


# Positioning of traditional media regarding the educational use of smartphones in secondary education

## *Posicionamiento de los medios de comunicación tradicionales respecto al uso educativo de los móviles en educación secundaria*

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## ABSTRACT

This article analyses the ways in which traditional media (press, radio, and television) portray the educational use of smartphones in secondary education. The aim of this study is to find out how the traditional media reflect the educational use of mobile phones in secondary education. For the analysis, the media outlets leaders in the audience ratings in Spain were reviewed, as well as the ones that are leaders in the four autonomous regions that are included in the project (C. Madrid, C. Valenciana, Catalonia, and Castilla-La Mancha). A qualitative study of nearly 300 press, radio, and television news items from the last 10 years was carried out, utilizing an emergent labelling process aided by triangulation, which facilitated its refinement and the emergence of categories. The qualitative analysis was complemented by counting and graphing the quantitative data. The results obtained show a large number of news items that use the abuse of mobile phone usage by young people as a pretext to argue the need to forbid or regulate their educational use. Also, important voices are underrepresented in the discourse, such as those from families, young people, and experts in educational technology. Among the conclusions obtained, it is palpable that traditional media generate a state of opinion in which the use of these devices for educational purposes cannot be separated from their general use in daily life. The dissemination of good practices is thus overshadowed by the number of negative traits associated to mobile phone use, resulting in a discouraging narrative that prevents the spread of educational experiences with mobile phones in schools.

**Keywords:** smartphone, mass media, educational technology, secondary education, social environment

## RESUMEN

En el presente artículo se estudia el posicionamiento de los medios de comunicación tradicionales (prensa, radio y televisión) respecto al uso educativo de los móviles en la educación secundaria. El objetivo del presente trabajo es el de conocer cómo reflejan los medios de comunicación tradicionales el uso educativo de los móviles en la educación secundaria. Para ello se analizan los medios que encabezan los rankings de audiencias a nivel estatal junto con los que lo hacen en las comunidades autónomas que participan en el proyecto (Comunidad de Madrid, Comunidad Valenciana, Cataluña y Castilla-La Mancha). Se desarrolla un estudio cualitativo sobre cerca de 300 noticias de prensa, radio y televisión de los últimos 10 años. Se realiza un etiquetado emergente con procedimientos de triangulación que facilitan su refinamiento y la emergencia de categorías. El análisis cualitativo se complementó con el recuento y graficado de los datos cuantitativos. Los resultados alcanzados muestran un gran número de noticias que utilizan como pretexto el abuso de los móviles entre los adolescentes para argumentar la necesidad de prohibir o regular su uso educativo. También se vislumbran algunas voces ausentes en el discurso como son las familias, los jóvenes y los expertos en tecnología educativa. Entre las conclusiones obtenidas se observa que los medios de comunicación tradicionales generan un estado de

opinión en el que hay un continuo que no diferencia la vida en general con móviles de los usos educativos de estos dispositivos. La difusión de buenas prácticas queda eclipsada por todo ello, con lo que el estado de opinión que reflejan no anima a emprender experiencias con móviles en los centros educativos.

**Palabras clave:** teléfono inteligente, medios de comunicación de masas, tecnología de la educación, educación secundaria, ambiente social

## INTRODUCTION

Mobile telephony is a means of wireless communication. As commonly known, its customers use a device called a “mobile phone” or “mobile”. Mobile phones are a window to the world that is, undoubtedly, an essential part of the adolescents’ lives. In this regard, as highlighted in a 2013 study, Spanish children aged between 12 and 15 (the usual age for compulsory secondary education, also known as ESO in Spain) who had a mobile phone ranged from 58.8% at the age of 12 to 90.2% at the age of 15 (Instituto Nacional de Estadística [INE], 2014). In 2019, the use had grown to 63.9% at age 12 and 93.8% at age 15 (INE, 2019). Adolescents owning their own mobile phones is a controversial topic due to the uses they may give them and has sparked a lot of debates. In this context, the US’MOV research project (project PID2019-108041RB-I00 funded by MCIN/AEI/10.13039/501100011033/) sets out, among other objectives, to analyse the positioning (or discourse) of traditional media (press, radio, and television) regarding the educational use of mobiles in secondary education.

