Parental supervision in the use of ICT resources in schoolchildren in basic education

Supervisión parental en el uso de recursos TIC en escolares de educación básica

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Abstract
This research focuses on the guidance and supervision that should be provided both at home and at school to the use and activities that students carry out with ICT. A qualitative approach was adopted by applying various techniques such as observation, interviewing and focus groups. It was determined that students have continuous access to the Internet, without any supervision as a result of the technological illiteracy manifested by their parents.
key words: ICT resources, technological illiteracy, basic secondary education, puberty.

Resumen
Esta investigación centra su atención en la orientación y supervisión que se debe realizar tanto en casa como en el colegio al uso y a las actividades que los estudiantes realizan con las TIC. Se adoptó un enfoque cualitativo aplicando diversas técnicas como la observación, la entrevista y los grupos focales. Se logró determinar que los estudiantes tiene acceso continuo a internet, sin supervisión alguna como consecuencia del analfabetismo tecnológico manifestado por sus padres.
Palabras clave: recursos TIC, analfabetismo tecnológico, educación básica secundaria, pubertad.

1. Introduction

From the 20th century forward, people began to talk about the information, knowledge and/or communication society as a result of the ease of access provided by information and communication technologies - ICTs (López-García & Gutiérrez-Niño, 2018). Each and every aspect of the life of human beings and society has been permeated by the influence of these technologies, leading to a process of transformation that has changed our ways of communicating and interacting with many of their effects (Barrios, 2009).

Bonder (2008) studies the imaginaries that revolve around the use of ICTs as a condition of social acceptance among people, but highlights that at the beginning ICTs were associated mainly with the use of a computer with Internet access, but little by little in this process of massification in its use, smartphones have been incorporated as a portable resource that offers connectivity that facilitates access to data and information of interest almost in real time 24 hours a day, every day of the year, as referred to in Pérez's (2018) research which focused on

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primary school students who give it recreational use, while Vázquez-Cano & Servillano (2015) reached different conclusions since the university students consulted claim that its use is more academic, while in Alcívar & Guacho's (2017) research if there is evidence of misuse also in university students; what is evident is the level of penetration of this ICT resource regardless of the age of the user.

Since these portable devices allow the human being to have within reach the information search engines, offering diverse tools for the communication and interaction with other people, without forgetting that a significant group of people are giving a bad use to these technological devices, especially children and young people are harmed (Alcívar & Guacho, 2017). Some of the abuses observed correspond to the excessive use of these devices without adult supervision, which has exposed this age group to all kinds of risks on the Internet, such as cyberbullying and cyberaddiction (Giménez et al., (2017); Henning et al., (2019).

The purpose of this work is to analyze the supervision and control of parents over the use of ICTs in sixth grade children in a private educational institution in the city of Cúcuta, where it was previously possible to corroborate that they all made use of at least one ICT resource.

1.1. Overview of the situation

The United Nations Children's Fund (UNICEF, 2017) in its report The State of the World's Children 2017: Children a Digital World, says:

> Although ICT has made it easier for children to connect with each other and share experiences online, it has also facilitated the use of these new connectivity and communication channels for online bullying, with a much wider reach and therefore a higher risk than offline bullying. Similarly, they have increased the potential for abuse and exploitation of children's privacy, and changed the way children regard their own private information. (p. 11.)

According to the above, it is evident that the use of technological devices has brought both benefits and risks for minors, therefore, a part of this research seeks to identify the uses that informants have given to these resources and whether in their experience they have been exposed to any type of risk.

One of the main challenges facing the education sector in our country is to guarantee quality education, improve the efficiency of education systems and ensure the equity of the system through the implementation and use of ICT as an interactive tool (Cárdenas, 2010; Sunkel et al., {2014).

Based on the above, the Economic Commission for Latin America and the Caribbean (ECLAC), cited by Sunkel & Trucco (2010), proposes in its document entitled New information and communication technologies for education in Latin America: risks and opportunities, the fulfilment of at least three dimensions in this process of educational integration.

