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Competencia digital en niños de educación básica del sureste de México

Digital competences of children in basic education in southeastern Mexico

Competência digital em crianças na educação básica no sudeste do México

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Resumen

El avance tecnológico y sus múltiples aplicaciones han creado condiciones para que las nuevas generaciones enfrenten retos y desarrollen aptitudes y actitudes vinculadas con el uso de las tecnologías de información y comunicación (TIC). Debido a ello, necesitan fortalecer nuevas competencias digitales para facilitar su inserción en la sociedad del conocimiento. En este estudio, se describen los resultados de una encuesta sobre la manera en que emplean las TIC los niños de educación básica del municipio de Mérida, ubicado en el sureste de México. Los participantes fueron 160 niños (53 % mujeres y 47 % hombres). El estudio cuantitativo tipo encuesta tuvo un alcance descriptivo y transversal. Como principal resultado se evidenció que 78 % de los niños poseen un dominio limitado con respecto al uso de las TIC, por lo que es necesario desarrollar en ellos competencias digitales, de modo que puedan empelar de forma responsable el Internet en sus actividades académicas.

Palabras clave: competencias digitales, educación básica, nativos digitales, TIC.

Abstract

Technological progress and its multiple applications have created conditions for a generation that is constantly facing challenges, developing skills and attitudes related to the use of Information and Communication Technologies (ICT). The new generations need to strengthen their digital skills to facilitate their insertion into the knowledge society This article describes the results of a survey on the use of ICT by children in basic education in the municipality of Mérida in southeastern Mexico. The participants were 160 children (53% were women and 47% men). The quantitative survey study was descriptive with a transversal scope. The main findings evidenced that 78% of children have a limited domain with respect to the use of ICT, it is necessary to develop their digital skills, including the responsible use of the Internet for their academic activities.

Keywords: digital skills, basic education, digital natives, ICT.

Resumo

O progresso tecnológico e suas múltiplas aplicações criaram condições para as novas gerações enfrentarem desafios e desenvolverem habilidades e atitudes relacionadas ao uso das tecnologias da informação e comunicação (TIC). Por isso, eles precisam fortalecer novas habilidades digitais para facilitar sua inserção na sociedade do conhecimento. Neste estudo, são descritos os resultados de uma pesquisa sobre como as TICs utilizadas por crianças no ensino fundamental no município de Mérida, localizado no sudeste do México, são descritas. Participaram 160 crianças (53% mulheres e 47% homens). O estudo do tipo quantitativo de pesquisa teve escopo descritivo e transversal. Como resultado principal, ficou evidenciado que 78% das crianças possuem um domínio limitado no que diz respeito ao uso das TIC, sendo necessário desenvolver habilidades digitais nelas, para que possam usar a Internet de forma responsável em suas atividades acadêmicas.

Palavras-chave: habilidades digitais, educação básica, nativos digitais, TIC.

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Introduction

At present, the use of ICTs is an indispensable requirement for training, working in the workplace and approaching other cultures and societies. This global trend has made Mexico, through the Ministry of Public Education (SEP), promote different educational projects that provide technology to classrooms, among which the COEEBA (Electronic Computing in Basic Education) program can be mentioned , characterized by promoting computer workshops and laboratories for teachers. Likewise, the Red Escolar project stands out, implemented in 1996 based on a pedagogical model that sought to massify the use of ICT in all elementary grades.

Later, in 2004, the Enciclomedia program was implemented, which proposed the digitalization of textbooks and was aimed at children in fifth and sixth grade. Then, in 2009, the digital skills for all program was finalized, an initiative that boosted the development of technologies in elementary schools to support student learning, develop their digital competencies and favor their insertion in the knowledge society (SEP , 2009).

Subsequently, in 2013, the Government of Mexico implemented two more initiatives: the pilot program of digital inclusion in the states of Morelos, Guanajuato and Querétaro (through which laptops were granted to students), and the MiCompu.mx program in the states of Sonora, Tabasco and Colima, which focused on improving, through the use and use of the personal computer, the study conditions of children, the updating of teaching methods, the strengthening of teaching groups, the revaluation of Public school and the reduction of digital and social gaps between families and communities that make up the country (Linarez, 2014).

Also, in 2014, the Digital Inclusion and Literacy Project (PIAD) of the Government of Mexico entered its second stage within the @ prende.mx program, in which personal computers were exchanged for tablets. This initiative sought to explore new ways to enhance digital skills by promoting collaborative work in classrooms. Specifically, it was intended that both children and teachers use the digital technology in a coordinated way to optimize the teaching and learning processes (SEP, 2016). This program was aimed at reducing the digital divide, which is generated when only a sector of the population has the tools and skills to use technological resources. The beneficiaries of this program were the fifth year primary school students, as well as the teachers responsible for said groups (SEP, 2016). In the case of the state of Yucatán, the tablets were delivered to municipalities such as Mérida, Tizimín, Valladolid, Ticul, Izamal and Peto. These devices had preloaded academic content on topics as diverse as nutrition, personal data care, family economics, health, archaeological areas of the country, among others. (Gobierno del Estado de Yucatán, 2015).