The media play a very important role in shaping public opinion. Their existence and regulation are included in most democratic legal systems around the world, such as the Spanish constitution (art. 20.1 on truthful information and art. 20.3, on pluralist regulation of public media). The need to influence is inherent to the media, as in the recurring television slogan “to educate, inform, and entertain”. Advertising, a primary source of income, depends on the media’s reach and influence. This influence is used by some powers to defend and promote certain interests (Terrones Rodríguez, 2018). They even go so far as to spread self-serving takes on reality and the so-called “single way of thinking”, which derives from the public’s tendency to “read” media that transmit a package of opinions and ideas (a narrative) that doesn’t challenge their beliefs or, in the worst case, to accept fake news from certain emerging media that round up an already ongoing narrative about reality (Waisbord, 2018). Fortunately, reading diverse and pluralistic media contributes to shaping critical citizens (Gutiérrez Martín & Tyner, 2012).

The media is interested in educational issues. Some media, such as the education supplements of *The Times* and *El País*, have historically included reputable op-ed

sections on this topic. Public policy, and in particular educational policy, is subject to media scrutiny in what has been called a state of “accountability”. This occurs in the same way that the vocabulary of “accountability” has permeated society through the media (Fernández González & Monarca, 2018).

The debate on education in Spain, based on various empirical reviews (Cabello, 2018; Sahuquillo Verdet, 2017), despite addressing permanent phenomena in everyday life, is linked to certain dramatic events, and is sometimes presented in a partial, superficial, and politically charged way. Sometimes it even becomes alarmist, as in the analysis of PISA data (Runte Geidel, 2016) or the phenomenon of bullying (Sahuquillo Verdet, 2017). However, even with all these shortcomings, it seems to contribute to raising awareness of the importance of educational issues and the need to improve public policies (González-Mayorga et al., 2017), thus shaping a political agenda for change (Sahuquillo Verdet, 2017).

Currently, there is a general perception that traditional media are in decline. The General Media Study (Asociación para la investigación de medios de comunicación [AIMC], 2021) points out that press consumption has declined by half in 10 years (from 40% to 20%). However, over the same period radio and television have maintained a similar level of public attention (around 80% of daily television viewers and 60% of daily radio listeners). It seems that using the Internet as an information source has taken over the space of the press and taken away consumption time from traditional media.

In regards to the educational use of mobile phones (as part of the strategy to use mobile devices in education, or m-learning), in the scientific field the evidence supported by research is quite conclusive. Although showing some challenges (such as distractions, dependence, reduction of face-to-face interactions), most research supports the educational use of mobiles in the teaching-learning process (Anshari et al., 2017; Dafonte-Gómez et al., 2021; Fernández Muñoz & García García, 2016; Salcines-Talledo et al., 2020).

Studies of “use or uses of” are part of the tradition of research in educational technology, based on educational, sociological, and anthropological perspectives (Cuban, 1986). It is argued that material culture, in this particular case technological artefacts, shapes and dialogues with the school. In addition, beliefs, values, and social support dialogue with what happens with the devices in schools (e.g., Vekiri & Chronaki, 2008).

In connection with these traditions, research tells us that families have a different view of the educational use of mobile phones. They consider that they have a negative impact on children’s attention span and hinder communication (González-Fernández et al., 2020). Consequently, parents have opted to regulate their use at home, with younger parents being the most restrictive (Sánchez-Valle et al., 2017). An example of this is the banning of mobile phones at home during

mealtimes (Latif et al., 2020). However, what is most interesting is that children acquire these inappropriate behaviours by imitating their parents (Terras & Ramsay, 2016), as even parents do not stop using mobile phones even during their childcare time (Kushlev & Dunn, 2018).

