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Artículos Científicos

Perfil TIC de estudiantes de la licenciatura en Educación de la UNACAR

ICT Profile of Students of the UNACAR's Bachelor of Education

Perfil de TIC dos alunos do Bacharelado em Educação da UNACAR

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Resumen

El objetivo central de este texto es dar a conocer el perfil que tienen los estudiantes de primer semestre de la licenciatura en Educación de la Universidad Autónoma del Carmen (Unacar) en cuanto a habilidades, conocimientos y condiciones materiales individuales y colectivas para el empleo de las tecnologías de la información y la comunicación (TIC). Para ello, se realizó una investigación de tipo cuantitativa, con un alcance descriptivo. El instrumento, una encuesta con 20 reactivos de opción múltiple, estuvo basado en el *Cuestionario sobre usos de las TIC entre estudiantes universitarios barineses* (Universitat Oberta de Catalunya, 2006), el cual fue adaptado a las características de la población objeto de estudio, las condiciones particulares de las universidades en México, así como la zona en la que se realiza este estudio. Se seleccionó una muestra no aleatoria de 52 estudiantes de los dos grupos primer ingreso, en el ciclo escolar de febrero a julio del 2019, de la licenciatura en Educación de la Unacar, ubicada en el estado de Campeche. Los resultados obtenidos indican que, del total de la muestra, 44 % permanece conectado a Internet de 13 a 20 horas semanales. Asimismo, 50 % de los encuestados no posee equipo de cómputo personal en sus casas, por lo que realizan sus tareas en algún ciber (33%) o en la universidad (25%). A pesar de que 44 % comenzó a utilizar la computadora entre los 3 y 10 años de edad, solo 19 % la utiliza para actividades académicas; 75 % emplea el Internet para comunicarse con sus compañeros de clase por correo electrónico, fundamentalmente. Aunado a ello, 46 % no ha participado en foros en línea ni tiene experiencia en varios programas informáticos; 49 % emplea el Internet solo para buscar información para las clases. A pesar de todo, 92 % de los estudiantes consideran muy importante el empleo de las TIC en su futura profesión.

Palabras clave: competencias tecnológicas, difusión selectiva de información, enseñanza superior, tecnología educacional.

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Abstract

The central objective of this text is to publicize the profile of first semester students of the Bachelor of Education degree of the Universidad Autonoma de Carmen (Unacar) about individual and collective skills, knowledge and material conditions for the use of information and communication technologies (TIC). For this, a quantitative research was carried out, with a descriptive scope. The instrument, a survey with 20 questions of multiple choice, was based on the Questionnaire about the uses of TIC among University students in Barcelona (Universitat Oberta de Catalunya, 2006), which was adapted to the characteristics of the population under study, the particular conditions of universities in Mexico, as well as the area where this study is performed, A non-random sample of 52 students of the first two admission groups from February to July 2019 was selected, of the education degree from UNACAR, located in the state of Campeche, The results obtained indicate that, of the total sample, 44% remain connected to the Internet from 13 to 20 hours per week. Likewise, 50% of the respondents do not have personal computer at home, so they carry out their homeworks in a internet cafe (33%) or at the university (25%). Despite the fact that 44% started using the computer between 3 and 10 years of age, only 19% use it for academic activities; 75% use the Internet to communicate with their classmates by email, fundamentally. In addition, 46% have not participated in online forums or have experience in various computer programs; 49% use the Internet only to search for information for classes. in spite of everything, 92% of students consider the use of TIC very important in their profession future.

Keywords: technological competencies, selective information dissemination, higher education, educational technology.

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Resumo

O objetivo principal deste texto é divulgar o perfil dos alunos do primeiro semestre do Bacharelado em Educação da Universidade Autônoma de Carmen (Unacar) em termos de habilidades individuais e coletivas, conhecimentos e condições materiais para o emprego de tecnologias da informação e comunicação (TIC). Para isso, foi realizada uma pesquisa quantitativa, com escopo descritivo. O instrumento, uma pesquisa com 20 itens de múltipla escolha, baseou-se no Questionário sobre uso de TIC entre estudantes universitários de Barines (Universitat Oberta da Catalunya, 2006), adaptado às características da população estudada, o condições particulares das universidades do México, bem como a área em que este estudo é realizado. Uma amostra não aleatória de 52 alunos dos dois grupos de primeira admissão foi selecionada, no ano letivo de fevereiro a julho de 2019, pelo Bacharelado em Educação da Unacar, localizado no estado de Campeche. Os resultados obtidos indicam que, do total da amostra, 44% permanecem conectados à Internet de 13 a 20 horas por semana. Da mesma forma, 50% dos entrevistados não possuem equipamento de computação pessoal em casa, portanto realizam suas tarefas em um ambiente cibernético (33%) ou na universidade (25%). Apesar de 44% começarem a usar o computador entre 3 e 10 anos, apenas 19% o utilizam para atividades acadêmicas; 75% usam a Internet para se comunicar com seus colegas de classe por e-mail, fundamentalmente. Além disso, 46% não participaram de fóruns on-line ou possuem experiência em vários programas de computador; 49% usam a Internet apenas para procurar informações para as aulas. Apesar de tudo, 92% dos estudantes consideram muito importante o uso das TIC em sua futura profissão.