The first dimension is *ICT and the Quality of Education*, where the relationship between the type of use of technology and learning outcomes in the various subjects is analysed. In this regard, positive results have been found when these uses of technology are dedicated to facilitating the learning of specific concepts. ICT has to some extent facilitated greater efficiency and openness of schools and the development of greater collaboration within and outside schools. The impact of ICT on school management can be seen in the promotion of greater collaborative work between teachers; in the increased efficiency of teachers in planning and preparing their daily work; in supporting a range of administrative activities within the school, including attendance, assessment records, reporting to parents, financial administration and information exchange between the team; and, albeit to a lesser extent, greater communication between the school and the student's home.

The second dimension corresponds to the *school and pedagogical conditions in which ICTs are used*. Here, it has been observed that it is very important that the conditions of access are adequate, that the abilities, attitudes, and visions of teachers allow for the integration of these technologies into the curriculum, and also that the school has leadership and administration that facilitates the use of ICTs in all disciplines. In addition, an institutional commitment is required to generate the necessary conditions and guidelines for the use of ICTs in schools.

With regard to the pedagogical integration of ICTs into the teaching process, a significant tension can be generated for the teacher and the traditional organization of pedagogical work in the classroom, especially because of the dynamics of autonomous and individualized learning that these technologies incorporate. Due to the fact that, when faced with ICTs and curriculum management, ECLAC (cited in Sunkel & Trucco, 2010), states that ICTs have generated some changes in the way in which the curriculum is taught and organized. In this regard, the emergence of:

> What are called virtual collaborative learning environments. The importance of connectivity, intranets and networks in schools and educational institutions has reinforced the recognition that digital technologies can support virtual teaching and learning environments that replace or complement classroom work. (p. 17)

As a third dimension, the *Social Impact of ICTs* is considered, which focuses on the role played by the social and individual characteristics of the student in their appropriation and form of use of technologies. It can be highlighted that this dimension is a strategic field to activate virtuous synergies in which social integration is benefited by public policy programs. The equity approach is a crucial aspect for understanding the contribution of ICTs in the educational process to the reduction of the digital divide in disadvantaged social groups. Also key is a sociocultural approach that examines changes in social relations as well as the effects of social capital on the exploitation of the opportunities provided by new technologies. On the other hand, family dynamics can also be transformed when students' digital skills develop more rapidly among themselves and acquire a role as bearers and transmitters of a type of knowledge. This implies reversing traditional roles of parents as vertical transmitters of knowledge, strengthening the school education process, which can produce tensions especially in those households in more disadvantaged social sectors.

Therefore, the new digital gap refers not only to the need to consider differences in terms of access to ICTs, but also to the development of functional management skills in terms of the capacities of students from different socio-cultural contexts and individual characteristics to make effective use of technologies for their learning (Sunkel & Trucco, 2010; Escribano, 2017).

1.2. Some standards that support the incorporation of ICT

Table 1 mentions some international and national standards through which the incorporation of ICTs in the daily life of society is reinforced..

