COMMUNICATION & SOCIETY

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Students' perceptions on social media teaching tools in higher education settings

Abstract

Young people use social networks extensively in their daily lives, and using social media is, without doubt, the media practice they do the most. Therefore, there are increasing efforts to include students' use of social media outside the classroom into university learning practices. However, there is still very little innovative application of mobile technology and its social networks in Spanish universities. In this article we explore Spanish university students' perceptions of the use of social networks for educational purposes in the classroom. We found students to have an ambivalent perception as they are both critical and approving of using mobile devices in university teaching. We present data from the research project "Media competencies of citizens in emerging digital media in university environments" funded by the Ministry of Economy and Competitiveness of Spain. The study is based on 897 questionnaires given to Spanish university students studying various degrees, as well as four focus groups held in Seville, Madrid, Huelva and Barcelona during the 2017–2018 academic year. The data show that there is little use of social networks for educational and creative purposes in Spanish universities, and formal practices (organized by the teacher) are very different from informal practices (organized spontaneously by students). The latter is the most common among university students and WhatsApp is the most used internal tool, followed far behind by Facebook and Instagram. Students appreciate the direct and immediate communication of these networks, but are concerned about their distracting influence in the classroom and the possibility that teachers could invade their privacy.

Keywords
Media education, mobile technology, social networks, WhatsApp, University.

1. Introduction

The creation of the European Higher Education Area (EHEA) was a milestone in rethinking university practices. The increasing digitization of daily life has contributed to Information and Communication Technologies (ICT) occupying a preferential place in this process. In practice, however, achieving paradigms of autonomous and collaborative learning as well as creating new methodologies based on mobile technologies continues to be one of the main challenges for universities (Brazuelo & Gallego, 2014; Figueras–Maz, Masanet & Ferrés, 2017). This challenge is made more difficult given the lack of consensus on the effects of devices and

platforms in various learning areas (Mateus, Aran-Ramspott & Masanet, 2017; Mateus *et al.*, 2019). "In university classrooms, smartphones, tablets and laptops are already a regular part of the decoration of a university classroom, in which students consult the virtual campus and take notes while the teacher gives the class" (Ramírez-Montoya & García-Peñalvo, 2017, p. 38).

Despite the generalized access to mobile devices in university classrooms and the possibilities that these offer as motivational and informal learning resources, many teachers continue to experience their use with more enthusiasm than certainty. A study with 658 teachers in eight Turkish universities found that half of the teachers already used social networks to interact with their students motivated by their speed and effectiveness, although doubts related to privacy also emerged (Akçayır, 2017). A questionnaire answered by 6,139 Italian teachers showed that the use of social networks is still limited and that academics are reluctant to integrate them into their practices due to cultural resistance, pedagogical barriers or institutional restrictions. However, it was also noted that this varied according to the scientific discipline (Manca & Ranieri, 2016).

The debate on using mobile devices has led to various efforts to regulate and in some cases ban their use in the classroom as a measure to minimize their risks. In 2015, only a quarter of the universities in the United States had specific policies on the use of social media, while for most, the best policy was no policy (Pomerantz, Hank & Sugimoto, 2015). In addition, social networks have blurred the boundaries between formal and informal, and physical and virtual spaces. They have become tools that students perceive as good because they allow them to strengthen learning communities (as Tyrer (2019) found for WhatsApp) and receive tutorial guidance (as Amador & Amador (2014) concluded in an ethnographic study on the use of Facebook for this purpose). In Spain, Peña, Rueda and Pegalajar (2018), in a questionnaire given to more than a thousand students from a university in Jaén, found that the students perceive that, "the use of these resources in Higher Education improves socialization among the students, making it easier to resolve doubts, contact different people, and exchange documentation and resources of interest" (p. 250).

Likewise, the incorporation of social networks in higher education can have an impact on students' motivation and goal orientation in the sense that it provides them with more accessible information, as Cooke (2017) found in a university in the United Kingdom. However, the same research warned that, from the students' perspective, the mandatory inclusion of these tools could generate the opposite effect and they could lose their attractiveness if they are used as a replacement for traditional practices, such as weekly readings, instead of an added benefit for enriching the education experience.