Palavras-chave: competências tecnológicas, disseminação seletiva de informações, ensino superior, tecnologia educacional.

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Introduction

The entry of information and communication technologies (ICT) in higher education today poses a change in the educational paradigm, since it demands training in line with the knowledge and information society.

This change affects society, individuality and education in different ways, since everything around us is technology. According to Arras, Torres and García (2011): "ICT skills have become part of the requirements that are demanded in many of the jobs" (p. 2). Therefore, there is a commitment on the part of the universities to develop these competences in all specialties and that students and teachers are trained to practice these new technologies on a daily basis.

Along these lines, in recent years, universities have made innovations with the use of technologies, and have also shown their interest in learning how students appropriate ICT management for academic activities.

This is evidenced by some of the research carried out from a time here. For example, the research by Cázares and Urbiola (2015) involving public universities in the Bajío de México: institutions in San Luis de Potosí, Querétaro and Guanajuato, and which aimed to investigate the involvement of ICT in the educational field from the perspective of the students. As a result, it was found that students are only consumers of information, despite having the material and personal conditions to activate the use of technology in academic work.

Posada (2015), for his part, carried out a study at the University of San Buenaventura, Cali, Colombia, with a sample of 30 students, to whom various instruments, interviews, focus groups and field diaries, among others, were applied. with the intention of knowing your impressions of technology-mediated communication. Among the results, Posada (2015) highlights that young people recognize the importance of the correct use of technologies in education. They even question, from an ethical point of view, the duty of ICT in today's society.

The Autonomous University of Carmen (Unacar), in the state of Campeche, Mexico, is no stranger to the demands of society, to global concerns in teaching, daily life and employers, so the structure of its model The Acalán Educational Model (Unacar, 2017) is based on the competences that the student must develop throughout his academic career in order to meet the labor demands of the 21st century.

Studies of the competency-based approach date back to the last century, when the term became familiar from two different perspectives (López, 2013): Skinner's behavioral psychology and Chomsky's linguistics. López himself (2013) considers that competition is "as an effective behavior, based on the observable effective and verifiable behavior of people" (p. 34). Later this concept was considered and applied in different contexts; However, there are two areas in which it was especially deeply rooted, both familiar to our environment: the business and training fields.

In both contexts (business and educational) competences are dominant. On the one hand, in companies it is required that the professional be trained to carry out the tasks that his area demands, that he give the right answer to specific tasks and work as a team; while in the teaching area the same objectives are pursued but that their knowledge is for life. However, in teaching, in the instructional design of the curriculum courses, both are linked; fundamentally, in the profile of the graduate, since, at the end of their student work, the professional must be competent to respond to the demands of their work or business environment. There is the relationship between them.

This training trend is so powerful that it can be verified internationally, as in the case of Tuning projects in Europe and Latin America, as well as Reflex and Profex on both continents (López, 2013, p. 36).

It is known that for the constructivists the competences are acquired from the knowledge that the individual has of his own experience, his environment. To this is added the information he receives from abroad, how he processes it, analyzes it, collates it, reforms it and deciphers it to become part of his knowledge, especially in contact and interaction with others. This is an individual process.

From the above it can be inferred that a great diversity of definitions has been formulated regarding the concept of competences, including Roegiers and Perrenoud; however, for this study, the one offered in Proyecto Tuning (2006, cited in López, 2013) was taken, namely: "A set of cognitive and metacognitive capacities, intellectual and practical, as well as ethical values" (p. 40), since it is the basis of the Unacar philosophy.

In this sense, the classification of the competences that are offered are two: generic competences and specific competences. According to López (2013): "Generic competencies are considered to be generators, to a large extent, of the process of comprehensive training of students; they are also called transversal competences "(p. 41). For this author, they are

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the basic, general competences that are involved in transferable knowledge. And within them is the competence of the ICT domain, also stipulated in the Acalán de la Unacar Educational Model (2017), which sets the objective that students "use information and communication technologies appropriately to access and generate information effectively and efficiently in personal and professional performance" (p. 74).