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Subsequently, in 2017, the third phase of the SEP Digital Inclusion and Literacy Program was implemented under the name of @prende 2.0. This new version of the @ prende.mx program took into account international experiences regarding the use of technologies and complied with the five dimensions defined by Unesco to achieve quality education; These dimensions were relevance, relevance, equity, effectiveness and efficiency. In this way, the @prende 2.0 program focused on promoting technology as an essential tool to achieve academic objectives (SEP, 2016).

In summary, it can be affirmed that the technological programs implemented by the Government of Mexico have been diverse in order to reduce the digital divide; However, the reports published on these initiatives agree that there is a need for pedagogical training for the use of ICT (Glasserman and Manzano, 2016). For this reason, there is a need to identify the level of ICT mastery of children in basic education in order to propose recommendations that allow the development of their digital skills.

Education and technology

Currently, society faces accelerated changes and profound transformations that have an impact on educational processes. The integration of ICTs and their impact in the social, labor and academic fields impose challenges in the conception of educational processes (SEP, 2006). It has been demonstrated that the use of technology impacts the improvement of teaching and learning processes, since it allows the construction of virtual educational environments that favor educational innovation (Salinas, 2008).

At the level of basic education, different strategies have been carried out in order to optimize student learning and involve teachers in the use of new teaching modalities. One of these strategies is based on the use of ICT in the classroom to digitally literate students and teachers of this educational level (Díaz, Rodríguez, Sánchez, Rivera and Ramírez, 2015). Considering that the new generations of students are digital natives, a great challenge is generated for teachers, who should familiarize students with these resources that represent an essential complement to training (Marchesi, Tedesco y Coll, 2010).

ICT in basic education

ICTs are the result of a digital revolution that increasingly occupies a more prominent place in classrooms. That is why more and more countries join the task of promoting digital literacy through different government programs. The incorporation of ICT in educational processes implies considering them both in the definition of the curriculum and in the design, as well as in the implementation of pedagogical strategies and didactic resources that support the development of new learning, skills and relations with knowledge (Santiago, Caballero, Gómez and Domínguez, 2013).

In several Latin American countries, as well as in Mexico, these digital literacy plans have been promoted at an early age. The objectives have been the proper functioning of the available digital computing resources (both hardware and software), connectivity and Internet access, pedagogical strategies (which result in the promotion of a type of interaction between users and ICTs), the digital skills of teachers and students, as well as the motivation towards the appropriate use of technology and the time available in each class to introduce this type of resources (Santiago et al., 2013).

Today, in Mexico the vast majority of public elementary schools have new resources and tools to expand and strengthen the learning of children and adolescents, since, as described above, this country has established the incorporation of ICT in the teaching and learning processes. For example, studies carried out in the municipality of Mérida (Yucatán) regarding digital competence point out that 86% of students use the Internet as support to carry out various academic activities.

However, it has also been indicated that the advantages that information and media technologies can offer are not taken advantage of to create more interesting and flexible scenarios that can help the development of digital skills (SEP, 2009). In this regard, Domínguez, Cisneros and Quiñonez (2019) - in their research conducted in a Mayan community in Yucatan - point out that although the Internet provides various educational benefits, children and young people in Maya-speaking communities have little information. and preparation regarding the use of these tools.

Even so, it has also been shown that the use of mobile devices in the municipality of Mérida (Yucatan) has begun to be more common, hence the importance of having validated and reliable instruments to gather truthful and accurate information that allows, subsequently , design and apply interventions that help the development of digital competence of students of the basic level (Bayona, Zapata, Quiñonez y Canto, 2017; Zapata, Quiñonez y Canto, 2017).

Digital competence

The emergence of the Internet and new technologies have generated a revolution in the way information is disseminated, which has served as a basis for coining the term knowledge society (Flores and Roing, 2016). In this context, the development of digital skills is increasingly necessary, which are defined by Unesco (March 21, 2018) as a "spectrum of skills that facilitate the use of digital devices, communication applications and networks to access information and carry out better management of these "(para. 3).

However, the various uses that can be given to ICTs within the education system have also generated new challenges that cannot be overlooked (Pérez, 2010). This means that technological training must transcend simple technological training to deepen the understanding of the importance of ICT as a media for the achievement of teaching and learning; This is known as digital literacy.