Incorporating mobile devices in formal education environments should also consider the debates on the privacy and security of personal data when these devices are used, as well as the suitability of these interactions in university contexts (Grandío, 2016; Marta-Lazo, Marfil-Carmona & Hergueta-Covacho, 2017; Sugimoto, Hank, Bowman & Pomerantz, 2015). According to the *Study on Inclusion of ICT in Classroom Educational Centers of Fundación Telefónica* (2018), students consider using online messaging practices with teachers as an intrusion into their private space and personal time outside the classroom and feel overloaded with content through social networks in some subjects (Sundgren, 2017). Along the same lines, the ethical implications of filing and managing usage data are also discussed, which is obliging universities to develop policies in this regard.

In another study (Carcelén, Mera & Irisarri, 2019), a questionnaire was given to 580 students studying different degrees at public and private universities in Madrid. This study looked at the role of social networks in university studies, and the authors warn that many young people "are beginning to be more aware of the negative effects of so frequent a use; they consider that it distracts them, that they lose concentration, it forces them to spend more time studying, they obtain worse grades and it has a negative impact on their academic results" (p. 208). This critical perception has led many students to use self-control strategies

(such as silencing their mobile phone) that often do not amount to more than good intentions. Another critical point about the use of social networks in the university is the level of media skills that teachers and students have. According to the report *Social Media in Higher Education*, teachers' ability to understand digital media and design learning experiences that incorporate them is a crucial factor for their effective use (Rowan-Kenyon & Martínez Alemán, 2016). Martínez, Fortuño and Vidal (2016), based on a questionnaire applied in a Catalan university, concluded that students "use social networks a lot in their personal life but not in their academic life, partly due to teachers' lack of initiative"(p. 21).

In summary, the international and national scientific literature on the use of social networks in university classrooms for educational purposes shows us ambivalent results that reveal the complexity of the subject and question both the benefits and disadvantages of using them. This research focuses on the current perception of university students in Spain to determine needs and deficiencies in the university environment in the use of social networks on smartphones and tablets.

2. Objectives and methodology

The data presented in this article is part of the research project "Media competencies of citizens in emerging digital media in university environments," which analysed the use and consumption of digital media (smartphones and mobile devices) and their potential to stimulate active, critical and intelligent media skills among university students.

The total study sample was obtained from a structured questionnaire distributed, thanks to a teacher network, in various Spanish universities to a self-selected sample of 897 students during the 2017-2018 academic year. Specifically, 68.9% students were female and 30.5% were male. Regarding degrees, 52.7% were from bachelor's degrees related to Communication (Advertising and Public Relations, Audiovisual Communication and Journalism), and 29.3% were from bachelor's degrees related to Education (pre-primary, primary, social education). A total of 17.8% were from other degrees, including Marketing, Business Administration and Management, and Fine Arts. Students from all years of the degrees participated: 34.5% were in the first year, 22.4% in the second year, 21.7% in the third year, and 16.3% in the fourth year. The sample was completed by master's degree students (4.8%).

The focus groups were held to complement and go deeper into the issues that had been detected in the survey; therefore, the focus group sample was the same as the surveys in terms of the variety of students according to degree and geographic scope. Participation was voluntary, guided by the students' interest in the topic discussed. Four groups were held in four different cities (Barcelona, Madrid, Seville, Huelva) in the period May-June 2018. All participants in the focus groups were in the second year or above, and the majority were in the third year. Therefore, they were between 19 and 23 years old. The Barcelona focus group was made up of four females and four males from different public and private universities in Catalonia (Pompeu Fabra University (UPF), Ramon Llull University (URL), EUNCET) from various degrees (Audiovisual Communication, Advertising and Public Relations, Marketing and Digital Communications, Political Science). The Madrid group consisted of seven male students from Rey Juan Carlos University (URJC) from the double degree in Computer Engineering and Design and Development of Videogames and the double Degree in IT Engineering and Computer Engineering. The group from Seville was made up of four females from Pablo Olavide University from the Degree in Social Education, one from the master's degree in Education for Development and the Culture of Peace and an Italian Erasmus student from the degree of Hispanic and English Philology in Spain. Finally, the group from Huelva was made up of two males and two females from the Degree in Primary Education from the University of Huelva. The responses of the focus groups were processed and analysed with the Atlas.ti software.