Table 1
Some standards associated with ICT

Standard	Description
International The use of new technologies and human rights (2016)	It addresses the challenges of freedom of expression in the face of new technologies; the protection of privacy and personal data on the Internet; guaranteeing human rights in the digital environment; free software as a tool for the exercise and defence of rights on the Internet; new technologies as tools for the dissemination of non-discrimination and inclusion; as well as guaranteeing social coverage and the right of access to ICTs (p. 3).
International (Federal Law on Telecommunications and Broadcasting, 2014, art. 189 and 190)	In Mexico, the Constitution recognizes the right of access to information and communication technologies, but the country has a low rate of population with access to the Internet. The neutrality of the network is also recognized at the constitutional level, but practices contrary to these principles have been documented.
National (Law 1341, 2009, art. 3, 5, 7 and 15)	Which defines principles and concepts on the information society and the organisation of information and communication technologies - ICT -, establishes the national spectrum agency and lays down other provisions.
National Law 679 (2001). Control of child pornography on the Internet.	By means of which Law 679 of 2001, on combating exploitation, pornography and sexual tourism with children and adolescents, is added to and strengthened.
National Law 1286 (2009). Universalization of ICT, National System of Science and Technology, Colciencias, productive development.	By which Law 29 of 1990 is modified, Colciencias is transformed into an Administrative Department, the National System of Science, Technology and Innovation in Colombia is strengthened and other provisions are issued.
National Law 1341 (2009). Information Society	By which Principles and Concepts on the Information Society and the Organization of Information and Communication Technologies -ICT- are defined, the National Agency of Spectrum is created and other provisions are dictated.
National Law 1273 (2009). Information and data protection	By means of which the Criminal Code is modified, a new legal asset is created - called "Information and Data Protection" - and the systems that use information and communication technologies are fully preserved, among other provisions.

Source. Own elaboration

2. Methodology

The research implemented the qualitative approach, as stated by Bonilla-Castro & Rodriguez (1997) is one that "...attempts to make a global approach to social situations in order to explore, describe and understand them in an inductive manner... assuming that individuals interact with others in their social context by sharing the meaning and knowledge they have of their reality" (p. 55). Phenomenology is used as a research method because it is social in nature (Aguirre-García & Jaramillo-Echeverri, 2012).

2.1. Population and sample

The educational institution where the research was developed offers all grades from Sixth to Eleventh at its headquarters. There are several courses in each grade, and the population is made up of all the students enrolled in 2019.

For the selection of the sample of students, a two-stage sampling is applied. Initially, non-probability sampling is used, since the focus is on working with sixth grade students, since they are in the process of adapting to the

dynamics of secondary education, where each discipline is taught by a different teacher, this aspect is contrary to the predominant one in primary school where a single teacher has the responsibility to guide at least 80% of the academic load of the course; additionally these students are experiencing changes in their bodies associated with the arrival of puberty which makes them more vulnerable to external factors. Already in the second stage of sampling, the technique of systematic sampling is used so that the sample includes students from all courses in the sixth grade. After identifying the students, their legal representative was contacted and the second group of informants was formed.

For the selection of the teachers, two inclusion criteria were used: (a) that they should guide some subjects in the sixth grade and, (b) that they should be interested in participating in the research. In this way, we were able to create a group of informants composed of 20 people distributed in this way: four teachers, eight students, and an equal number of parent representatives. The demographic characteristics of each group of informants are: a) Students: predominantly female (62.5%), with an average age of 11.4 years; b) Teachers: predominantly female (75%) with an average age of 35.5 years; c) Representatives: predominantly female (87.5%) with an average age of 31.8 years.

2.2. Instruments

The recollection of data necessary to respond to the objective pursued in this research requires three techniques, which are explained below:

Field journal. It aims to characterize the strategies that are implemented from the educational institution on the control and optimal use of ICT resources.

Observation sheet. A structured observation format was developed in order to identify the characteristics of the students' interaction process at different moments of the academic day.

Semi-structured interview. This instrument is used because it is the most recommendable since it facilitates communication between the interviewee and the interviewer, in order to determine the knowledge that the children have about ICT resources and the uses that they make of them, while at the same time investigating the degree of supervision that they have at home and in the educational institution about their use.

Focus group. Aimed at teachers and representatives of the selected students, in order to find out the level of accompaniment and supervision that they provide to the children while they interact with the ICT resources.

2.3. Procedure and data analysis

For the analysis of the data collected both in the interviews and in the focus groups, the comparative method proposed by Strauss & Corbin (2002) is used. This defines a series of processes organized in a sequential way that starts with the collection of the data, then they are codified and an analytical reflection is carried out. To prepare the analysis, synthesis matrices were created for each technique applied and then the integrative matrix was created, which compiles the syntheses obtained from the systematization of each technique.