In this sense, Gutiérrez (2012) explains that the role of teachers - due to the abundance of available content - must change from being an information provider to being a learning facilitator. In addition, the update process must now be continuous due to the speed with which the information becomes obsolete. The teacher, therefore, must be trained in learning to learn as part of his professional training throughout his life and must be aware of the new profile of current students (known as digital natives), whose characteristics can be summarized as this way: they receive information very quickly, they carry out processes in parallel (that is, they can complete multiple tasks at the same time), they prefer graphics instead of written texts, they put random processes (typical of hypertextuality), they work better online and prefer games instead of "serious" work (Prensky, 2001).

For this reason, students of this era need training that is immersed in the technological world and that proposes new ways of learning and approaching information, forcing teachers to get an update on the use of ICT.

Method

This research was based on a quantitative and descriptive approach, as it was attempted to determine how a certain phenomenon manifests itself in a given context. Likewise, this can be considered a cross-sectional study, since the measurement and collection of data was carried out in a single moment in time (Hernández, Fernández and Baptista, 2013). For this, a survey was used that allowed to gather information about people's opinions and attitudes (Isaac and Michael, 1995). According to González, Calleja, López,

Padrino and Puebla (2009), survey-type studies are useful for describing and predicting an educational phenomenon and for obtaining a first contact with reality (figure 1).

Figura 1. Diseño del estudio tipo encuesta

Fuente: Arnau (1995)

Following the phases of the survey-type study proposed by Arnau (1995), in the first stage the objective of the study was raised, that is, to describe the digital competence of children in basic education belonging to the municipality of Mérida (Yucatán), specifically as regards concerning information management, communication and collaborative learning, digital citizenship and creativity and innovation.

In the second stage - for the selection of participants - a non-probabilistic sampling was carried out for convenience (Casal and Mateu, 2003), for which the following criteria were taken into account: being a minor, being a sixth grade student elementary school and have participated in the @ prende.mx program. In short, the sample was made up of 160 children.

In the third stage (data collection) the instrument was developed, which was devised taking into account the digital skills standards set by the general coordination of the @ prende.mx program (Villegas, Mortis, García and Del Hierro, 2017). In the first section of the instrument, participants were asked for general information. In the second, they were asked about the number of hours they were connected to the internet and the applications they had installed on their mobile devices. The third and final section was made up of 23 items, which were grouped into four dimensions focused on the use of ICT:

1. Information management: Refers to the use of digital tools to collect, select, analyze, evaluate and use information, as well as to process data and communicate results.
2. Communication and collaborative learning: This dimension focuses on the use of digital media and environments to communicate ideas and information to a multiple audience, as well as to interact with others and work collaboratively.
3. Digital citizenship: It requires the understanding of human, cultural and social issues related to the use of ICT and the application of ethical, legal, safe and responsible behaviors in its use.

4. Creativity and innovation: It is linked to creative thinking, product development and innovative processes using ICT and knowledge building.

Figura 2. Apartado del instrumento enfocado en el *Modo en que los estudiantes hacen uso de las TIC*

El modo que los estudiantes hacen uso de las TIC

1. Nunca (N)	2. Rara vez (RV)	3. Frecuentemente (F)	4. Siempre (S)
			

Manejo de la información	
1	Utilizo Internet para hacer mi tarea
2	Busco información relacionada con temas o actividades vistas en clase
3	Busco temas de mi interés en Internet
4	Utilizo materiales digitales precargados en mi tableta para hacer mis tareas escolares
5	Utilizo materiales digitales interactivos como juegos, simuladores, etc. para mi entretenimiento
6	Comparto lo que encuentro en internet con compañeros, maestros o familiares
7	Guardo archivos, fotos, etc. en OneDrive, Dropbox, Google Drive o iCloud
Comunicación y aprendizaje colaborativo	
8	Público y comparto ideas, opiniones o imágenes de manera respetuosa en redes sociales
9	Algún adulto (padres o maestros) está pendiente de la información que publico y comparto en las redes
10	Hago trabajos en equipo usando la tableta
11	Hago visitas virtuales a museos, ciudades o países para conocer de arte y cultura
12	Utilizo redes sociales (WhatsApp, Facebook, Instagram etc.) para comunicarme o intercambiar información sobre temas de la escuela
13	Utilizo redes sociales (WhatsApp, Facebook, Instagram etc.) para comunicarme o intercambiar información con amigos o familiares
Ciudadanía Digital	
14	Utilizo los dispositivos móviles (celular, tableta, laptop) de manera limitada y bajo supervisión
15	He visto en Internet sitios, videos e imágenes que expresen violencia y utilicen un lenguaje ofensivo
16	Mantengo una interacción respetuosa y cordial promoviendo una sana convivencia en las redes sociales
17	Hago bromas, burlas o juegos a mis compañeros o amigos a través de las redes sociales
18	Me han burlado, insultado o rechazado a través de las redes sociales
19	Recibo información sobre el uso seguro y responsable de los dispositivos móviles
Creatividad e innovación	
20	Expreso mis ideas mediante la creación de audio, video, imágenes, texto
21	Creo mapas conceptuales en la tableta para organizar información e ideas
22	Utilizo los software o contenidos precargados en la tableta
23	Selecciono y guardo mis trabajos como muestra de mis avances digitales

Fuente: Elaboración propia

As observed in the previous figure, the scale of the instrument was Likert type, with the following response options: never, rarely, frequently and always; This type of scale is one of the most used formats when you want to ask several questions that share the same response options (Cea D'Ancona, 2001).