For greater clarity, the quantitative data will be presented first, and then other qualitative insights will be given.

3. Results

3.1. *Quantitative results*

3.1.1. Wide use of mobile phones for leisure consumption

Regarding the general use of mobile technology, the surveyed students spend many hours of their day connected to their mobile: 35.7% use their mobile more than 5 hours a day, 27.8% between 3 and 5 hours, and 23.6% between 1 and 3 hours. It is significant that women spend more time using their mobile phones than men. A total of 39.6% of the women surveyed say they consume more than 5 hours a day, compared to 26.6% of the men surveyed, which represents 13% more consumption. Similarly, 31.4% of the men surveyed claim to consume between 1 and 3 hours compared to 20.2% of the women (see Table 1).

Table 1: Frequency of mobile phone use among university students for the 2017-2018 academic year.

SEX	1 to 3 hours	3 to 5 hours	More than 5 hours	Less than 1 hour	Total
Female	20.2% (126)	37.3% (235)	39.6% (247)	2.4% (15)	100% (623)
Male	31.4% (86)	38% (104)	26.6% (73)	4% (11)	100% (274)

Source: Own elaboration.

Specifically, their daily mobile connection is mainly linked to leisure consumption, whether it is consulting social networks (90.6%) or watching videos or movies (46.8%) or listening to music (38.6%). In a lower, but significant, percentage it should be noted that they also carry out activities that could be applied to collaborative learning, such as using the cloud (Dropbox) to share material (35%) or Google Drive (21.1%) (see Table 2).

Table 2: Common uses of mobile devices (smartphone, tablet, computers, etc.) among university students.

USE	PERCENTAGE
Talking on the phone	25.5%
Looking at social networks	90.6%
Using the cloud (Dropbox, others)	35%
Google Drive	21.1%
Watching videos, movies	46.8%
Listening to music	38.6%

Source: Own elaboration.

3.1.2. Mobile and social networks in the classroom: Distraction or innovation?

Although we have already seen that the respondents did not spend most of their mobile phone time on aspects related to their learning, 81.3% of our sample affirmed that they habitually use a mobile device (tablet or smartphone) for doing learning activities related to their university studies. In relation to the university degree, 86.8% of the surveyed students doing the bachelor's degree in Education use a mobile phone to do learning activities related to their university studies, compared to 75.7% of the respondents doing the Communication degree. It is also worth noting how the students of other degrees in our sample have an even higher percentage of mobile use for educational purposes (Table 3).

Table 3: Mobile use for learning activities by degree.

DEGREE	USE MOBILE FOR EDUCATIONAL PURPOSES	DO NOT USE MOBILE FOR EDUCATIONAL PURPOSES	TOTAL
Communication	75.7% (358)	24.3% (115)	100% (473)
Education	86.8% (228)	13.3% (35)	100% (263)
Others (ADE, Marketing, Fine Arts)	88.8% (142)	11.3% (18)	100% (160)

Source: Own elaboration.

Students use their mobile in class because it is part of their identity. Therefore, they also use it for academic purposes, mainly informal, that is, outside the teacher's control. A total of 96.5% use or participate in a class Social Network or group. Specifically, 91.1% mainly use WhatsApp as a social network applied to classroom learning, 3.3% use Facebook, 1.8% use Twitter, 1.5% use Instagram, and 1% Google Drive.

Among the most cited reasons for using the mobile phone in the classroom for learning purposes, we highlight how 27.6% of those surveyed say that they always use it to solve learning doubts, 27.1% to complete information if they have not been able to attend class, and 24.3% to do class work. Therefore, for more than a quarter of the respondents learning practices on their mobiles are very ingrained and used in parallel to class work, outside the teacher's control. The rest of the respondents oscillated between doing these practices occasionally or frequently. For example, 41.2% affirm that they use their mobile frequently to resolve their doubts. At the other extreme, 22.4% of those surveyed never use a mobile phone to study with their classmates, something that only 6.9% always do. Therefore, this last learning activity with the mobile is the least established among the Spanish university community (Table 4).

