

**THE USE OF MOBILE  
PHONES AS TOOLS FOR  
ACCESS AND  
KNOWLEDGE  
EXCHANGE BY  
STUDENTS IN SPAIN  
WHEN STUDYING:**

Access to leisure, persuasive and regulated schooling contents; key factors to take into consideration to plan targeted advertising campaigns

**EL USO DE TELÉFONOS  
MÓVILES PARA EL ACCESO Y  
EL INTERCAMBIO DE  
CONOCIMIENTO POR PARTE  
DE ESTUDIANTES EN  
ESPAÑA:**

Acceso a contenidos de entretenimiento, escolares y persuasivos. Claves para campañas de publicidad dirigidas al target

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## RESUMEN

El uso de teléfonos móviles en el aula y durante las horas de estudio es un tema de discusión reciente. ¿Son los *smartphones* responsables de que los jóvenes muestren más o menos interés en clase? ¿Son los teléfonos móviles una herramienta educativa de la que sacar ventaja o sólo elementos que distraen la atención de los alumnos en sus estudios? Esta investigación explora la utilidad de los teléfonos inteligentes durante el tiempo de estudio, incluyendo la cantidad de tiempo dedicado a actividades de ocio a través de ellos, y como contraste, el uso del *smartphone* como posible herramienta académica para obtener y compartir apuntes de clase o para el acceso a la información y el conocimiento a través de Internet en sus dispositivos. Teniendo en cuenta los resultados, las conclusiones proponen la conveniencia de reconsiderar la dicotomía habitual que opone *online* y *offline* en la educación y la sociabilidad de los jóvenes.

## ABSTRACT

The usage of mobile phones during school and studying hours is a subject of recent discussion. Are smartphones makers that young people show more or less interest in classroom? Are mobile phones a greater educational tool to take advantage on, or just tools that distract pupils' attention from their studies? This research explores the utility of smartphones during study times, including the amount of time spent on leisure activities through them, and as a contrast, the usage of smartphones as kind of academic tool to obtain and share notes from classes with their classroom mates or to access to information and knowledge on the Internet in their devices. Taking into account the results, its conclusions propose the desirability of reconsidering the usual dichotomy that opposes online and offline in education and the sociability of youth.

### Palabras clave

*Teléfono móvil; estudiantes; movilidad; Internet; comunicación digital; interactividad; redes sociales; educación.*

### Keywords

*Smartphone; students; mobility; Internet; digital communication; interactivity; social networks; education.*

## 1. Introduction

The concept of “young people” has changed fundamentally in the last few decades. As Bourdieu stated, division by ages is arbitrary (Bourdieu, 2002). But the millennial generation, is conquering the world and making its mark in today's society as did previous generations. Defined as those who arrived at the beginning of adult life around 2000 , the members of the millennial generation are known as a hyper connected group, very familiar with technology as a way of interact in their social life. Those who belong to the millennial generation make an intensive use of the Internet, especially via mobile technologies. Attitudes and preferences of this generation affect many aspects of economic and social life with important implications for various sectors, from education or the sociological implications of these trends have, to different business areas as well as persuasive communications.

These digital natives (Prensky, 2001) , today's young people , who constitute the sector that has come before to social media networks and builds on them its relationship dynamics (Monge & Olabarri, 2011) , have a long way to go in these new forms of digital media. Experiences like Leonard (2012) show that the preparation of these young people, along with the development of a critical ability in the use of online networks, intensify the potential of these networks to help the integral formation of this generation and come.

Millennials, the most diverse and most educated in history, requires the partners to embrace transparency, simplicity, integrity and commitment. Almost 80 % of those in the millennial generation in the US have a smartphone and that percentage is similar not only in developed countries but also increasingly in developing countries. In Spain,

78.4% of 13 years old Spanish teens have a cellphone. Among 15 years old, the percentage increases to 90.9 % (INE 2015).