3. Results

The following are the most relevant results found after the application of each of the data collection techniques.

3.1. Observation

This technique was carried out in the different spaces and moments in which the student develops within the educational institution. It was identified in all students during the break time are kept physically isolated or are incorporated into groups of up to three students, but each of them is concentrated on his mobile phone, through

which they see videos, updates of WhatsApp, chat with their peers even if they have them next to them prefer to do so by mobile or spend all their time reviewing their social networks.

3.2. Field journal

Within the environment of the educational institution there are rules of healthy coexistence, since the most popular ICT resource among students is the smarphone. In a characterization carried out at the institution, it was determined that 9 out of 10 students in Basic Secondary and Technical High School had a smartphone with an Internet connection (some with more capacity than others, but all with Internet access). Given this situation, the school administration has generated guidelines on the use of mobile phones during the school day, leading them to restrict their use during classes, although some teachers, in order not to conflict with students, have made attempts to incorporate them into their teaching practice as a resource for consultation, but there is a lack of discipline in students, which triggers an adverse effect to the expected, generating distraction in them.

3.3. Semi-structured interview

In the interview, five dimensions of interest were considered to be explored among the students: a) family environment, to determine the people with whom the informant lives and the activities that are promoted at home; b) knowledge about ICTs, focused mainly on exploring the degree of information and understanding they have about ICTs, their benefits, limitations and risks; c) provision of resources and their use, focused mainly on the type and amount of resources available to each student, the use he or she makes of them and the existence of rules for proper use; d) risk perception, dedicated to deepening the identification of the activities that motivate the use mainly of the Internet, the sites he or she visits and the activities he or she carries out in those places.

At a general level, it should be noted that all the informants in the sample live with their biological parents, 75% of them have siblings while the rest are only children. In the household both parents work but the mother spends much more time with them. All of them have a mobile phone, in addition to a computer, audio player and television, among other technological resources. 25% of them also have a tablet at home. They say they spend four hours or more every day interacting over the Internet in various applications. Informants say that at home their parents ask them about what they are doing? More is not an exhaustive verification process, so they always have a page open to mask the main activity they are doing. They claim that they are in control of what they see, that in case strange attitudes arise with someone else, they simply close the application or game and that's it. 20% openly admit that they have been curious about sexual issues and that they have consulted the Internet on the subject on Youtube, while the rest timidly say that they have come across some sexual images but that it has been an accidental and unintentional situation.

3.4. Focus group

The two focus group sessions focused on three dimensions: a) Use of technological devices focusing on the time they spend on the Internet and identifying the device preferred by them; b) Perception of the risk offered by the network where they explored the knowledge they had about their favourite social network, the frequency of use, the people they interact with or the websites they visit when entering the Internet; c) Management of free time whose intention was to characterise the activities that children usually do when they are not busy with their academic duties.

From these dimensions of analysis both teachers and representatives agree that students are exhibiting addictive behaviors towards the mobile phone, to which they dedicate many hours of the day, which affects the fulfillment of academic duties and their social relations. They recognize that there are risks on the Internet, which they say they have told the students based on their recommendation in news reports or press articles, but they recognize

that this is not enough, that it requires greater support, monitoring and control both at home and at school. Finally, with regard to the management of free time, the recurrent behaviour observed in students in terms of staying in front of the mobile phone screen is once again confirmed. At home when their parents forbid them to use it, they then change devices using the computer and go back online. This situation has led to sedentary students, vision difficulties and communication atrophy, since they end up using pseudo-language to communicate with each other. Parents justify their lack of supervision by the fact that they do not possess the basic skills of technological use, so they are always below the level of their children. Contrary to this position, teachers claim that they have mastered ICT skills but that in many cases their actions are limited by the lack of support they receive from parents and by the same country regulations that promote the free development of personality.