Table 4: Reasons that university students use their mobile phone to do activities related to classwork.

REASONS	Never	Sometimes	Often	Always	Don't know/ Didn't answer
Do class work	7.5%	36.1%	31.5%	24.3%	0.6%
Study with classmates	22.4%	46.2%	23.7%	6.9%	0.8%

| **Resolve doubts** | 3.2% | 27.9% | 41.2% | 27.6% | 0% |
| **Complete information if they have not attended class** | 10% | 34.6% | 26.5% | 27.1% | 1.8% |

Source: Own elaboration.

In general, and given the little creative and participatory use of mobile devices in the classroom, it is not surprising to see that only 54.4% of those surveyed consider that using mobile devices has improved their learning level in the classroom quite a lot, followed by 31% who state that it has improved their learning a little. These data evidence that there is room for improvement in the successful application of mobile technology in classrooms.

In addition to the little learning linked directly to the application of mobile technology in the classroom, the perception of their skill/knowledge level in using ICT is not as high as we might expect. They do not claim to be experts in new technologies, and their general level is between medium and advanced. A total of 44.8% consider themselves to have a medium level of knowledge about ICT, compared to 44.7% who consider themselves to have an advanced level. Only 3.6% consider themselves experts. This information is not in accordance with the belief that digital natives feel fully competent in the use of digital technology and provides important information for teachers working with young people. Regarding the use of mobile devices as educational tools that have been planned by the teacher (inside or outside the classroom), the first two references are linked to using mobile devices for consulting information; specifically, consulting the virtual campus of the subject (80.2%) or other online material outside the virtual campus on the Internet (75.9%). In third place, and in a more active and participatory environment, is instant messaging with classmates (65.4%), something quite ingrained in their media practices.

Table 5: Common uses of mobile devices in classrooms.

Indicator	*Percentage*
Consulting online material	75.9% (681)
Using word processors	31.1% (279)
Taking notes of the teacher's explanations	49.6% (445)
Watching videos	45.9% (412)
Image editing/production	19.7% (177)
Use of specific apps for the subject	24.7% (222)
Instant messaging between classmates	65.4% (587)
Instant messaging between students and the teacher	27.4% (246)
Consulting the virtual campus of the subject	80.2% (719)
Geolocation	3.3% (30)

Source: Own elaboration.

Therefore, we highlight that mobile devices are used very little for creative, participatory or collaborative purposes, and there are few teaching actions expressly linked to student participation. We are therefore facing moderate, bland data, which is in accordance with the general feeling among students about the potential benefits of mobile devices in the classroom, and which suggests that there is much room for improvement from the teaching point of view.

3.2. *Qualitative results*

This section is organized based on the statements of male and female university students participating in the four focus groups described in the methodology section.

3.2.1. "Put distractions away"

The use of mobile devices is still not integrated into the classroom, in fact, it is even prohibited in many Spanish university classrooms. Young people, as digital natives, do not understand the reasons for this and the use of mobile devices continues to be a source of conflict in the teacher-student relationship, especially in the case of smartphones. For young people the mobile phone is their channel, their extension and they feel that teachers do not want to understand this.

> *It makes no sense when teachers take away your mobile phone. They say they are taking away "distractions". Technology is part of us. Changing screens. It can't be avoided.* (Female, Advertising, UPF, 2nd year, Barcelona)[1]

> *We are a generation of multitasking, of multi-channels. The teachers aren't right to go against that. It's natural and we can do different things at the same time.* (Female, Marketing and Digital Communications, EUNCET, 3rd year, Barcelona)

> *I don't like it that some teachers don't let us use our mobiles [...] Our mobiles come with us everywhere, so we should use them as a learning resource.* (Male, Primary Education, 3rd year, Huelva)

> *Technology is part of us. It's an obligation. I don't understand life without technology. I need to be connected to more than one thing. I can't just do one project at a time. It's involuntary. It's not that I'm not interested in one thing, it's that I need to be on more than one device. If not, I get anxious.* (Male, Advertising, UPF, 3rd year, Barcelona)

> *You can't say... you can't pick up the phone. We have to progress a lot in these things because we have everything on the street but not in the classroom. It's a barrier. Two different worlds.* (Female, Master's Degree of Education for Development and the Culture of Peace, UPO, Seville)

In some cases, they state that mobile devices are allowed and they like that, but there is an evident contradiction because they can only use them to take notes, as a substitute for traditional paper.