To reverse this situation, politicians, educators, and families should work together to educate young people in the responsible use of “mobile devices” (González-Fernández et al., 2020), which is a term that includes mobile phones as well as tablets and other wireless devices that enable online leisure and educational activities. The concern lies in the predominance of the personal leisure dimension when mobile phones are used in family or educational situations. In this paper we will only analyse the latter, although we will contextualise the perception of the device in other social situations. The limited use of mobile phones in schools causes students to transfer this learning to the home (Hammer et al., 2021). In this sense, families must take full responsibility, although many of them are not prepared for this, nor are they interested in receiving training or guidance (Ramírez-García et al., 2020).

When it comes to teachers’ views, we observe that most of them are predisposed to include this technology in the teaching-learning process, with the youngest showing the greatest interest (Tabuenca et al., 2019). However, its expansion is hindered mainly by two elements. On the one hand, there is a great lack of knowledge among teachers regarding the educational use of mobile phones (Boude, 2019; Brazuelo Grund et al., 2017). On the other hand, there are problems related to the violation of minors’ privacy or the crimes associated with this violation.

Related to these problems, we find that the use not only of mobile phones but of all mobile devices in education has been associated with addiction and nomophobia, or fear of not having access to a mobile phone (Gozum et al., 2020; Romero Rodríguez & Aznar Díaz, 2019). In turn, nomophobia has been associated with internet addiction (Gezgin et al., 2018). Furthermore, inappropriate uses of mobile phones are also related to school violence or cyberbullying (Méndez et al., 2020), and to higher levels of superficial learning (Loredo e Silva et al., 2018).

It is worth asking to what extent this state of affairs has taken hold among the population, teachers and educational administrations on the basis of a narrative constructed by traditional media. Thus, the aim of this paper is to find out how traditional media reflect the educational use of mobiles in secondary education. The initial working hypothesis is that these media focus their news on the negative aspects of mobile phone use.

## METHOD

A qualitative research design approach was applied using content analysis, an appropriate procedure for the study of social representations (Krippendorff, 1980; Martín Serrano, 2004).

The study sampled the most relevant traditional media, according to different rankings, in the press (written and digital), television and radio. It is therefore a purposive sample of sources. Starting with the press, the most important newspapers are (in order of circulation): El País, La Vanguardia, El Mundo, ABC, El Periódico, and La Razón. However, if we look at digital media circulation, the ranking is very different: La Vanguardia, ABC, El Español, El Mundo, El Mundo, 20minutos, El Confidencial, El País, OKdiario, El Periódico, and elDiario.es. Due to these differences, we decided to conduct a mixed test between print and digital dissemination. To access the articles, in addition to common search engines, we used the Spanish National Library database (<http://hemerotecadigital.bne.es>), as well as some regional newspaper library databases and those of the newspapers themselves.

For radio and television, and at the risk of missing other spaces that are part of the public information service provided by these media, the search was organised using the rankings of their news programmes. The main radio stations are (in order): Ser, Cope, Onda Cero, RNE, Rac 1, Catalunya Ràdio, and EsRadio. In the case of television, we found that the news programmes with the largest audiences are (in order): Antena 3 Noticias 1, Antena 3 Noticias 2, Informativos Telecinco 21h, TVE Telediario 2, Informativos Telecinco 15h, TVE Telediario 1, La Sexta Noticias 20h, and La Sexta Noticias 14h. In addition to national media, the most representative media of the autonomous communities participating in the research project (C. Madrid, C. Valenciana, Catalonia, and Castilla-La Mancha) were also included. For all the material analysed, see Mateu-Luján et al. (2022).

The keywords used in the search for the different news items were (in Spanish): Mobile Phones/Smartphones, Youth/Adolescents, High School, School, Educational institutions, Secondary, Education, Teachers, Families, and Uses. For each of the articles retrieved, the following information was collected: title, national/regional media, keywords, political positioning, date, and link to the document (for digital sources). This study covers from 2010 to 2020, as it was assessed that this is when the massive presence of mobile phones in households is consolidated, aiming at 100% of the population (INE, 2020).

The search reached a certain saturation of news, which began to be repeated for different types of media and topics.