Developing

The use of ICT from the first semesters at the university, in the face-to-face modality, has the objective of promoting higher quality training in student education that will be useful for promoting technological knowledge in the country; thus, from an early stage in his career, he will appropriate the necessary tools for the following semesters; You will be trained and competent in the use of ICT, as expected from a current professional. In this regard, García, Reyes and Godínez (2017) state the following:

> We cannot let it go unnoticed that the education of the future will involve a teaching-learning process with certain particularities such as the fact that it can be carried out at any time, it can be carried out anywhere and the pace of learning will be personalized. (p. 7).

For this reason, university professors, in parallel to their face-to-face courses, put the technological tools at their disposal into practice, such as the use of a virtual learning classroom to strengthen knowledge and skills in a specific subject or matter, as well as support technology skills skills. In the NMC Horizon Report: Higher Education Edition 2016 (Johnson et al., 2016), it was already pointed out how technology should prevail in and outside educational spaces: online platforms for learning at school and at home for reinforce student learning.

Justification

Currently, at different universities, students face social, cultural and family problems that do not allow them to maintain a total stay in higher education centers (Polytechnic University of Valencia / Institute of Education Sciences / Area of Systems of Information and Communications, 2015) and demand less rigid teaching than on-site. Likewise, teachers have detected insufficiencies in the learning or practice of certain basic contents for the

educational level in which the student is, and they resort to another modality to develop competences, among them the technological one.

Some of the ways in which it has dabbled is called blended learning or blended learning. On the subject, Abarca (2015) states that this modality "combines face-to-face class with the use of tools, such as interactive, web-based instruction (…), electronic discussion forums, content for autonomous work and collaborative "(p. 336).

Due to this, and taking into account the development of educational technology, in addition to the number of students facing higher education in recent years, Flores, González and Reyes (2014) point out that the number of "educational programs offered in a distance modality is constantly growing, derived from the opportunity they provide for students to organize their time and way of working "(p. 1). This means that, based on the efforts of teachers to involve new technologies in educational processes, a professional adapted to the new challenges of society and their profession will be achieved: teamwork, technological skills and abilities, and above all, adaptability to the current work environment.

Problem Statement

Despite the previous assertions, the university education environment in the Mexican southeast is far from the reality offered by the center and the north of the country. According to the National Survey on Availability and Use of Information Technologies in Households [Endutih] (National Institute of Statistics and Geography [Inegi], 2018) of 2018, in the specific case of the state of Campeche, where the In this study, only 51.3% of the population has an internet connection, as shown in Table 1.

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Tabla 1. Conexión a internet según la Endutih de 2018

Hogares que disponen de conexión a internet por entidad federativa del sureste mexicano en áreas urbano, rural en 2018						
Entidad federativa	Total					
	Total		Sí disponen		No disponen	
	Absolutos	%	Absoluto	%	Absoluto	%
Campeche	256 284	100.0	131 482	51.3	124 802	48.7
Chiapas	1 360 207	100.0	334 629	24.6	1 025 578	75.4
Guerrero	992 229	100.0	347 686	35.0	644 543	65.0
Oaxaca	1 148 216	100.0	338 277	29.5	809 939	70.5
Puebla	1 653 961	100.0	655 651	39.6	998 310	60.4
Quintana Roo	511 117	100.0	379062	74.2	132 055	25.8
Tabasco	673 068	100.0	301 272	44.8	371 796	55.2
Veracruz	2 481 145	100.0	877 589	35.4	1 603 556	64.6
Yucatán	599 396		302 363	50.4	297 033	49.6
Nota: Proporciones respecto del total de hogares. Cifras preliminares. Cifras correspondiente al mes de mayo.						

Fuente: Inegi (2018)

Added to the above are the data provided by the same national survey about the number of households that have computers: only 44.2% of households in the state of Campeche have technological equipment. Therefore, the digital divide in this state is alarming, especially if one takes into account that education bets on ICT skills. This information is displayed in Table 2.

Tabla 2. Disposición de computadora según la Endutih del 2018

Hogares que disponen de computadoras por entidad federativa del sureste mexicano en áreas urbano, rural en 2018						
Entidad federativa	Total					
	Total		Sí disponen		No disponen	
	Absolutos	%	Absoluto	%	Absoluto	%
Estados Unidos Mexicanos	34 699 617	100.0	1557418 2	44.9	19 125 435	55.1
Campeche	256 284	100.0	113 344	44.2	142 940	55.8
Chiapas	1 360 207	100.0	328 258	24.1	1 031 949	75.9
Guerrero	992 229	100.0	294 989	27.7	697 240	70.3
Oaxaca	1 148 216	100.0	356 756	31.1	791 460	68.9
Puebla	1 653 961	100.0	610 823	36.9	1 043 138	63.1
Quintana Roo	511 117	100.0	245 572	48.0	265 545	52.0
Tabasco	673 068	100.0	233 183	34.6	439 885	65.4
Veracruz	2 481 145	100.0	761 686	30.7	1 719 459	69.3
Yucatán	599 396		285 137	47.6	314 259	52.4
Nota: Proporciones respecto del total de hogares. Cifras preliminares. Cifras correspondiente al mes de mayo.						