> *Yes, it's true that some teachers not only don't care but also say that we can use our mobiles, but not many. What happens is like everything, some people seem to be taking notes or consulting things or you are opening WhatsApp and reading the newspaper. This depends on the person. Taking notes on your phone is much less cumbersome than taking notes by hand, the tablet even on the mobile there are lots of people who take their own notes in "Notes" in the mobile. That's a big step, the fact that they don't ban technologies in class like years ago.* (Female, Master's Degree of Education for Development and the Culture of Peace, UPO, Seville)

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[1] The statements are transcribed as they were made in order to faithfully reproduce the attributed meaning, therefore, they may contain grammatical and syntactical errors.

As mentioned, the use of mobile phones in the classroom is not integrated into the learning process among the surveyed students. It is, however, a technology that is totally present in the classroom, but it is used behind the teacher's back, to disconnect from the class because it is not motivating them.

> *We reject classes and use technology to escape because they explain things in a boring way. If they explained things to us in another way, maybe we wouldn't be thinking about our mobiles. We have the computer and the mobile phone, and we use them to escape from what they are explaining to us.* (Female, Audiovisual Communication, URL, 3rd year, Barcelona)

> *We feel we are taking advantage of technology, but we use it to distract ourselves. We are constantly looking at our mobile. We are rejecting the class by using technology.* (Male, Audiovisual Communication, UPF, 2nd year, Barcelona)

Outside the classroom, and as shown by the questionnaire results, WhatsApp stands out as the leading tool for subject dynamics. The following quotes highlight the potential of this social network for doing academic work, something that is supported by the aforementioned quantitative data, mainly due to the application's speed and collaborative capacity. However, the teacher does not organize this use, it is not part of an educational strategy integrated into the teaching plan of the subjects but rather an informal strategy that has emerged from the students themselves to speed up the course dynamics. The subject continues for the students after class through WhatsApp but without the presence of the teacher.

> *WhatsApp is very integrated into the class, we have a group of the whole class and we talk about interesting things, important things about work, about exams, when we have to hand in work...* (Female, Social Education, UPO, 3rd year, Seville)

> *Sometimes our doubts are solved on WhatsApp faster than on a forum, for example.* (Female, Italian Erasmus, Social Education, UPO, 1st year, 21 years old, Seville)

Sometimes this social network is used to solve specific questions, but sometimes it is used as a substitute for applications that are part of the virtual campuses of many universities, such as Moodle forums.

> *I think the forum is not used any more for that reason, WhatsApp is faster* (Female, Master's Degree of Education for Development and the Culture of Peace, UPO, Seville)

3.2.2. Innovation not specifically associated with mobile devices

Students associate teaching innovation with technology in general, not just mobile devices, that is, for them teaching technology is also projectors and fixed computers in the classroom. To the question about which technological innovations they use, the students responded that they use Skype for tutorials with the teacher, or videos in conventional classes. For example, they accept that innovation is using Prezi for PowerPoint or Drive for Word. The general feeling is that there is little or very little innovation with technologies and that, furthermore, "traditional" technologies are not yet consolidated because there are obsolescence problems or difficulties in connecting to the Internet in many Spanish university classrooms. They believe that the bad functioning of technological resources limits both teachers and students when they try to apply new resources in classes or use methodologies that require ICT resources.

> *Taking advantage of the tools of the virtual classroom, forums and others ... In the subjects that use them, I only know one or two, well they do take advantage of them: tests, self-evaluations, questions that other students answer* (Male 1, Double Degree in Computer Engineering and Design and Development of Videogames, URJC, 3rd year, Madrid)

Although the students surveyed do not use the actual term, they speak very positively of the *flipped classroom* concept, where the teacher recommends viewing or reading prior to the face-to-face class.