As part of the psychometric analysis performed on the instrument to determine its reliability and validity, the reagent discrimination test was performed comparing the scores in each of these. Based on the data obtained, it was determined that participants whose scores were above the 75th quartile would be considered digital competent; On the other hand, if they obtained scores below the 25th quartile, they would be considered deficient in terms of digital competence. This statistical process was performed through a t-test for independent samples (table 1).

Tabla 1. Prueba de discriminación de reactivos

Reactivos	***t***	***p***
Utilizo Internet para hacer mi tarea.	-4.642	0.000
Busco información relacionada con temas o actividades vistas en clase.	-2.203	0.030
Busco temas de mi interés en Internet.	-4.320	0.000
Utilizo materiales digitales precargados en mi tableta para hacer mis tareas escolares.	-4.392	0.000
Utilizo materiales digitales interactivos como juegos, simuladores, etc., para mi entretenimiento.	-4.303	0.000
Comparto lo que encuentro en Internet con compañeros, maestros o familiares.	-3.032	0.003
Guardo archivos, fotos, etc., en OneDrive, Dropbox, Google Drive o iCloud.	-6.863	0.000
Público y comparto ideas, opiniones o imágenes de manera respetuosa en redes sociales.	-4.410	0.000
Algún adulto (padres o maestros) está pendiente de la información que publico y comparto en las redes.	-6.833	0.000
Hago trabajos en equipo usando la tableta.	-8.295	0.000
Utilizo redes sociales (WhatsApp, Facebook, Instagram, etc.) para comunicarme o intercambiar información sobre temas de la escuela.	-3.242	0.002
Utilizo redes sociales (WhatsApp, Facebook, Instagram, etc.) para comunicarme o intercambiar información con amigos o familiares.	-6.774	0.000
Utilizo los dispositivos móviles (celular, tableta, *laptop*) de manera limitada y bajo supervisión.	-5.210	0.000
He visto en Internet sitios, videos e imágenes que expresen violencia y utilicen un lenguaje ofensivo.	-2.710	0.008
Mantengo una interacción respetuosa y cordial promoviendo una sana convivencia en las redes sociales.	-4.538	0.000
Hago bromas, burlas o juegos a mis compañeros o amigos a través de las redes sociales.	-5.864	0.000
Me han burlado, insultado o rechazado a través de las redes sociales.	-3.853	0.000
Recibo información sobre el uso seguro y responsable de los dispositivos móviles.	-10.881	0.000
Expreso mis ideas mediante la creación de audio, video, imágenes, texto.	-8.741	0.000
Creo mapas conceptuales en la tableta para organizar información e ideas.	-5.529	0.000
Utilizo los *softwares* o contenidos precargados en la tableta.	-10.881	0.000
Selecciono y guardo mis trabajos como muestra de mis avances digitales.	-8.741	0.000
Utilizo programas gratis por Internet para realiza alguna actividad de gusto personal.	-5.529	0.000

Fuente: Elaboración propia

From the analysis of the results obtained in Table 1 it was determined that the reagents do discriminate, since the value of significance (p) was less than 0.05. Also, the statistical test called Cronbach's alpha was run and a value of 0.808 was obtained, a result that demonstrated the reliability of the questionnaire. In this regard, George and Mallery (2003) point out that a coefficient of alpha equal to or greater than 0.8 indicates that the instrument is reliable.

The data was collected in the facilities assigned for the research project and it was through the questionnaire that was administered in a single moment. The instrument was answered in paper and pencil format. The process had the collaboration of sixth grade children, instructors and the person in charge of the investigation. The instructors were in

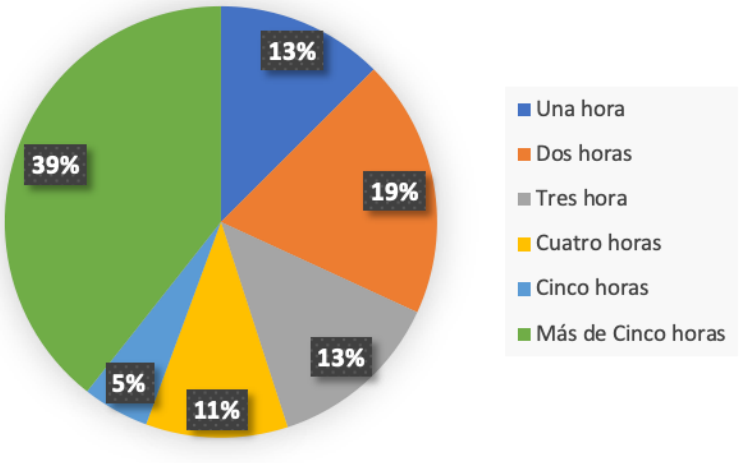
charge of providing the questionnaires and giving instructions to answer them. The person in charge of the investigation communicated the purpose of the questionnaire and asked the respondents for their complete sincerity for each of the answers; Similarly, he was always aware of the doubts or comments that may arise during the administration of the instrument.