Once the search was concluded, the team assigned codes to each article freely, without a pre-existing set of labels. With the emerging codes, their relevance was

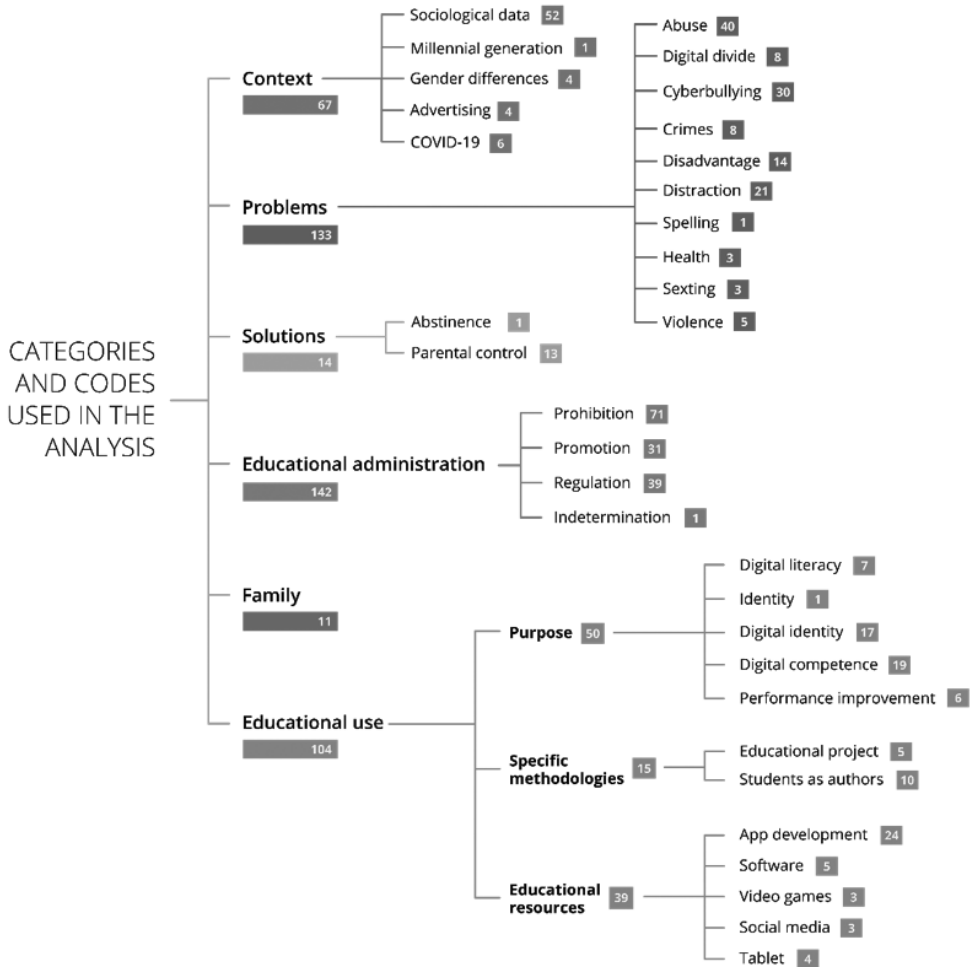
discussed, they were systematised and a common list was agreed upon, with which the first coding was revised. Furthermore, in order to triangulate data, a second coding pass was carried out by a different member of the team and the proposed codes were discussed. In the inter-rater check, only the categorisations were the coders agreed were accepted (Krippendorff, 1980). The research team becomes a validation community and applies peer validation (Flick, 2007). Researchers are the basis for triangulation (Aguilar & Barroso, 2015; Denzin, 1970; Krippendorff, 1980). With the results obtained, the data was plotted to understand the structure of the coding, which also helped to organise the emerging categories and generate new ones.

### **Data analysis**

According to the guidelines determined by the methodology, 203 press, 16 radio and 46 TV evidences were found (265 in total), in the period 2010-20, on the use of mobiles in secondary education. Figure 1 shows the total number of codes counted and their grouping by category.

