in the 20th century. You know what they say: "we are teaching 21st century students in 20th century buildings and with 19th century methodologies (E2, C4, Os).

Regarding the way in which they are applied, teachers emphasize various uses: "As for reading digital press, no, what we do in class; [...], is that they read books. [...] and regarding digital reading on the Internet, we do some research work" (E2, C3, TeaApp). Teachers do not only allude to the teacher's attitude when we refer to reasons for not using ICTs, they emphasize that the attitude of the students also influences their use of ICTs: "Then, on the other hand, you realize that pupils get tired of everything" (E1, C3, TypStu).

Finally, teachers refer to the equipment, indicating that the infrastructure is sufficient and that in principle this is not a reason for not using ICTs: "The centers have been equipped. The Regional Department of Education, here in Murcia, has equipped all the centers with Internet connection [...]" (E2, C1, SufInfra).

Analyzing the interviews of "ProICT teachers", those who are closest to the use of ICT in their classrooms and with the subjects they teach, the most frequently established categories are those shown in **table 2; table 3** shows the frequencies extracted from the interviews of the ICT teachers to compare them.

Table 2.

Categories most frequently repeated in the ProICT Teacher interviews

Category	Code	Frequencies
Dedication	Ded	17
Training	Tra	17
Convenience	Conv	11
Teachers' attitude	TeaAtt	10
Digital competence	DC	10

Table 3.

Categories most frequently repeated in the NICT Teacher interviews

Category	Code	Frequencies
Dedication	Ded	9
Teachers' age	TeaAge	8
Type of student	TypStu	7
Technical problems	TecPro	7

Some of their responses are as follows, according to the coding set out above: A new category emerges from the analysis of NICT teachers, technical problems, which is understood as technical failures or inconveniences when developing the teaching-learning process in the classroom, such as: projector does not work, Internet connection does not work, computers are very slow, etc.... This is what teachers argue:

> The disadvantages for the use of ICT are that the center's classrooms do not have all the necessary resources, there is no Internet in some classrooms, some have digital whiteboards, others do not, there are projectors that need to be changed because they are old (poor light and clarity) (E1, C3, TecPro).

The following is an analysis of those categories with similar frequencies in both study groups, ProICT teachers and NICT teachers, as presented in **table 4**.

Table 4.

Similar categories between ProICT and NICT teachers

Category	Code	Definition	ICT Teacher Frequency	NICT Teacher Frequency
Adequate infrastructure	SufInfra	Available resources: broadband, computers, Internet connection, etc., but even so, there is no move towards using ICT in the classroom...	4	3
Technology as a means	Tec	Technology is not used as an end, but as a means to develop the objectives proposed in the curriculum.	3	3
Fear	Fea	ICT is not used because of various fears: ridicule, losing class time, students getting more confused, etc.	2	2

Category	Code	Definition	ICT Teacher Frequency	NICT Teacher Frequency
Teacher student gap	Testugap	Student's knowledge of ICT and what the teacher knows about it.	1	2
Insecurity	Insec	Lack of security in the use of ICTs, unprepared for unforeseen events that may arise in the use of ICTs.	2	1
Abuse of technology	TecAbu	Technology should not be abused (students have too much access and it distracts them).	1	1
Lack of software resources	Lsfw	Programs, applications, etc. for use in the interactive smart whiteboard, without adequate resources and software it is useless.	1	1

Among the factors that appear in common in the two study groups, we find the categories analyzed above.

Teachers argue that the lack of infrastructure in secondary schools has been a handicap for all of them: some because they needed technological means (computers, connections...) that would allow them to use the media in the classroom, and others because their main argument was that this lack of infrastructure did not allow them to incorporate ICT in the classroom.

In relation to the category of using technology as a means, we find those ProICT teachers who consider technologies to develop the teaching-learning process in another way, as opposed to NICT teachers who see it exclusively as an end.

"Technologies can be an excellent way to change the methodology [...]. And now it is easier than ever to collaborate, do project work, use portfolios" (E1, C3, Tec). Teachers consider that they are afraid, that the use of technologies in the classroom makes them insecure, they state that they are facing digital natives since students are more competent in this field than teachers, but the position of each group of teachers studied is different. In contrast to the uncertainty of not knowing the NICT group, where they state that these tools take time away from them in the classroom, there is the position of those who use them, knowing that in many cases they are facing students with greater knowledge in this field.

> Teachers who are not digitally competent when they are working or trying to work in digital have a lot of insecurity, [...] for them the security is the chalk board because there they know perfectly well how it works, if they make a mistake they erase, but to be in a class thinking about what tool I have to use on the digital board because it becomes a confusion and they lose a lot of time and they are not willing to... they want you to teach them recipes (E2, C4, Fea).