4. Discussion and conclusions

We will then focus on the most relevant findings found in the research given the breadth of the topic and the diversity of positions on it. Taking into account the world children's report presented by UNICEF (2017), it states:

> Although ICT has made it easier for children to connect with each other and share experiences online, it has also facilitated the use of these new connectivity and communication channels for online bullying, with a much wider reach and therefore a higher risk than offline bullying. Similarly, they have increased the potential for abuse and exploitation of children's privacy, and changed the way children regard their own private information. (p. 11)

With regard to the above, it was determined that in the homes students have various technological devices (mobile phone, computer and television), highlighting that their mobile phone has access to the Internet and social networks 24 hours a day and every day of the week, which has facilitated the excessive use of it and that could be corroborated by asking how often you connect to the Internet? The most representative answers were:

> Student_2: "about 4 hours almost every day"
> Student_4: "I'm always online"
> Student_6: "if I have tasks I do them first and then if I connect. I like to watch series on Netflix or check Facebook. Sometimes I get bored, play games or just watch random stuff.

The above leads to the conclusion that informants see ICT resources as a recreational tool, but with very little academic potential. This situation is generating in them low social interaction leading them to keep isolated occupying their free time in a dormitory culture.

One of the main challenges facing the education sector is to ensure equity through the implementation of ICTs as interactive tools. In this sense, ECLAC, quoted by Sunkel & Trucco (2010), recognizes that ICTs have led to changes in the way school curricula are organized and oriented, highlighting that

> What are called virtual collaborative learning environments. The importance of connectivity, intranets and networks in schools and educational institutions has reinforced the recognition that digital technologies can support virtual teaching and learning environments that replace or complement classroom work. (p. 17)

The educational institution recognizes the importance of the use of technology as a complement to the educational processes and strategies to strengthen the social and communication skills of children. However, through observation, it was possible to verify that the institution does not have implementation strategies or an orientation plan for the effective use of ICT. Worse still, there are no support resources that teachers can apply with their students in the classrooms in the face of the challenges that young people impose on them due to the use of technology.

When you ask students what benefits do you think the use of ICT can have? The following answers are highlighted:

> Student_3: "well (...) because it helps me to check my homework and to be informed about (...) well of several things and also to have friends".

> Student_8: "it keeps people in touch and we have more ways to be aware of what is going on because it allows us to investigate everything more easily without so many problems".

Based on the above, it is concluded that informants state that the main benefit that technology can provide is for the development of schoolwork in an easier way and to have greater access to information. On the contrary, the lack of it was identified, since in spite of being connected all the time, all of them do not have a clear concept of ICT, 25% associate it with a set of rules that regulate the use of the Internet, while the remaining percentage believes that ICT is the same as the Internet or Smart phone.

On the other hand, in the absence of strategies to control and make use of technologies, the legal representatives were considered as informants, the regulations of the Ministry of ICT and one of the teachers was from the School Guidance Office. This aspect is very important in the learning processes and the development of students' skills in their socio-cultural context and individual characteristics associated with the effective use of technologies for their learning. These support networks are expected to have an impact and take a leading role in the process of creating strategies that positively influence the development of social skills of children in the educational institution. In this sense, a social network is understood as a group of people, whether family members, neighbours, friends or institutions, who are capable of providing real and lasting support to an individual or family. For Madariaga & Sierra (2010), it determines that the functionality of a social network depends on the intensity and reciprocity of these, that is, the degree of bonding among its members and the mutual commitment among group members.

The same author declares that the social networks of an individual are closely linked, which are classified in primary networks (family, neighbors and close friends), secondary networks (groups present in their social context) and finally the institutional networks (institutions and communities that work for the interests of the individual). The families that participated in the research project have a nuclear family typology.