Fuente: Inegi (2018)

For all the aforementioned, before starting a course, a workshop for teaching or research with the use of some technological program or tool, the research questions arise: what technological skills and abilities do students have in the first semesters of Unacar in the face of the realities of their social and family environment? Have they had experiences at previous educational levels that have developed their level of competence in ICT and collaborative work?

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General purpose

To determine what type of competence in the use of ICTs present the students of the first semesters of the Bachelor of Education belonging to the Faculty of Educational Sciences of the Unacar as future professionals in whose hands will fall the noble task of training specialists from different areas in Mexico.

Method

It was determined to make a diagnosis about knowledge and practice, the skills developed in the use of technology, as well as the personal conditions that the students of the first semesters of the Bachelor of Education of the Faculty of Educational Sciences of the Autonomous University possess. del Carmen, with a view to facing online or blended courses that support the subjects they receive in person, due to the new roles that teachers and students must play in the 21st century with the use of ICT.

A quantitative research was carried out, with a descriptive scope, since, as stated by Hernández, Fernández and Baptista (2010), "it seeks to specify properties, characteristics, and important features of any phenomenon that is analyzed. Describe trends of a group or population "(p. 80); in this case, about the student's profile from the point of view of their technological competence.

It should be noted that here a user profile is understood as the set of characteristics or preferences that the person has over their Internet searches or the websites they frequent (Cortés and De la Cruz, 2016). They are the skills that the student presents in the handling of technology to perform in another modality that is not face-to-face.

Sample

For this study, the population sample consisted of a total of 52 students, who make up the two groups of the first semester, in the school year from February to July 2019, of the Bachelor of Education already specified, who have a similar profile in terms of at age, sex and schools of origin.

A non-random sample was used, since the groups are naturally or normally integrated for the activity they were created; there is no random assignment (Bono, 2012). This happens

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in classrooms, schools or other centers. Therefore, to determine the user's profile in terms of competence and skills for using technology, all students participated as a limited population.

Techniques used to collect information

The instrument used was a multiple-choice survey based on a diagnostic-type questionnaire, with the aim of knowing the student's technological competence: what experience has he had in the use of an educational platform, what personal material conditions does he have at home? and the school to participate in the course, what technological tools it dominates, among other aspects of interest for this topic, as can be seen in the analysis of the results.

For this, the survey entitled Questionnaire on ICT uses among Barines university students (Universitat Oberta de Catalunya, 2006) was consulted, and it was adapted to the characteristics of the students of Unacar, the population under study, the particular conditions of the universities in Mexico, as well as the area in which this study is carried out. This questionnaire was reviewed and validated by the Unacar CA-35 academic body, whose line of research is as follows: “Information and communication technologies for teaching and learning collaboration”.

This survey was used face to face (Batthyány and Cabrera, 2011), thanks to which direct contact with the student could be had while answering the questions, in order to specify terms or doubts that might arise; For this, in a personal way, the physical questionnaire consisting of 20 items was applied.

Previously, this instrument was applied to a pilot group, and, according to Cronbach's alpha, obtained high reliability, with a value of 0.92.

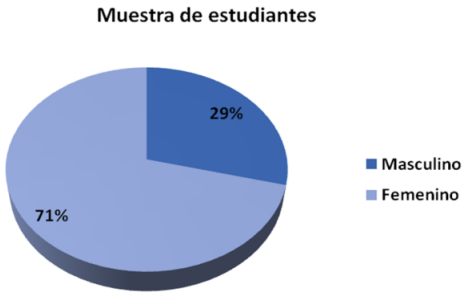
The results were analyzed statistically from the Excel program tool with the intention of obtaining the frequencies about the values obtained for the answers to the questions.

Results

The results presented in this text took into account the responses that could impact the search for technological competence of the students, as well as the conditions they possess personally, so some items were not taken whose results depended on a previous answer that was negative.

Figure 1 shows graphically how the sample of this study is distributed in terms of gender: 71% female and 29% male.