Teacher X is very good, because he explains all the theory that you're going to cover that day, and the class is only to solve doubts or do exercises, so you're not going to a class for two hours to read a power point … It's better than the power point with 200 slides they show you (Male 3, Double Degree in Computer Engineering and Design and Development of Videogames, URJC, 3rd year, Madrid)

The teachers say it's innovation but afterwards we spend a lot of time looking at slides or a PowerPoint that we could look at when we get home (Female 1, Primary Education, 3rd year, Huelva)

In general, students understand innovation as what teachers do with traditional technological means. They do not consider smartphones or tablets as having educational possibilities, they reserve these for their personal use and, on the other hand, perceive them as a possible disturbance of the face-to-face class dynamics. The only group that had a perception of educational innovation that included mobile devices, without it being suggested, was the Barcelona group.

Adapt things that are being used in everyday life such as mobile phones and computers to make it easier and not continue to be a university like in the 50s (Male, Audiovisual Communication, UPF, 2nd year, Barcelona)

Provide new methods with technologies so that classes can break with tradition, so they are different from what there is so far. (Male, Advertising and Public Relations, UPF, 3rd year, Barcelona).

3.2.3. Motivation: the essential factor for using smartphones in the classroom

When it is suggested that mobile technologies could be introduced in the classroom, then students perceive this as necessary for increasing motivation in the education process. Students feel connected with this technology and believe using it in the classroom would motivate them.

To experience different classes, to be more attentive, to do classes directly from an experience that also motivates students more. (Male, Advertising and Public Relations, UPF, 3rd year, Barcelona)

The motivational factor […], the teacher used this resource because it is very close to us… learning is more cooperative (Female 2, Primary Education, 3rd year, Huelva)

A good experience was an optional task that was to make an infographic in a public management subject showing the characteristics that a public director should have. Lots of people did it, the best infographics were chosen, and it was very motivational. (Female, Audiovisual Communication, URL, 3rd year, Barcelona)

However, they are aware that teachers are not always prepared or motivated to integrate their language into teaching, which highlights the debate between digital natives and digital immigrants.

You can't transmit what you don't feel. There is a comic that says, I am innovative and then uses the digital book and digital blackboard but in the same way they are used traditionally. The support changes but not the methodology, not the techniques (Female 2, Primary Education, 3rd year, Huelva)

Change the method. The subjects that work on technology give a lot of information but later, in practice, the teachers don't get beyond Power Point. (Female, Master's Degree of Education for Development and the Culture of Peace, UPO, Seville)

The study participants consider the experiences with mobile devices that transcend the classroom as the most motivating.

It's motivating doing classroom work that does not stay in the classroom, that can be useful for everyone and spread outside the class. (Male, Audiovisual Communication, URL, 3rd year, Barcelona)

When it's work that can be published, it motivates us because we feel valued (Female, Marketing and Digital Communications, EUNCET, 3rd year, Barcelona)

The experience consisted of creating a Wikipedia page with the knowledge we had gained in class. What I've learned will be for everyone. The idea is that the university gives back to society what it receives. (Male, Audiovisual Communication, UPF, 2nd year, Barcelona)

One experience I remember was to do a blog. One of the tasks was to make 100 links to topics that interest you. They were small things, but you learned to make a blog with topics that you liked. It was very good and it was useful. (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

Social networks for educational purposes are valued positively as long as the content is motivating, not just the use of a social network in itself. In any case, they see it as a complement, not something central to the operation of the subject.

Social networks can be used for debates on topics of interest. For example, sexuality. (Male, Advertising and Public Relations, UPF, 4th year, Barcelona)

I had a teacher who summarized the topics in tweets on Twitter. It worked well. It was a complement outside of class too that was interesting. (Male, Advertising and Public Relations, UPF, 3rd year, Barcelona)

There is some controversy about whether introducing technologies in the classroom should be exclusive to certain subjects or they should be introduced in all subjects. However, students value the face-to-face class of some teachers and, in those cases, the technology included in the teaching or the personal mobile devices that they take to the classroom become totally expendable.