In the fourth phase, the data obtained through the Statistical Package for the Social Sciences (SPSS) program was coded and analyzed. As a result, descriptive statistics tests were performed in which percentages and frequencies of the data were achieved. This analysis allowed to determine the level of digital competence regarding the management of information, communication and collaborative learning, digital citizenship and creativity and innovation. Likewise, the Student's t-test was carried out for independent samples, which allowed us to detect if there was a difference between boys and girls regarding the frequency of ICT use and the hours they used the Internet on a daily basis. Bar graphs were also made with some reagents of the instrument with the objective of consolidating the results regarding the level of digital competence in basic education children.

Results

In this first part of the results it is indicated that the quantitative instrument was answered by 160 basic education students: 47% boys and 53% girls. When analyzing the results obtained, it could be shown that 96% of respondents have a smart cell phone. Another important fact is that 59% of students use their mobile devices 6 to 7 days a week, while only 12% use it 1 day a week. It was also evident that 39% of students surf more than 5 hours on the Internet, while 13% do so 1 hour a day (figure 3).

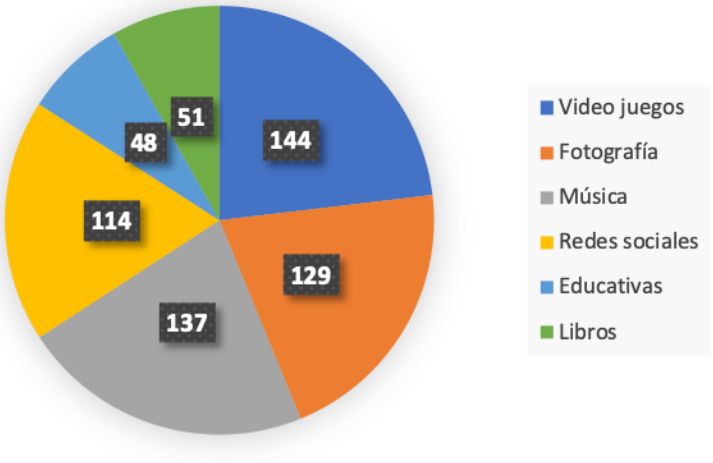
Figura 3. Porcentaje de uso del Internet por día



Fuente: Elaboración propia

On the other hand, it was known that 144 of the respondents use video game applications on their mobile devices, and only 48 use educational applications (figure 4).

Figura 4. Distribución del uso de las aplicaciones



Fuente: Elaboración propia

However, in this second part of the research figures are presented to analyze the level of mastery of the use of ICT of the students consulted. For this process, the categorization was determined based on what was mentioned by Quiñonez, Zapata and Canto (2018) around the percentage of the domain of the use of ICT, that is, if less than 70% of the population is located in the level high on the scale (frequently and always), the evaluated item would be considered for future interventions (table 2).

Tabla 2. Nivel de competencia digital de los niños de educación básica

Aspecto evaluado	***Alto %***
Utilizo Internet para hacer mi tarea.	48.1
Busco información relacionada con temas o actividades vistas en clase.	82.5
Busco temas de mi interés en Internet.	43.8
Utilizo materiales digitales precargados en mi tableta para hacer mis tareas escolares.	32.5
Utilizo materiales digitales interactivos como juegos, simuladores, etc., para mi entretenimiento.	48.8
Comparto lo que encuentro en internet con compañeros, maestros o familiares.	59.3
Guardo archivos, fotos, etc., en OneDrive, Dropbox, Google Drive o iCloud.	53.1
Público y comparto ideas, opiniones o imágenes de manera respetuosa en redes sociales.	38.1
Algún adulto (padres o maestros) está pendiente de la información que publico y comparto en las redes.	46.8
Hago trabajos en equipo usando la tableta.	70.0
Utilizo redes sociales (WhatsApp, Facebook, Instagram, etc.) para comunicarme o intercambiar información sobre temas de la escuela.	41.3
Utilizo redes sociales (WhatsApp, Facebook, Instagram, etc.) para comunicarme o intercambiar información con amigos o familiares.	61.2
Mantengo una interacción respetuosa y cordial promoviendo una sana convivencia en las redes sociales.	68.7
Expreso mis ideas mediante la creación de audio, video, imágenes, texto.	56.2
Creo mapas conceptuales en la tableta para organizar información e ideas.	71.2
Utilizo los *softwares* o contenidos precargados en la tableta.	56.2
Selecciono y guardo mis trabajos como muestra de mis avances digitales.	55.0
Utilizo programas gratis por Internet para realizar alguna actividad de gusto personal.	71.2