The strong dependence of the members of this generation of connectivity and mobile devices is commonly widespread despite the millennial generation is a complex and diverse group with different needs and preferences. The Advanced Studies Center in Anxiety Disorders (CEETA) noted in 2012 that 53 % of mobile phone users tend to feel anxious when they lose their mobile phone, they deplete the battery or credit, or they do not have coverage. These symptoms have become so common that already considers these people have a new disease: "nomofobia" (non -mobile -phone phobia).

The study of Clayton, Leshner and Almond (2015) from the University of Missouri (USA) reveals that the separation of the mobile phone can have serious psychological and physiological effects among users of iPhone. These effects range from increased anxiety, until a blood pressure and increased heart rate and even lower performance on cognitive tests.

However, although the actors in the education system are increasingly aware of the need to bet on online and mobile technologies, this is not their exclusive domain. The same technologies that allow a person to access knowledge through the phone also facilitate the entry of disrupters that compete directly with the education system. The younger Millennials are willing to accept these new entrants to replace the traditional educational channels and even develop their concerns often outside the system.

Millennials demand a genuine and important relationship with their partners, be they formal or informal. To maximize the impact of technology, educators must establish empathetic relations. Failure to adhere to these changes and do not face

these challenges, they are wasting the benefits of appropriate use of these tools and their advantages in education (García Galera, del Hoyo, Fernández Muñoz, 2014).

Therefore, it should ask the following research question: Are mobile phones makers that young people show more interest and tools to make better educational advantage, or are just tools that contrary to distract their attention from their studies inside and outside the classroom?

To understand what is happening, we must bear in mind that mobile, as well as tools of interpersonal and social communication, paths to open access to knowledge and educational participation, involving young people in educational dynamics as evidenced by many cases documented good educational practices, particularly with tablets (Chen, Seilhamer, Bennett, and Bauer, 2015).

This generation learns interactively (Ramos, Herrera y Ramírez, 2010). No time or place is out of the range of their devices, which favors the use of the telephone within a study context. The current tendency is to move from the universe of landlines to mobile phone communication networks (Cebrián, 2009).

Mobility is an advantage if it is used in a proper way, by reshaping the role of the teacher and the learner at almost every stage of education. Being connected constantly may be an educational tool, but is not always beneficial. There is a potential factor for distraction in being connected during study or class time.

During class, in the library, while carrying out group work, it is good to be connected in all and every setting. Multiple channels are chosen and complement one another. At present, multitasking has become a custom for digital natives, who send

and receive messages through WhatsApp, text messages, social networks -Facebook or Twitter-, amongst others.

Compared to student habits in earlier decades, learners nowadays juggle their studies with the sensation of being connected with their friends 24/7. This includes the time spent in class. We could say that students habitually multitask. What must be analyzed are the positive and negative aspects offered by communication mobility in educational environments.

The generation that receives information from digital platforms has a different attitude from that of analogical generations. At present, the users are content builders, subject creators, and gather an enormous amount of information from the sources. As students who are experts in social networking, subject to a prodigious amount of data, the present generations have to find and select educational information, development and assimilate it.

Thus, it is no longer a question of searching for and finding suitable information. As Ramos, Herrera y Ramírez (2010) state, basic cognitive skills exist. The elementary ones are: approach, acquisition and recovery of information, organization, analysis, transformation and evaluation. In contrast, the higher cognitive skills may be divided as follows: problem-solving, decision-making, critical thinking and melioration. Present-day students should be capable of using both the basic and higher skills in order to better exploit information.

Regarding group work and the new learning models, the students use their cell phones habitually do exams or to watch videos on Internet. The advantages of the devices and the interaction with other students offered by IT should be considered.

One possible hypothesis is whether the use of the cell phone favors students' teamwork. There are multiple tools which can assist with academic work: the cell phone service, instant messaging and email have opened up an extraordinary communications channel between students which has allowed them to share information, discuss ideas, make decisions and distribute tasks and roles, amongst other activities (Brown, 2012).