> Student_2: "I live with my mom, dad and sister"

> Student_4: "I don't have any siblings but I live with my parents"

On the other hand, the students interviewed stated that there is no parental supervision when using technological devices and their derivatives. Therefore, it is evident that they do not have the support and follow-up of a responsible adult who can prevent them from the risks they are exposed to by entering social networks and inappropriate websites alone. This could be contrasted with the information provided in the focus group of legal representatives, who stated that:

> GF_Parents: "I almost never check the device, let's say once a month", "sometimes because I trust it, I talk to my son a lot", "I almost never check it, around every two months or when they hide the cell phone".

Parents said that they do not exercise effective supervision because they lack technological mastery, in addition to not having enough time because they work all day and only share with them when they get home after work and consider that their children are old enough and knowledgeable enough to navigate on their own.

According to ECLAC quoted by Sunkel & Trucco (2010), new information and communication technologies for education in Latin America: risks and opportunities, where one of the main issues is: ICT and the quality of

education, this in relation to the type of use of technology and learning outcomes in subjects. While it is true that students make use of technology and the Internet to do their schoolwork, saying that it is a tool that allows them to do so more easily and that in turn generates knowledge, this with regard to the use they give it in education.

It should be noted that the use that the students interviewed make of the internet and social networks is not adequate, since they use them for recreational purposes in most of their free time. Another important feature to mention is that without a safe supervision and control of the parents towards their children, they add to their social networks all kinds of people without really knowing them. This reality was manifested by them when they were asked ¿how many contacts they have in their social networks?. To which some of them answered:

> Student_1: "I have 4,388 friends on my Facebook account"

> Student_5: "I only use Facebook and have 1,158 friends, although I know very few of them"

With regard to the above, the lack of supervision and control exercised by parents with their children is evident, where they are not aware of the risks of inappropriate use of social networks when adding people they do not know, in addition to frequenting pages where they should not navigate (Santiago-Del Pino et al., - (2019).

Finally, according to the regional report presented by the Organization of American States - OAS in January 2018 in conjunction with the Inter-American Children's Institute, where they cite the child protection manual prepared by the International Telecommunication Union (ITU, 2009), "there is a disconcerting difference between what parents believe their children know, and what they actually know". (p. 9).

On average, American teens spend about five hours a day online; while parents only think of their children as spending an average of three hours a day online. Almost 10% of teens (10.3%) spend more than 10 hours a day online. Two out of three teens say their parents don't need to know everything they do online. In fact, half of teens would change their online behavior if they knew their parents were watching.

In this regard, the students say that:

> Student_4: "My parents have suggested that when I get into social networks that I be very careful, that I don't talk to people I don't know, but I know the keys to my social networks.

> Student_6: "When they get annoyed because I don't pay attention, they scold me for the time I spend on the Internet, but in the end they don't know who I talk to and the keys less".

> Student_7: "My passwords are personal and they don't have to ask me for them".

Under this scenario, the problem has two faces, on the one hand there is the technological ignorance of parents regarding the management of resources and tools as concluded in Salcines et al., (2018), but in part this situation has been caused by them since they are the ones who buy and provide these resources to their children, which makes them complicit in what happens; On the other hand, students take advantage of the lack of parental accompaniment, which is reflected in the amount of time they spend daily. In this sense, some of them argue that:

> Student_2: "In my house there are rules, I can dedicate between 4 and 5 hours to the internet if I am doing homework and maximum 2 hours if I have finished it, ... but if I don't have homework the internet is unlimited until the time I go to bed".

> Student_7: "No. Hahahaha unless my parents confiscate my cell phone because of bad grades, the rest I have no time limit".

As a result, some parents expressed that they have standards for internet use in their homes, but that they recognize that in many cases they are permissive in complying with them (Dolores et al., 2018).

Finally, and as a general conclusion of the research, it was determined that in the school they say they incorporate ICTs within the pedagogical process but there is no clarity on how they do it. At home the conditions are not better, since there is no parental supervision when using the different technological devices, the Internet and all its derivatives such as social networks, multimedia content, cyber pornography, online games and document creation; this is due to the technological illiteracy they claim to have, a situation that leads students to exceed the time of use and in many cases to expose themselves to unnecessary risks.

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