Fuente: Elaboración propia

Based on the results in Table 2, it can be said that 78% of the elementary school children who participated in this work are below 70%, which means that they have a limited level with respect to mastery in the use of TIC. Consequently, it is necessary to design interventions that develop digital competencies in them, for which aspects such as the following can be taken into account: use of the Internet for academic activities, responsible use of networks, development of resources to express ideas through audio , video, images, etc.

The items that were equal to or above 70% - and that are not considered for a possible intervention - were those related to collaborative work mediated by technology, searches for information related to school assignments, use of free applications to perform activities of taste personal and organization of information through concept maps in digital format. This indicates that students mostly perform these actions frequently or always through ICT.

The third part of the analysis of the results is presented below. In this, the frequency of use of ICTs per week and the full hours that use the Internet on a daily basis are compared by gender. As can be seen in Table 3, there was no significant difference between the means of the two groups, since both boys and girls score similarly in relation to the frequency with which they use ICT per week (value of p> 0.05). This means that both use ICT with the same frequency.

Tabla 3. Comparación por género de la frecuencia de uso de las TIC

T	***gl***	***P***
-0.381	42	0.705

Fuente: Elaboración propia

Table 4 shows that there was no significant difference between the means of the two groups, since both boys and girls score similarly with respect to the full hours they use the Internet on a daily basis (p value> 0.05). This means that both use the Internet the same periods.

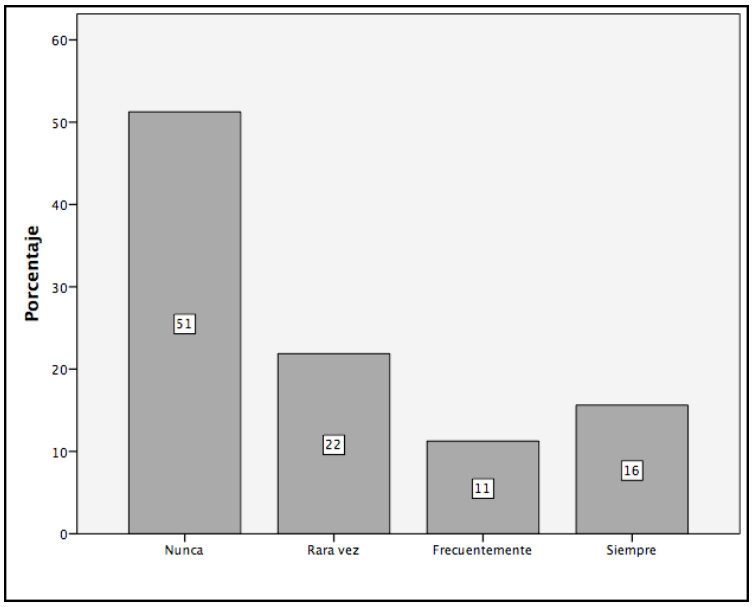
Tabla 4. Comparación por género de las horas completas que utilizan el Internet a diario

T	***gl***	***P***
-0.134	49	0.894

Fuente: Elaboración propia

Finally, the fourth part of the statistical analysis is presented to consolidate the information presented above and to propose strategies and future interventions that allow the development of digital skills in children in basic education. Next, the results obtained in some reagents that integrated the digital citizenship dimension are described. The first reagent responds to the statement I use mobile devices (cell phone, tablet, laptop) in a limited way and under supervision (figure 5).

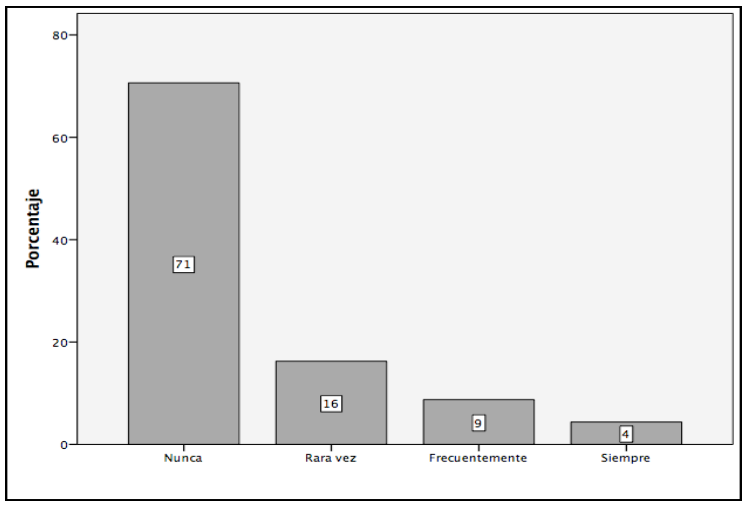
Figura 5. Porcentaje de respuestas al reactivo *Utilizo los dispositivos móviles (celular, tableta, computadora portátil) de manera limitada y bajo supervisión*