The brands are interested in the use young people make of cell phones, both in their leisure time and during the acquisition of formal learning. Advertisers are interested in every moment of the day. Consumer habits and customs are the object of study by market research companies. Young people move quickly and, sometimes, the advertisers' studies barely have time to adapt to market needs, as young people, particularly digital natives, have become a constant challenge for any kind of company.

## 2. Goals

Our group (including Prfs. García Guardia and Llorente) has analyzed **the importance of mobile devices in the classroom and education**, especially in usage patterns and opinions of young students about them.

The hypothesis is based on the familiarity of young people with internet and mobile devices, what could make them an instrument for consideration as **an element that correlates with their educational habits**. In fact, mobile phones have become essential tools for day to day youth life, as well as the general population, to the point of including them in their study habits in one form or another.

In order to deal with the current context of formal education, we must ask ourselves the following research questions: Can cognitive ability for learning, concentration and the use of skills during school hours be developed through the use of the cell phone? Will the cell phone become a distraction for the students?

Although academic studies on mobility, the use of the cell phone and digital natives have already been published, in this specific case we have found very few bibliographical references to the use of the cell phone during study hours or during examinations, either ethically and non-ethically.

Thus, the main objective has been to make an in-depth study of young people's habits and customs regarding their use of the cell phone during study time and examination periods.

The goals of this research, conducted among young people in Spain above 16 years, have been:

- knowing the utility of smartphones during study times, including the amount of time spent on leisure activities through them,
- and as a contrast, the usage of smartphones as kind of academic tool to obtain and share notes from classes with their classroom mates or to access to information and knowledge on the Internet in their devices.
- At the same time, other objective of this research was to know if mobile phones are used to copy fraudulently or are used to carry exam cheat sheets on them (cheating)

### 3. Methodology

We worked in collaboration with Tuenti, right now a Mobile Virtual Network Operator, which carried out a questionnaire that was drawn up and spread among social networks in Spain. The questionnaire was completed by 2,000 individuals above 16 years.

- Universe: Young people, social media users between above 16 y.o and below 35
- Sample: 2.000 social media users who responded voluntarily, 50% male and 50% female from all over Spain.
- Date field: between 10/06/13 and 28/06/13.
- Margin of error in sample:  $\pm 2.24\%$ .
- Field support: Tuenti
- Technical advice: IPSOS

### 4. Content. Results

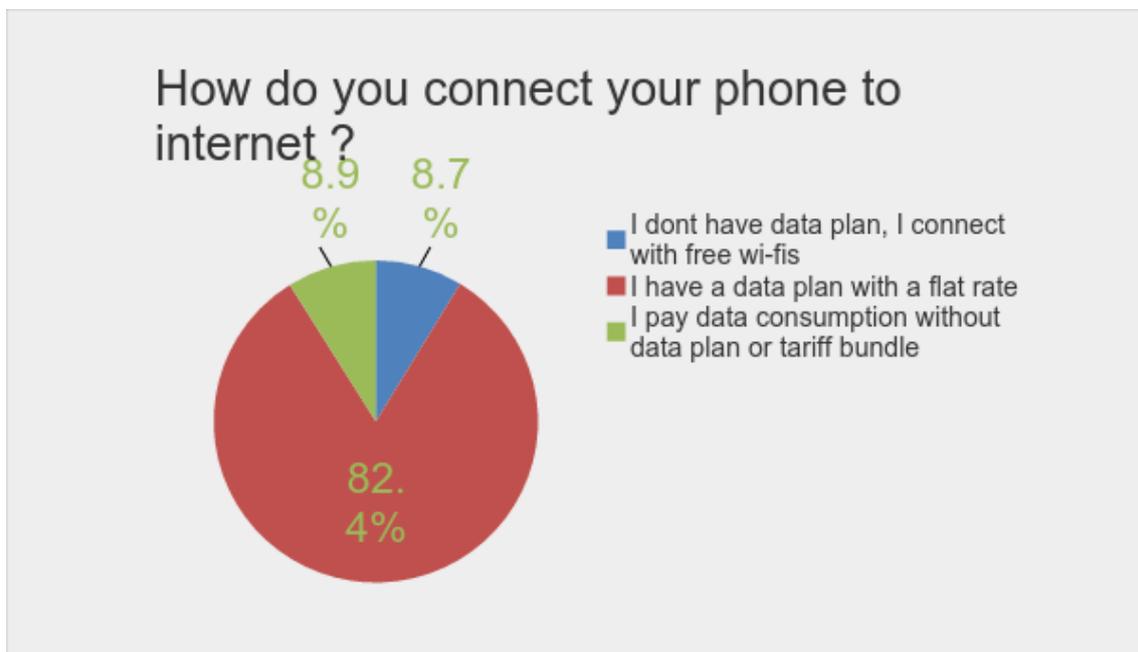
The results on **mobile phone usage patterns** by learners during their study times and in class allow knowing the distribution of time to access to leisure or study related contents. The study has analyzed and interpreted the data obtained from the research carried out by Tuenti asking for the use of their phones in different situations:

- The use of the cell phone while studying (for example, at home).
- The use of the cell phone in study hours (in class).

The questions asked and the results are as follows:

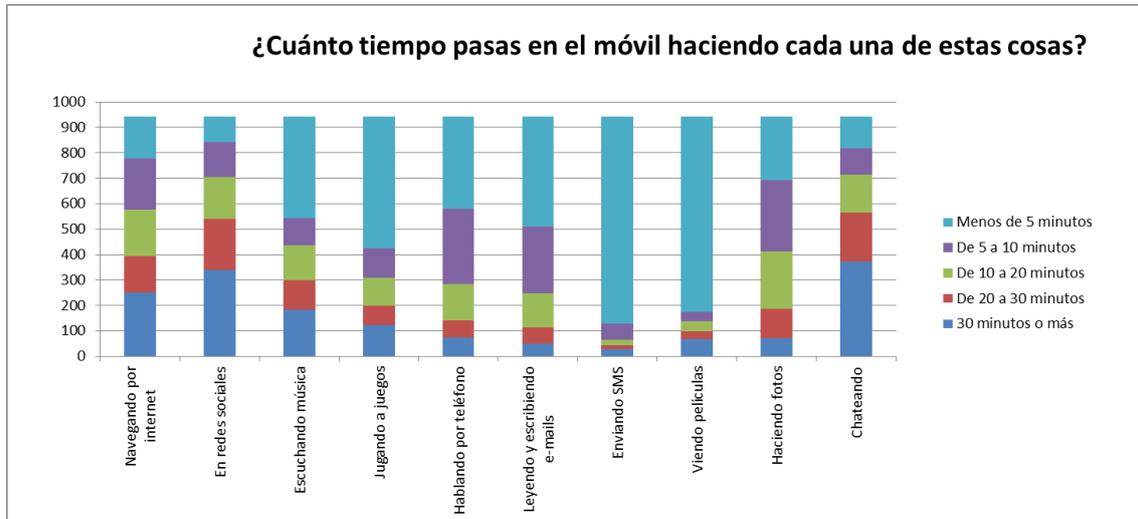
The first question (Fig.1) was related to the way of connect their phones to internet. The results show how the majority of young people own a tariff with a flat rate regarding data, what's a key factor to have internet access in their smartphones. Only 17,6% of them don't have it.

**Fig. 1**



Regarding, the time spent with their smartphones (Fig. 2), most of them use it widely chatting, in Social networks and waving internet. The activity that employs less time is sending SMS and watching films. First activity, is a *demode* activity, replace by chat and the second of them, and surely is not widely used due to the high amount of data required.

Fig. 2



The next question was “Do you use your phone when studying?” (Fig. 3) and more than 40% of the sample answered affirmatively. Almost 39% said that they didn’t use. Thus, we can conclude that the two positive and negative percentages are quite close, and that it is not a clearly defined habit, but it’s necessary to underline the relevant percentage of use. The rest answered that they wasn’t studying at that moment.