**Figure 1**

*News analysis on the use of mobile phones in secondary education. Codes and categories*



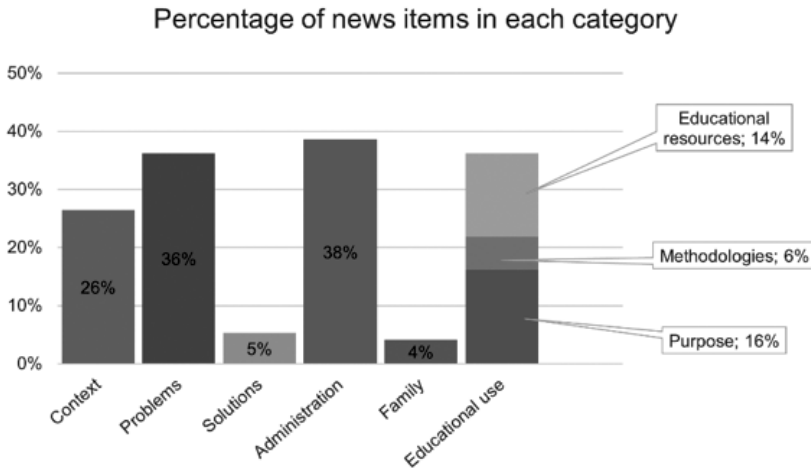
Note. Self-made, based on Mateu-Luján et al. (2022).

With the data obtained from the coding, figure 2 presents a diagram showing the percentage that each category occupies in relation to the total number of news items analysed. To do this, all the news items were counted once, whether they had one or more labels in the same category.



**Figure 2**

Percentage share of each category in relation to the total number of news items



Note. Self-made, based on Mateu-Luján et al. (2022).

Based on the distribution of categories in Figure 2, four main sub-reports were developed: Context of mobile phone use by adolescents, Problems and solutions associated with mobile phone use by adolescents, Role of the family and the educational administration, and Educational use of mobile phones in secondary education. The analyses of each of these sub-reports are presented in the results section below.

## RESULTS

### Context of mobile phone use by adolescents

According to the data obtained, the “context” category is present in a quarter of the news items analysed. Table 1 shows the records obtained for each of the codes that make up this category.

From the above data, we can see that the “sociological data” code accounts for almost 80% of the frequencies in this category. Sociological data is often used to highlight the misuse of mobile phones by teenagers (e.g., Antena 3, 12/10/2014). However, some news items highlighting the expansion of educational projects that use mobile phones as an educational resource can also be found (e.g., elDiario.es, 13/4/2017).

**Table 1***Code frequency for the “context” category*

Category	Tags	Press	Radio	Tv	Total
<b>Context</b>		<b>59</b>	<b>3</b>	<b>5</b>	<b>67</b>
	Sociological data	47	1	4	52
	Millennial generation	1			1
	Gender differences	4			4
	Advertising	3	1		4
	COVID-19	4	1	1	6

*Note.* Self-made, based on Mateu-Luján et al. (2022).

Regarding the rest of the codes, although their presence is very reduced, we will highlight some relevant facts. In relation to the label “gender differences”, newspapers assert that women are more likely to face a predator online (elDiario.es, 17/12/2019) and that their dependence on mobile phones is much greater than that of men (El Punt Avui, 11/2/2016). On the other hand, their academic performance is less impaired (La Vanguardia, 5/6/2017) and their participation in STEM programmes is even increased (La Vanguardia, 2/26/2017).

Finally, it is necessary to look at those news items that refer to COVID-19 and the use of mobiles. What is interesting about these articles is that, although there are only 6 of them, they all point to a turning point in the use of mobile phones as an educational tool. In other words, due to the forced confinement, both educational administrations (e.g., OKdiario, 3/30/2020) and teachers (TV3, 19/5/2020) and families (EsRadio, 5/8/2020) highlighted the educational use of mobiles.