Fuente: Elaboración propia

Based on the answers provided in the previous figure, it can be stated that 73% of students never or rarely use mobile devices in a limited way and under supervision. In the second reagent students were asked to respond based on the statement I have seen on the Internet sites, videos and images that express violence and use offensive language (Figure 6).

Figura 6. Porcentaje de respuestas al reactivo *He visto en Internet sitios, videos e imágenes que expresen violencia y utilicen un lenguaje ofensivo*



Fuente: Elaboración propia

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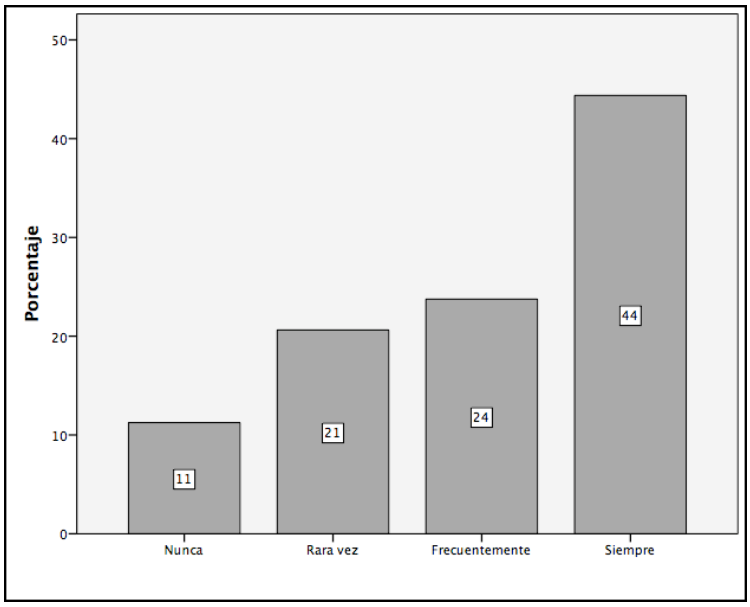
Taking into account the answers obtained in Figure 6, it can be said that 87% of students have never or rarely seen images or videos with offensive languages. In the third reagent students were asked to respond based on the statement I make jokes, teasing or games to my classmates or friends through social networks (figure 7).

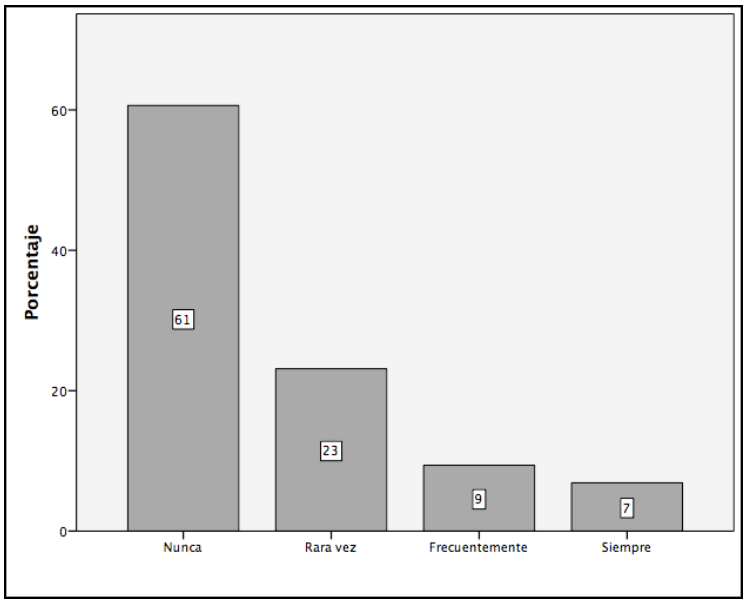
Figura 7. Porcentaje de respuestas al reactivo *Hago bromas, burlas o juegos a mis compañeros o amigos a través de las redes sociales*



Fuente: elaboración propia

As can be seen in Figure 7, 68% of students frequently or have always joked or made fun of their classmates or friends through social networks. In the fourth reagent, students were asked to respond based on the statement They have mocked, insulted or rejected through social networks (Figure 8).