The next category, teacher-student gap, is closely related to the previous one, since one of the causes of this fear, insecurity, is the difference in the use and control of digital media by students, since, due to their condition,

they were born using technologies and have a greater mastery of them.

> You pick up a teenager and they talk about a thousand applications, and they know them all. [...] Maybe you talk about another subject, and they have no idea, but you talk about mobile telephony, you talk about computer models... whatever, and they have it all, I don't know... one hundred percent mastered (E1, C5, Testugap).

Insecurity was another of the categories that appeared in both groups of teachers, since both express that in many cases the use of ICTs creates uncertainty for them, some because they are more in favor of their use, ProICT, and others, NICT, because they do not know how to use them and because of the problems they may cause in the classroom. "Teachers who are not digitally competent when they are working or trying to work digitally are very insecure" (E1, C1, Insec).

The technological abuse to which students are continually subjected is another of the study categories. They consider that the life of adolescents is currently linked to the use of screens, and this is the argument used by NICT, since they comment that they already spend enough time in the social and family environment and that it is not necessary or convenient to extend it to the school environment; as opposed to the ProICT, who also consider that they spend a lot of time, but that they are digital natives and the use of technological media is part of their daily life. Problems of misuse [...]. And too much technology must be bad. Of course. But if technology is well applied, I find it interesting" (E1, C3, TecAb).

Finally, we would like to insist in the lack of resources and software in the educational field, although there are increasingly less teachers who are aware of everything that is on the market, as it takes them much time

of their lives, an argument used by teachers NICT, as they argue lack of time and ignorance of the possibilities offered by the different technological resources.

This last category, technical problems, can be defined as: projector does not work, Internet connection does not work, computers are very slow, etc...

> A digital whiteboard is of no use to me. Because I do not have the resources to use a digital whiteboard. I cannot make a program, because I do not have time, [...] for me, the smart whiteboard is useful... like a digital screen (E2, C5, Fsfw).

Discussion

When we asked teachers about "*Why do you think ICT are not used in teaching?*" the most frequent answers in the interviews mentioned the dedication required to integrate technology into the daily work of teachers and the training needed to be able to use it correctly and efficiently. Teachers, both "Pro-ICT" and "NICT", point out that the training aspect in order to be able to introduce technology in the classroom is essential, not so much in terms of quantity but in terms of quality, since, as some of the interviewees state, it is not a question of acquiring "recipes" to carry them out in the classroom, since it is a global training that starts with the integration of ICT in oneself and then takes it to the classroom. Regarding this aspect, teachers encounter many obstacles when using ICT in their classes; some point to infrastructure problems, malfunctioning of the devices or other inconveniences that result in a waste of time that they cannot afford, conveying a negative view of teachers due to the lack of the necessary technological infrastructures or the lack of digital teacher training (Heredia et al., 2020). They also state that the continuous and exclusive use of ICT is not entirely beneficial, so they need to intersperse activities with

technology and activities without technology as technology abuse may be harmful for students as it increases their "dose" of technology to which, according to teachers' perception, many are addicted.

On the other hand, we can highlight two main points of view regarding the perception and use of ICT by teachers: an instrumental vision built from the technological imperative, which identifies technology with artefacts, and which incorporates it to make teaching and learning processes more efficient and productive; and a critical, questioning vision, which conceives ICT as instruments that allow students to be prepared to *know how to do* and to *be able to choose*, which bases their incorporation on equal opportunities, respect for others and understanding of diversity (Romina, 2018). However, the use of ICT in the classroom is perceived as positive by students, and some studies, such as the one carried out by Rugeles et al. (2015), already point out the benefits of the use of ICT in students and their influence on the development of self-discipline, critical and reflective capacity, and their ability to work collaboratively. We also find students who say that Internet is already used in class to watch videos, photos, and tutorials, which they consider very useful as it brings them closer to reality and helps them to understand the content. But it is not only pupils' perceptions that point to the direct benefits of ICT use; teachers also recognize the great influence that their use has on the learning of content, skills, and competences (Martínez-Serrano, 2019).

Teacher training is closely related to the use of ICT in their teaching work, since without constant and continuous training it is very difficult to program effective and efficient sessions, to overcome the technical obstacles that often appear when using technology, and to have a wide range of options to meet students' educational needs, who demand and positively value the standardized use of ICT in the classroom, also highlighting that teachers' digital competence is part of the basic competences they should have (Heredia et al., 2020). For this reason, the quality of the initial digital training and literacy that teachers can acquire, adjusted to the level of education or teaching where they will teach, is critical (Castiñeira and Lorenzo, 2022), as poor digital teacher training also leads to a lack of confidence in their use of ICT for the application of new, more effective active methodologies, so that this also increases the enormous existing gap between the digital competence of students (digital natives) and digital immigrant teachers (López, Pozo et al., 2020).