### **Problems and solutions associated with adolescents’ mobile phone use**

Problems arising from the use of mobile phones among teenagers are a recurring theme in the media. Thus, it is not surprising that a third of the news items analysed focus on the negative aspects of the use of mobile technologies. In contrast, we find that the number of news items that propose solutions to these problems is practically negligible. Table 2 shows the frequency of codes assigned to these categories:

**Table 2**

*Frecuencia de etiquetas para las categorías “problemas” y “soluciones”*

Category	Tags	Press	Radio	Tv	Total
<b>Problems</b>		<b>104</b>	<b>4</b>	<b>25</b>	<b>133</b>
	Abuse	27	1	12	40
	Digital divide	6		2	8
	Cyberbullying	19	3	8	30
	Crimes	8			8
	Disadvantages	13		1	14
	Distraction	21			21
	Spelling	1			1
	Health	3			3
	Sexting	1		2	3
	Violence	5			5
<b>Solutions</b>		<b>9</b>	<b>1</b>	<b>4</b>	<b>14</b>
	Abstinence		1		1
	Parental control	9		4	13

*Note.* Self-made, based on Mateu-Luján et al. (2022).

Based on these results, an analysis of the data obtained was then carried out. First of all, we began with the “problems” category. One of the themes that appears most frequently is abuse. Mobile phones are presented as addictive devices —especially referring to statements by the Minister of Education Isabel Celaá (e.g., TV3, 7/9/2018)—, which take up a large part of young people’s free time, and require action by parents to regulate their use (Telecinco, 10/11/2020).

Mobile phone dependency is even linked to illnesses such as depression (Las Provincias, 3/10/2019), attention deficit disorder (OKdiario, 31/8/2017), or addiction to substances such as tobacco or alcohol (El Punt Avui, 2/11/2016), and the opinions of associations such as Proyecto Hombre (Las Provincias, 6/3/2018), which focuses on the fight against these and other addictions, are presented.

Following closely on the heels of abuse, the second major concern presented by the media in relation to mobiles is cyberbullying. Mobile phones are used as an extension or replacement of physical bullying that occurs in or around schools and focuses on the sending of hurtful messages or insults, either directly or through social media. The media have attempted to define cyberbullying (e.g., *La Sexta*, 9/9/2019) and, in some cases, to uncover some of its lesser-known aspects, such as the relationship between adults and young people (*Las Provincias*, 27/6/2018), its greater impact on women (*elDiario.es*, 17/12/2019), its growth or decline (*TeleMadrid*, 14/7/2020), or measures to tackle it (*20minutos*, 11/12/2008).

Despite this, in most cases cyberbullying appears in the media as one of the various reasons for regulating or banning the use of mobile phones in the classroom, and there is no detailed analysis of its characteristics or impact, whether in news stories (e.g., *El Periódico*, 10/9/2019), interviews or opinion columns (*Catalunya Ràdio*, 18/12/2015).

After abuse and cyberbullying, distraction is the main issue that appears in the media to argue the problems caused by the use of mobile phones, and as a justification for their prohibition or regulation in the classroom. Distraction is associated with the abuse of mobile phone use (*OKdiario*, 31/8/2017), less socialisation or contact with their environment, lower school performance (*Las Provincias*, 31/8/2017), or school failure (*El Español*, 29/1/2015). One of the culprits of this distraction would be the easy and constant access to social networks (*Ara*, 13/3/2017).

Finally, the last of the major codes found in the media is the one referring to the disadvantages of mobile phone use. This has appeared in major reports (*La Vanguardia*, 6/3/2015), where the use of technologies in the classroom is reviewed, with a complementary analysis for mobile devices and the problems they entail (*La Vanguardia*, 6/5/2017), in opinion articles (*La Vanguardia*, 9/6/2018) or in articles on political positionings (*La Vanguardia*, 14/9/2018). This corroborates the most important disadvantages that appear in the media in previous evidence.

Next, we will address those codes that, although they have a lesser presence, deserve special mention. Firstly, “digital divide”. This label has been assigned to news items that address the unequal access of students to technology for socio-economic reasons. Consequently, this difficulty of access can make its use within the school problematic (e.g., *El Confidencial*, 25/10/2020).

The other code of average use has been “crime”. Mobile phones sometimes appear in the press in connection with criminal activities involving young people (either as perpetrators or victims). Among these criminal activities we find violence towards teachers (*OKdiario*, 22/11/2016), computer crimes (*Las Provincias*, 17/3/2018), sending erotic photos or sexting (*Las Provincias*, 15/10/2013), and sexist violence (*elDiario.es*, 7/1/2015).