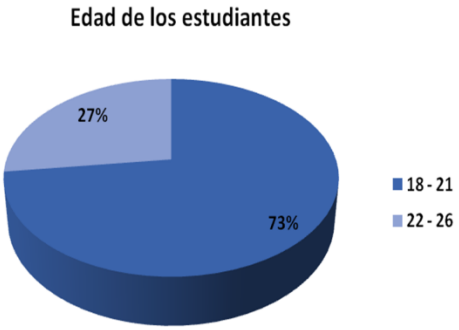
Figura 1. Distribución de género de la muestra objeto de estudio



Fuente: Elaboración propia

Question two had the objective of knowing the age range of the students. Responses range from 18 to 24 years, as shown in figure 2.

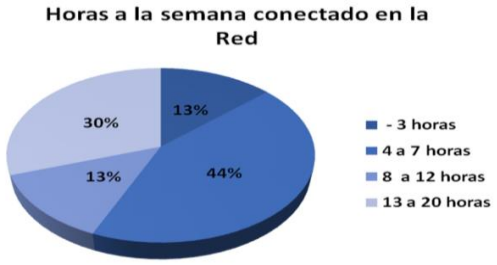
Figura 2. Distribución de la edad de la muestra



Fuente: Elaboración propia

In question three, it was asked how many hours the participants surf the Internet. The results indicate that, of the total, most of them, 44%, surf the Internet for a period of 13 to 20 hours per week (see figure 3).

Figura 3. Horas de navegación en Internet a la semana

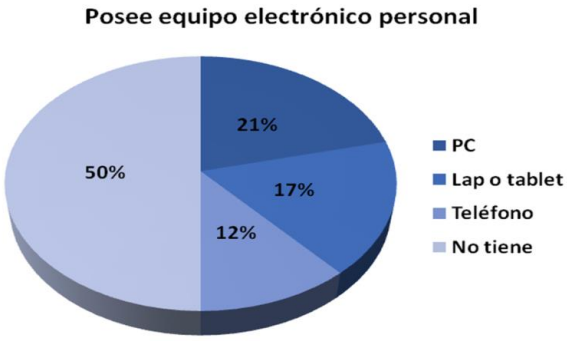


Fuente: Elaboración propia

In this regard, it is considered that the time is not enough if we think that they should carry out individual, joint, collaborative activities, or read information for the work of their classes and projects.

In question four, where it is asked whether the respondent has personal computer equipment, it is evident that many of the students do not have it. In fact, half of these do not have a computer, laptop or tablet or smartphone, as can be seen in figure 4.

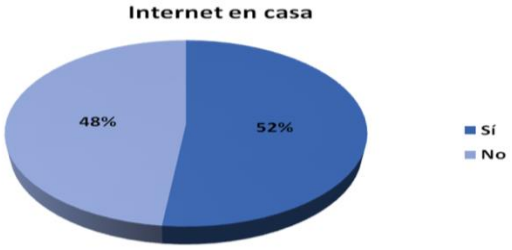
Figura 4. Estudiantes con equipo personal de cómputo



Fuente: Elaboración propia

These data are closely related to the fact that, in most cases, the surveyed students do not have internet service at home, as shown by the answers to question five, when inquiring if they have a provider internet at home (see figure 5).

Figura 5. Estudiantes que cuentan con internet en sus casas



Fuente: Elaboración propia

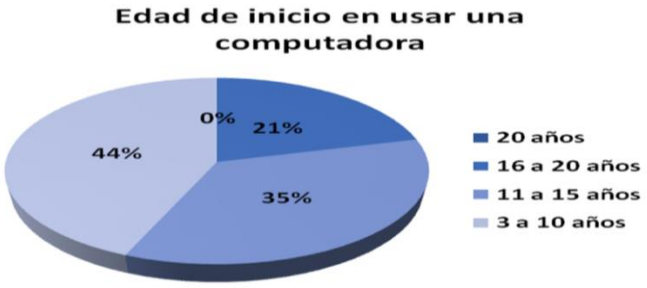
In line with the above, in question seven, when you want to know where they frequently carry out studies that involve the use of a computer, many of the students carry out their tasks outside the home, even in a cyber. This demands more time than they could spend if they had personal equipment and the internet at home. This information can be corroborated in figure 6.

Figura 6. Lugar donde realiza los estudios y las tareas de la escuela

Fuente: Elaboración propia

And in that same vein, it is interesting to know the results of question eight, which asks at what age they started using a computer, since most of the young people surveyed belong to the generation born with technology. Only 44% of the respondents started using a computer between the ages of 3 and 10; the rest, much later, as shown in figure 7.