We therefore note that a large proportion of teachers agree that they do not use ICT in the classroom due to the dedication involved in terms of training, class preparation, setting up the equipment when it comes to implementing the sessions, etc. ... Both types of teachers, "Pro-ICT and "NICT", agree most schools have the necessary resources and that they have enough technology to carry out ICT sessions: they have projectors, digital whiteboards, Internet connection... even if it does not always work and not all classes have everything, but at school level there is certain infrastructure. However, going back to dedication, they again emphasize the training aspect, as constant and continuous training is required due to the updating of both hardware and software. They also point to the attitude of teachers who are in their "comfort zone", who feel comfortable with their textbooks and traditional methodology, as innovation has a cost that they are not willing to assume, and they prefer to continue doing things as usual. Teachers with more years of experience are less likely to develop innovative methodologies in their classrooms and, therefore, to introduce the use of ICT, as opposed to newly qualified teachers (López-Meneses et al., 2020).

Regarding the differences between "Pro-ICT" and "NICT" teachers, the former point to a

problem of dedication and training as we have mentioned above, they think that it is a question of attitude, of accommodation, of not wanting to leave the "comfort zone" and continue doing what they have been doing up to now. Some point out that teachers who do not use ICT lack digital competence, and so it comes back to the need for self-directed training through institutions offering courses, seminars, etc. "NICT" teachers also put forward the argument of dedication: it takes a lot of time to train, prepare classes and carry them out. The traditional way is easier for them, even so, it is important to highlight that this attitude can hinder and obstruct students' teaching and learning processes, as these teachers are not taking into account the advantages and the need for training that the incorporation of digital resources and content in the classroom involves (López-Meneses et al., 2020), but unlike "Pro-ICT" teachers, they give much importance to the age of the teaching staff, young people are more prepared to use ICT because they use them in their daily lives and apply them naturally. However, this can also be analysed from another perspective because, while it is true that younger teachers make better use of ICT, their limited teaching experience makes it difficult for them to be able to create their own educational materials and content, even if they create these resources online; however, teachers with more years of experience feel more capable of creating their own teaching materials but without using ICT to do so (Álvarez and González, 2021). Peláez et al., (2018) also indicate that teachers who are part of the digital natives' generation are more effective when it comes to using and applying ICT and virtual environments in the classroom. It should be noted here that, although there are teachers who point to the age difference of teachers as a cause of non-use of ICT, some interviewees point more to a question of attitude, as Romina points out (2018).

On the other hand, they also see the technical problems they have to face when trying to implement sessions with ICT as a reason for not using ICT, as well as pointing out the characteristics of the group of pupils as a determining factor for whether or not a session goes well; this is therefore a significant reason for not using ICT, because they have to do double work, preparing the session for students who do work with ICT and another alternative (the traditional one) in case you get a group that does not work well with ICT.

In short, we can see that "Pro-ICT" teachers point to teacher-related reasons such as attitude, dedication, or training, while "NICT" teachers see the reasons outside the personal sphere, depending on resources, equipment, technical problems, and the reference group of students. In general, as Sánchez and Galindo (2017) also indicate, teachers' use of ICT is related to the more or less positive attitude with which they make use of them and with which they consider them to be beneficial for student learning, teachers' beliefs and educational practices.

Conclusions

The following conclusions are the most significant aspects of the study: teachers think that centers have sufficient infrastructure and resources available for the use of ICT, although they also emphasize that there are many difficulties in their use. The teachers, whether they are in favor of these technologies or do not use them, comment that the problems come from the malfunctioning of the devices or other inconveniences that result in a waste of time that they cannot afford to waste.

Precisely, teacher training is closely related to the use of ICT in their teaching work, since without training it is very difficult to program effective and efficient sessions to meet the educational needs of students. Some teachers point out that teachers who do not use ICT lack

digital competence, and therefore it comes back again to the need for training by oneself and through institutions that offer courses, seminars, etc...

Regarding the differences between "ProICT and "NICT" teachers, the former point to teacher-related reasons such as attitude, and think that it is a question of attitude, of convenience, of not wanting to leave the "comfort zone" and continue doing as before. "NICT" teachers also put forward the argument of dedication, indicating that a lot of time is required for training, preparing the classes, and carrying them out, and emphasizing the technical problems and the problems of the reference group of students.

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