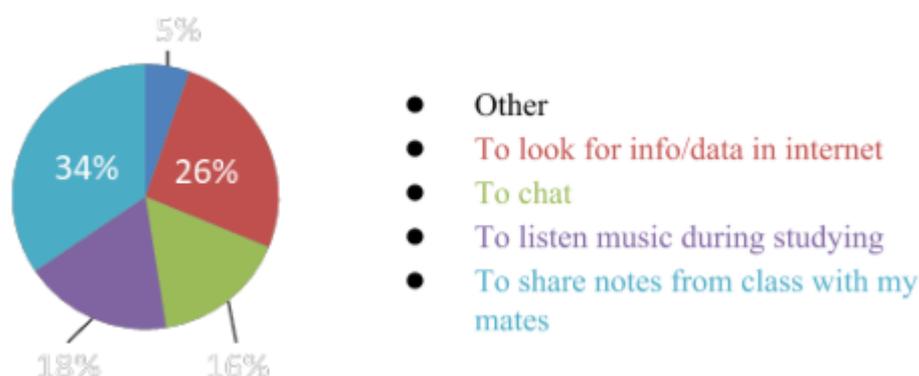
Fig. 3



Regarding the next question “What do you use the mobile phone for at the time of study during exam time?”, the most frequent use is to share class notes with class mates (35%). In second position, appears the use to look for information and data in internet (26%). Then, “to listen music during studying” and, finally, “to chat”. The range of uses is varied and covers expressive and leisure functions together with the

acquisition of knowledge; the most common academic use is the exchange of notes. This fact confirms the consolidation of the cell phone as a learning tool. We must underline the fact that that at present the student is expected to consult sources and become a builder of contents based on these sources.

**Fig. 4**

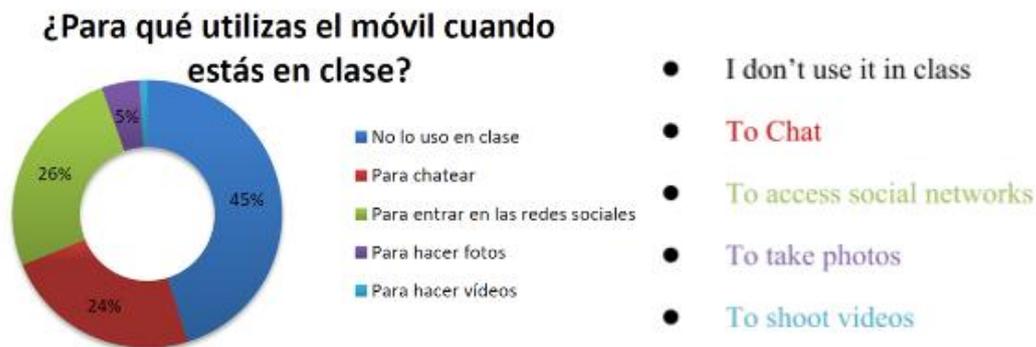


In class, the answers vary. Considering the question “What do you use your phone for in class?” (fig. 5), the results showed that 45% of them didn’t use it during classes. 26% of them used to visit social networks, 24% to chat and 5% to take pictures. A very small percentage uses their smart phone for shooting videos (1%). Here we see how smartphones can be a leisure tool that opposes to their utility as knowledge tool.

A high percentage of students do not admit to using their phones in class, and if they do so, it is to take photos or shoot videos. It is comprehensible that during the class students may use their smart phones to capture images which have been projected during class time, and which may, later, be of educational use. It is true that there is a significant percentage, (26%), that admits to using social networks while classes are being given by teachers, which may be interpreted as an element of distraction.