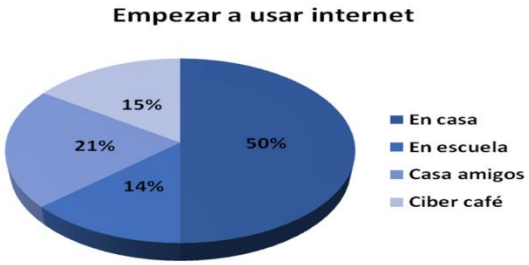
Figura 7. Edad en que comenzó a utilizar una computadora



Fuente: Elaboración propia

In this case, a link is established between not having internet at home with not having personal equipment. In independent questions, 50% answered that they started with games, at friends' houses, in internet cafes or at school, where there was a classroom with computers. This responds to question nine of the questionnaire, in which information is requested about the space or place where you started using this service. The results are observed in figure 8.

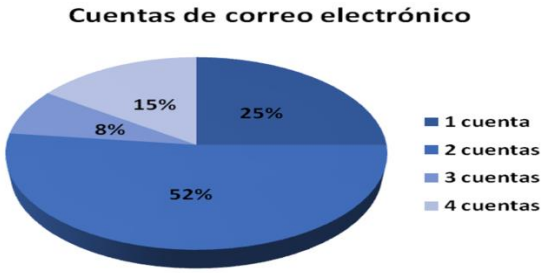
Figura 8. Lugar donde comenzaste a utilizar Internet



Fuente: Elaboración propia

Despite the fact that the use of the Internet is not daily for most students, question 10 of the questionnaire asks if the participant has email accounts. And it is evident that there is communication between them, between students, and also with teachers through this method, perhaps the most traditional for the new times (see figure 9): 52% have two email accounts, while 15% have up to four of them with which they send and receive information from their peers and teachers.

Figura 9. Cuentas de correo electrónico que posee

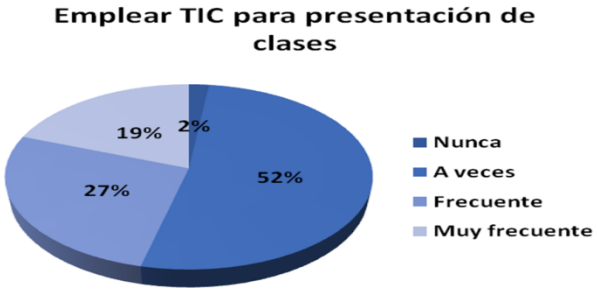


Fuente: Elaboración propia

This information coincides with the data provided by Cázares and Urbiola (2014): "Facebook obtained a 23.7% preference and the email option a 73.1%" (p. 21), which allows us to analyze that students keep in touch with via email, although currently there are other ways, such as WhatsApp, Skype, Facebook; however, as stated, this remains the essential route for those who do not have smartphones, personal computers and internet service at home.

In item 12, respondents had to answer whether they use the computer or another technological tool to make their presentations in class: only 19% answered that they do it frequently, while the majority only sometimes, as shown in figure 10. These presentations are slides, searching images or taking texts from the Internet.

Figura 10. Empleo de las TIC para realizar presentaciones en las clases



Fuente: Elaboración propia

The answer to this question reinforces the idea of little use of the Internet, since, when questioned in question 13 if they have established online communication with their classmates to carry out some academic activity, the data indicates that only 17% have done so in a very frequent, and 37% frequently, as expressed in figure 11. Few are the surveyed students who have faced collaborative activities.

Figura 11. Establecer colaboración *online* para actividades académicas

Fuente: Elaboración propia

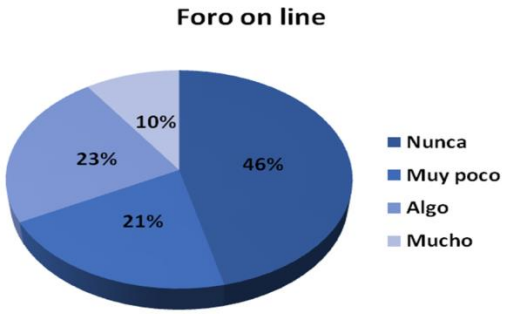
These results are related to the answers to question 15, in which they are asked for information about the frequency they use the Web to obtain resources that they can use in their academic work, such as Prezi, YouTube videos, among others. As can be seen in figure 12, 46% sometimes use this service, while 27% never do it.

Figura 12. Empleo de los recursos de la Web para actividades académicas

Fuente: Elaboración propia

The foregoing highlights the little practice these students have had - despite belonging to a generation born with technology - to resort to the Internet for academic purposes. This is even more accentuated with regard to interactive activities, when question 16 asks about their experience in participation forums or online discussion, and if this form of communication has brought them new perspectives on the course. The results are alarming: 46% of the students have never participated in any and 25% very little (figure 13).