There aren't some subjects that are technological and some that aren't. It's not a good enough argument that subjects, like history, have always been taught this way so they should continue to be taught this way. (Female, Political Sciences, UPF, 3rd year, Barcelona)

It'll be more normal for work to be done through, for example, Instagram. It wouldn't be so normal for me if a teacher of politics wanted to share their Instagram profile. Some news about the prime minister, for example. In audiovisual communication, it makes more sense to share YouTube, Instagram or Facebook. (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

There are classes where I don't even touch my mobile phone and I use the computer for what I should use it for because the class is interesting. The teacher gave some great explanations. It was at 8:30 in the morning, optional and the class was full. That's talking about the validity of not using technology. No one was looking at their mobile phone. The importance is in the speaker. It is not that there are subjects that can use technology and others that can't. They used resources to get you hooked with very little technology. (Male, Advertising and Public Relations, UPF, 4th year, Barcelona)

Along these lines, students see it as artificial that teachers who are not digital natives introduce mobile devices into the classroom.

Technology is used a lot at my university. Computers and screens. Not the mobile so much. There are subjects that need to be up to date, like design, but in other subjects if it's not necessary to explain it in another way, using technology is a bit forced. In those cases, it doesn't work and it's funny. (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

Forcing a teacher to do something that they don't know how to do, that they don't like, ends up demotivating us. They ask us "what's wrong with you?". We value that you are doing this, but there are other ways. I don't know if the faculty makes them do it or they do it to get more

prestige. It seems like teachers have to be modern. When they try to use technology and it doesn't work for them, the teacher is not in control. A teacher needs to feel comfortable in what they do. (Male, Advertising and Public Relations, UPF, 3rd year, Barcelona)

Thus, contrary to how it might seem, students are not clearly positioned in favour of the use of technologies in the classroom. They see their introduction as unnatural in some cases and they value the diversity of learning methodologies.

You shouldn't always do the same thing or change everything. I think a middle point should be found. (Female, Political Sciences, UPF, 3rd year, Barcelona)

If the teacher wants to, they can use technology, but they shouldn't feel forced. They shouldn't feel pressured because everyone does it because maybe their method is just as good or better just talking than someone who has a thousand videos, a thousand PowerPoints and stories. (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

3.2.4. Sporadic integrated experiences

Students say they have not done many educational or innovative activities with mobile phones, and they hardly remember them; however, as the talk continues, some specific activities emerge. Experiences like Kahoot, which is used sporadically, are not highly valued.

Kahoot on mobiles or computers is very fashionable now. You don't learn much. The game only lasts for two minutes. (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

Kahoot is fine as a game but I don't like it as an evaluation method. Not as a test to assess what you know. There's a lot of luck to it. (Female, Audiovisual Communication, URL, 3rd year, Barcelona)

In general, students value the teaching dynamics that make studying content easier or help them with specific issues, such as the evaluation.

Plickers, a mobile application (only the teacher), the teacher scans the plickers, connected to her user, where she puts the exams according to the function of the plicker. It's like Socrative, maybe faster. It's like a QR, she goes scanning... (Male 5, Double Degree in Computer Engineering and IT Engineering, 2nd year, URJC, Madrid)

It guides you on how your learning of the theory is going, motivates you to study if you see that in a test you get a zero or a one, even if it doesn't count for the grade (Male 4, Double Degree in Computer Engineering and Video Game Design and Development, 3rd year, URJC, Madrid)

Although it is not generalized, there were some comments about possible advantages of mobile devices, such as anonymity, comfort, and universality.

Anonymity, which makes you participate more. When the teacher asks a question, only 60 people put up their hand. (Male 4, Double Degree in Computer Engineering and Videogame Design and Development, 3rd year, URJC, Madrid)

Comfort, everyone has a mobile... (Male 2, Double Degree in Computer Engineering and Videogame Design and Development, 3rd year, URJC, Madrid)

However, students reject an unnatural use of social networks, that is, forcing their use to make the subject more dynamic, if this implies artificiality in a tool that for them has another purpose.