Regarding the issue of whether the smart phone is a suitable tool for study, we must stress that the answer is mainly affirmative, although this is very close to the number of those who do not use it at all. The question posed is the following:

**Fig. 5**



The last question was "Should cellphones be forbidden at class?" (Fig. 6) and clearly a vast majority considered that it should not (72%).

**Fig. 6**



These data reflect the fact that students have integrated the cell phone into their daily life to such an extent that it even forms part of their study habits.

According to the study by Tuenti and IPSOS, the above refers to the use of the phone during the study period. However, 40% of the young people say that they use their smart phones in exams, either to share notes or as crib sheets.

However, 45% of the users surveyed stated that they do not use their phones during school hours. The remainder is divided amongst accessing social networks (26%), chatting with friends (24%), taking photos (5%) and a very small percentage that use their smart phone for shooting videos (1%).

A high percentage of students do not admit to using their phones in class, and if they do so, it is to take photos or shoot videos. It is comprehensible that during the class students may use their smart phones to capture images which have been projected during class time, and which may, later, be of educational use. It is true that there is a significant percentage, (25%), that admits to using social networks while classes are being given by teachers, which may be interpreted as an element of distraction.

Regarding the issue of whether the smart phone is a suitable tool for study, we must stress that the answer is mainly affirmative, although this is very close to the number of those who do not use it at all. The question posed is the following:

However, although the phone is used during exams, the answers show that their use has nothing to do with the non-ethical issues such as cheating. But we must wonder about and take into account the level of honesty in answering the questionnaire presented.

In short, students use their smartphones mainly to access the contents they have developed for this specific situation. It is worth considering whether it would be

appropriate to set exercises during assessment tests in which the cell phone would be used as a reference tool.

Finally, we must stress that 72% of those surveyed find that cell phones should not be prohibited during class time. The students believe that the cell phone should be permitted in class. They do not see that it is negative or particularly distracting.

## 5. Conclusions

Results confirmed the use of mobile phones as a relevant tool for communication among youngsters during exams and in class. 40% uses it during study and 55% uses it at class. The most relevant activities are:

- Chatting
- Looking for info/data related
- Taking part in social networks
- Sharing notes from classes or cheating

To sum up, the cell phone is seen as a positive means of communication and access to information in the field of education, and at the same time a way to distract them.

With access to Internet during class time, the students can expand on the contents, consult information, find data or images, etc. The leisure uses are not those with the highest percentages, but they are noteworthy.

The point on which there is almost unanimous agreement is on having the phone connected during class time, but the students do realize that it may distract them during their hours of study, although a not inconsiderable group uses it in this way.

Considering this, again it confirms that its necessary to establish empathetic relations to maximize the impact of technology, Educators as well as communicators or advertisers must failure to adhere to these changes and do not face these challenges, they are wasting the benefits of appropriate use of these tools and their advantages in education as well as the proper way to interact with this target during studying.

The set of variables related with the young people who study allows the brands to understand digital natives better, and groups them in *clusters*; this knowledge, through the use of avatars, allows the brands to predict student behavior in the short and medium term. In this way, the brands can personalize communications to a great extent when they are found in digital environments.

Apart of knowing better how this target use cellphones during such relevant moments as being in class and while studying, the information could be interesting for advertisers to consider a king of opportunity to segment contents of interest and relevance. It's necessary to take in consideration the importance of take care of the contents as well as mobile responsive formats.

Here some key factors to take into consideration to plan targeted advertising campaigns:

- Few time for non-studying or leisure related contents
  - Instantly

- Relevance
  - Is it related to their current needs?
  - Can be used to accomplish studying goals?
  - Can it be integrated in any way with communications with classmates?
- Mobile responsive

Professionals need to reconsidering the non-unusual dichotomy that opposes online and offline in the sociability of youth. It may be advisable to integrate the use of mobile devices as part of any strategy as well as being considered a possible ally by educators in class, far from just and enemy and forbidden them. It is some time since teachers became aware of the importance of Web 2.0 in students' lives and, several actions have been carried out with social networks, but it's time to think mobile first.

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