Figura 13. Participación en foros *online*



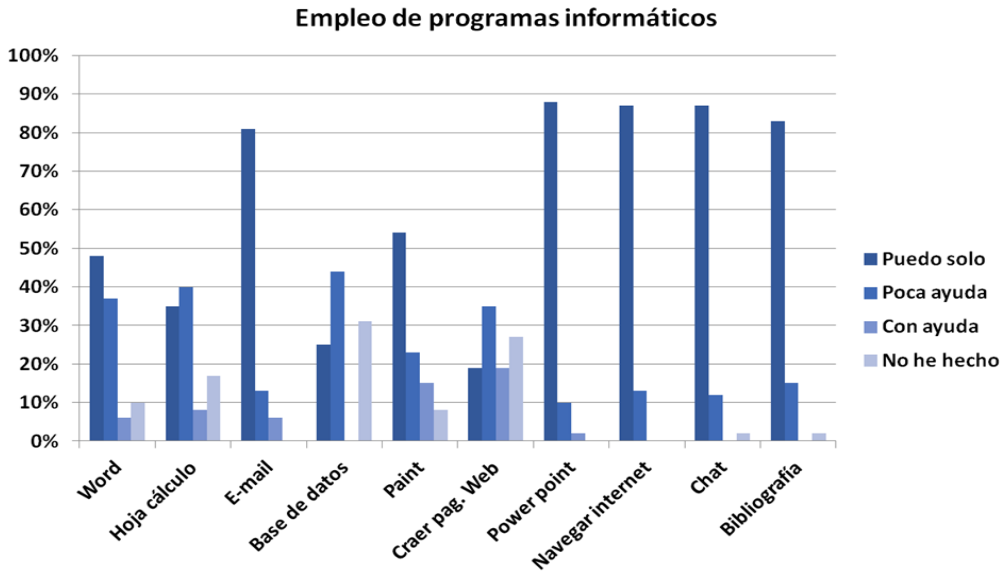
Fuente: Elaboración propia

In this regard, it should be remembered that the Mexican southeast presents a greater digital gap compared to another region of the country. A comparative study between two regions would be interesting to know to what extent technological incompetence can impact the university educational process.

Regarding your abilities in the use of computer programs, question 17 asks you to mark options, based on the examples that are offered: if you can do it alone, with help, or if I have never done this type of activity. In the same way, the students of the Bachelor of Education do not have great experience in the use of various computer programs. A high percentage have not used databases, spreadsheets and even less designed a Web page; instead, the most frequent activities for which you do not need help, or a little help, are surfing the Internet, chatting or designing a PowerPoint presentation (figure 14).

These negative results directly impact the research activities carried out by students throughout their academic career, since these are indispensable tools to carry out any research.

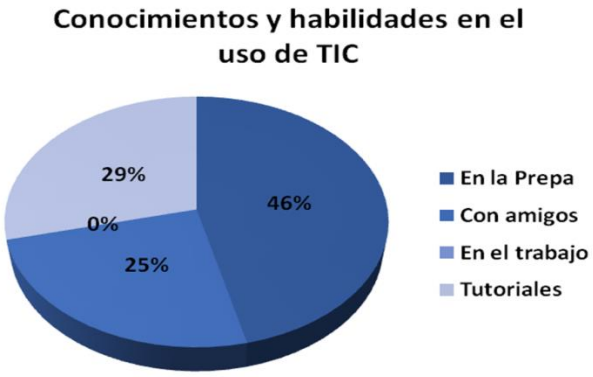
Figura 14. Experiencia en el uso de programas informáticos



Fuente: Elaboración propia

The scenarios in which students have learned to use these tools are diverse, so in question 18 you are asked to mark an option that identifies where you have obtained your current ICT skills and knowledge. Figure 15 shows the results in this regard: 46% indicates that in the upper middle level, 25% with friends and another 29% through tutorials. This means that learning spaces are more and more varied, if we take into account the percentage of students who do not have the Internet or personal computer equipment at present.

Figura 15. Lugares en los que obtuvo habilidades y conocimientos sobre TIC



Fuente: Elaboración propia

Question 20 is of particular interest for this study, which asks whether in their preparatory studies they had the opportunity to interact with some e-learning tools, and it is reflected that almost half of the students, 49%, have ventured into Internet pages, 17% have

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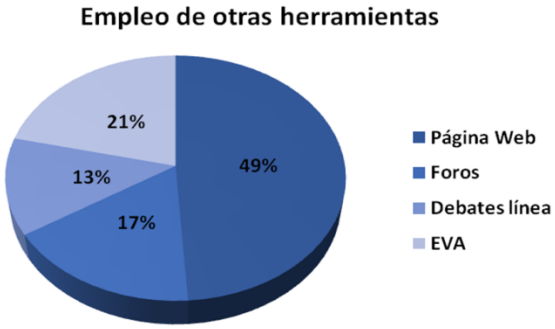
participated in forums, 21% have worked in a virtual learning classroom and 13% have established online discussions, as shown in figure 16; all of which coincides with the data provided by the students in the previous questions: less than half of the respondents have developed their competence in the use of ICT.