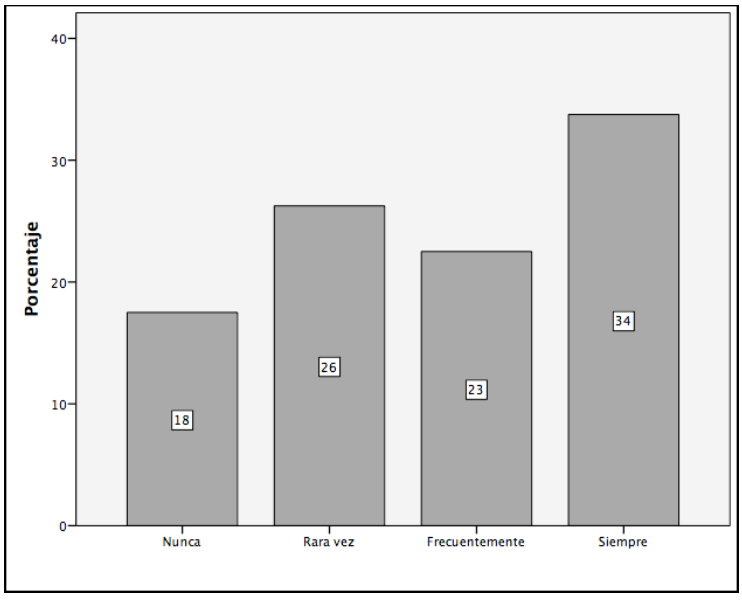
Figura 8. Porcentaje de respuestas al reactivo *Me han burlado, insultado o rechazado a través de las redes sociales*



Fuente: Elaboración propia

Based on the results in Figure 8, it can be said that 84% of students have never or rarely been mocked, insulted or rejected through social networks. In the last reagent of the aforementioned dimension, students were asked to respond based on the statement. I receive information on the safe and responsible use of mobile devices (Figure 9).

Figura 9. Porcentaje de respuestas al reactivo *Recibo información sobre el uso seguro y responsable de los dispositivos móviles*



Fuente: Elaboración propia

As seen in Figure 9, 44% of students have never or rarely received information regarding the safe and responsible use of mobile devices.

Discussion

As it could be seen in the results, all children who participated in this study use ICT from an early age, hence they are considered as digital natives (Presnky, 2001). In fact, and more specifically, it can be said that 90% of them use applications for entertainment (e.g., video games), while only 30% use educational applications, hence the potential of these tools is wasted To stimulate learning. In this regard, Marchesi et al. (2010) point out that students should value the use of technologies as an important media for training.

Likewise, it was possible to verify in the study that 78% of the participants do not have a domain around the use of ICT, so it is necessary to develop in them digital skills so that they can take advantage of the Internet in academic activities, as well as so that Use networks responsibly when using them to express your ideas. On this element, it is worth noting the idea of Aviram (2002, cited by Marquis, 2012), who underlines the importance of training in the use of ICT from the technocratic, reformist and holistic scenarios so that students from the basic levels value technologies as media to consolidate their academic development.

On the other hand, in the analysis carried out to the dimension of the digital citizenship questionnaire, it was shown that 73% of students use their mobile devices unlimited and without adult supervision. Likewise, it was found that 68% of students frequently or always make jokes or make fun of their classmates or friends through social networks. These figures serve to deepen the risks underlying the use of technologies and the Internet when adequate supervision is not provided. In this sense, Echeburúa and De Corral (2010) mention that the Internet and social networks can be used for users to access inappropriate or violent content, which can incite or trigger ethically reprehensible behavior.

Taking into account what has been analyzed, awareness should be created about the good use of ICT in children in basic education to develop digital skills that help them in their academic training. In this way, current situations that undermine students' self-esteem can be prevented, as is the case with online bullying.

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Conclusions

As it was observed in this work, the SEP has implemented over time various programs that promote the use of ICTs with the aim of developing digital skills in basic education students. However, these initiatives have not had the expected success, since - as demonstrated in this work - 78% of the children of the basic level consulted have a limited domain of ICT and do not usually make responsible and ethical use of these technologies.

Therefore, it is essential that training spaces be generated for both students and teachers of the basic level, as the responsible use of ICTs should be encouraged, as well as consolidate digital literacy strategies to take advantage of the benefits offered by the Internet in the fulfillment of school assignments.

On the other hand, the results show that there are no significant differences in terms of sex, frequency of use of ICT and the hours per day that connect to the Web. Therefore, it can be inferred that both boys and girls have the same opportunities to access and use these technologies. Therefore, teachers and basic education authorities are encouraged to promote the academic use of ICTs inside and outside the classroom. For this, of course, the training processes of teachers in the use of mobile devices for academic purposes must be consolidated, as well as aligning school activities with the objectives of the Institutional Program of Digital Literacy (PIAD), as this describes activities to promote learning and to promote the development of thinking skills. In summary, it should be taken into account that the development of digital and ethical competences depends largely on the actions carried out by teachers and educational authorities.

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