There was an attempt to do a class on twitter in a sociology subject. The teacher used hashtags. At first several people were connected, then it just failed. You forget and they were boring topics like democratization of consumption. Every Tuesday from 6 to 8. At the beginning there were 30 of us, but in the end, you forgot the time. (Male, Advertising and Public Relations, UPF, 4th year, Barcelona)

> *In a class they made us watch a video and comment on WhatsApp and nobody responded. The students responded "good" or just with emoticons.* (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

3.2.5. Reflections on privacy

Many students interviewed are not keen on using social networks for educational purposes because they do not like blurring the boundaries between their academic and personal lives.

> *In one class, the teacher used Instagram to stay connected. If you're doing something private, like smoking a joint, it can bias the teacher's attitude. I think that it can be difficult for them to see our personal social networks. They can draw conclusions from your personal life when you're not in class or you don't hand something in. One option would be to make a second Instagram profile.* (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

> *There was a case of a comment from a teacher in a class related to a student's video on a social network. The teacher went too far. We talked about it and it didn't happen again. If the video is public, you as a teacher or like anyone, you can see it but it's invading the student's privacy by making a comment to the whole class.* (Female, Marketing and Digital Communications, EUNCET, 3rd year, Barcelona)

> *No comments should be made about private life issues. We aren't on the same level. There must be limits. Facebook and Instagram shouldn't be shared.* (Female, Audiovisual Communication, URL, 3rd year, Barcelona)

> *Sharing WhatsApp can be problematic because you can have a private photo. I once got a comment from a teacher because I was in the photo with my girlfriend.* (Female, Advertising and Public Relations, URL, 2nd year, Barcelona)

> *It is necessary to differentiate between what a person is like in the classroom and what they do outside of it. Otherwise it leads to a separation between teachers and students.* (Female, Marketing and Digital Communication, EUNCET, 3rd year, Barcelona)

4. Conclusions

This work confirms the conclusions of previous research in the field, and also draws attention to the need to insist on teacher training as a key element for integrating social networks into the higher educational space.

The research results provide empirical data that confirm previous studies on how social networks are part of the personal and media identity of university students. However, applying social networks in the classroom involves a series of unresolved tensions that need to be addressed in order to better harness their potential in the media literacy context. In general, this study confirms the extensive informal use of social networks in the Spanish university education environment, especially WhatsApp. However, we found that teachers apply social networks very little and not very creatively in this context. Consequently, students are critical of their use in university classrooms for pedagogical purposes.

Part of students' scepticism is related to teachers' sporadic and uncreative use of social networks in the classroom. According to the questionnaires, there are few teaching experiences that can be considered innovative; on the contrary, students highlight a predictable and often unsuccessful use of digital technology. Beyond the uncreative application of social networks in university classrooms (probably because teachers do not have specific training in these issues, rather than due to a lack of resources), we can affirm that teaching experiences with social networks that are well executed are highly valued by the students and successfully complete the learning process. Students consider that it is better not to use technology if it is not used appropriately, that is, if the media dynamics of the transmedia environments in which they are used outside education centres are not applied within the education centre.

It is not technology that makes a good teacher, but rather the attitude they apply it with. We have observed how the successful experiences that students comment on always lead to extra motivation when they do an activity. Therefore, social media can catalyse that passion-motivation necessary for a university learning process to be successfully carried out. Given the educational nature and content creation linked to the Education and Communication degrees which the student participants were studying, it would be interesting for the teacher not to impose specific content or a specific use of social networks, but rather integrate the content students already do outside the classroom into the teaching dynamics. An example of this has already been applied in the non-university school environment within the transmedia literacy framework (Scolari, 2018) and could be perfectly extrapolated with the necessary adaptations.

Concerning the unresolved tension on the issue of privacy, students are reluctant to use their personal social media accounts for academic purposes. Therefore, it is necessary to separate students' private spheres from their academic ones in teaching activities. It would thus be appropriate to create group or project accounts so that students do not have to use their personal accounts for academic work.

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