Figura 16. Incursión en otras herramientas de la Web



Fuente: Elaboración propia

From all of the above, it can be argued that approximately 50% of the users to whom this project is directed do not have a personal computer, nor can they have internet at home, they have had little experience in using Web resources for individual and collective work and has not developed skills in the application of some technological tools necessary for the educational level being studied.

Despite all the limitations and inconveniences that these students have presented in their competence regarding the use of ICTs, question 19 asks about the importance that ICTs have for their future profession. As can be seen in figure 17, 52% consider this knowledge to be very important and 40% consider it important; only 8% consider it of some importance. We think that these are the ones who are furthest from the technological resources in their daily lives, or who are not yet convinced of the paradigm shift of the future teacher, because they are in the first semesters of college.

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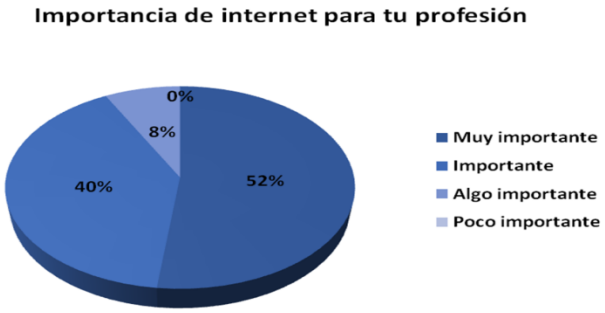
Figura 17. Importancia de las TIC en tu futura profesión



Fuente: Elaboración propia

Discussion

From everything presented above, it can be summarized that approximately 50% of the study sample does not have a personal computer, does not have internet service at home and has had little experience in using Web resources for the individual and collective work. Likewise, he has not developed skills in the application of some technological tools necessary for the educational level that he is studying, nor to develop in the current civilized world, despite the fact that he recognizes its importance for his profession.

In this regard, the United Nations Educational, Scientific and Cultural Organization [Unesco] (1996, cited in Posada, 2015) states:

> This technological revolution clearly constitutes an essential element to understand our society, to the extent that it creates new forms of socialization, and even new definitions of individual and collective identity (...). Knowledge is, just with ICT, the central element of our current civilizational structure (p. 193).

The Unesco manifesto makes clear the need for the use of technologies for the life and development of society; therefore, the responsibility of universities in the southeast to this challenge is essential.

This study is a sample of what happens in the first semesters of the Bachelor of Education from the Faculty of Educational Sciences of Unacar. The sample is undoubtedly small; however, the technological incompetence of the students is a reality. This approach will be even more interesting if the population expands to other specialties, and other

universities in the southeast are covered. We are sure that the user's profile in technology is similar.

It can be summarized that, based on the observed results, the students of the Lic. In Education from Unacar are passively connected to the Web: they prefer to receive the information and not work with it to achieve products or information because, almost in their totality, they do not know how to achieve it; and, for the same reason, they also cannot interact with other colleagues. In sum, due to their technological incompetence, they cannot play a more active role. A change in the ICT use of these students will depend on the strategies derived from these results.

Conclusions

In response to the results obtained in this study, higher education institutions in the Mexican southeast must have a commitment to the development of this competence, since if current Unacar teachers consider the intention of creating courses in virtual classrooms of Learning and using research tools with your students from the Faculty of Educational Sciences would have a great obstacle to overcome.

In the same way, short, medium and long-term strategies must be established so that students feel interest in new technology-mediated learning.

In the short term, one of the measures to alleviate the difficulties regarding the availability of resources is to create new physical spaces so that the students with the greatest digital divide have access from the institution to technological tools and the Internet.

In the medium term, it will be necessary to train teachers who, in one way or another, have lagged behind in these fields, either due to generational difference or laziness, since being an educator implies an unavoidable responsibility with society and teaching.

This implies a new way of teaching, a new way of interacting in the classroom and outside it, so the students and teachers of the Faculty of Educational Sciences of Unacar must rethink their work, acting as promoters of changes.

And in the long term, curricular models and designs in higher education centers whose face-to-face modality must incorporate extracurricular courses and workshops in the distance or blended modality to support the subjects students receive, with the aim of

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eliminating the gap digital that exists and in support of the technological competition that must prevail in the education of the 21st century.

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