Closely related to crimes is the code “violence”, which identifies activities that could constitute a crime, such as recording violent acts at school (El Español, 29/5/2019). Or also sexting, which has appeared on a few occasions as another of the problems listed to justify the prohibition or regulation of mobile phones in schools (TV3, 16/12/2015).

Once the “Problems” category has been analysed, it is time to analyse the “Solutions” proposed by the media. Specifically, as seen in table 2, only two codes have been included: “abstinence” and “parental control”. Due to the scarce presence of the former, only the latter is analysed. Parental control is exercised through smartwatches or smartphones (Las Provincias, 16/2/2020). These allow, through the use of parental control apps, to limit the time of use and access to calls or content (Telecinco, 15/9/2011). However, it is important to note the existence of surveys that show that families are unaware of these digital parental control systems (elDiario.es, 17/10/2015).

### Role of the family and education administration

This section addresses two key points of view in the development of the educational use of mobiles. On the one hand, we find the views of the families and, on the other, those of the educational administration. Table 3 below shows the results of the coding:

**Table 3**  
*Frequency of codes for the “Family” and “Educational administration” categories*

Category	Tags	Press	Radio	Tv	Total
<b>Family</b>	Family	<b>10</b>	<b>1</b>		<b>11</b>
<b>Educational administration</b>		<b>95</b>	<b>8</b>	<b>39</b>	<b>142</b>
	Prohibition	44	5	22	71
	Promotion	27		4	31
	Regulation	23	3	13	39
	Indetermination	1			1

*Note.* Self-made, based on Mateu-Luján et al. (2022).

With regard to the “Family” category and code, although its presence is very low, some conclusions have been drawn. It can be seen how the opinion

of families is not strictly gathered, but rather it seems that they speak on behalf of them, or a small interview is carried out with specific families (e.g., Antena 3, 19/12/2019). These media report that families are against its use in schools (El Periódico, 7/9/2019).

In relation to the role of the “educational administration”, “prohibition” is the most frequently presented aspect. Thus, the media reports that the central educational administration is in favour of not using mobile phones in schools (e.g., Diari de Girona, 07/09/2018). Along the same lines, so are the autonomous communities of Galicia (20minutos, 5/1/2020), Madrid (OKdiario, 21/9/2019) and Castilla-La Mancha (La Vanguardia, 24/11/2014).

The next label we find is “regulation”. Generally, this is linked to the label “prohibition”. In a broad sense, according to the news collected, regulation is nothing more than a ban on the use of mobile phones at certain times or in certain spaces. Thus, for example, their use is restricted during breaks (Catalunya Ràdio, 10/10/2016) or the times when the mobile phone can remain on the desk or must be switched off in the backpack (e.g., TV3, 12/9/2017).

As can be seen in table 3, the “promotion” code, although it presents a not insignificant frequency in the media, occupies the third position within this category. Most of these news items refer to Catalonia (e.g., La Vanguardia, 19/7/2013) and their promotion is possibly conditioned by the fact that Barcelona is the capital of the Mobile World Congress (TV3, 5/3/2015).

## **Educational use of mobile phones in secondary education**

This last section of the analysis deals with labels related to the educational use of mobile phones in education. Due to their breadth, these have been structured into three categories, namely: “purpose”, “specific methodologies”, and “educational resources”. Table 4 shows this distribution, as well as the number of evidences found for each category:

First, we will start by analysing the most representative codes in the “purpose” category. In relation to the “digital literacy” code, there are conflicting ideas. On the one hand, the media echo educational initiatives that call for the use of mobile phones in service of education (e.g., La Vanguardia, 25/2/2018). On the other hand, they echo certain concerns about situations that affect the integrity of adolescents, which are directly criminal or that call for some kind of reaction from the educational field. Through interviews with those responsible for educational programmes, they show the need for educating on the social uses of mobile phones, which is the responsibility of the educational institution (Catalunya Ràdio, 18/12/2015).

**Table 4**

*Frequency of codes for the “purpose”, “specific methodologies” and “educational resources” categories*

Category	Tags	Press	Radio	Tv	Total
<b>Purpose</b>		<b>39</b>	<b>11</b>		<b>50</b>
	Digital literacy	3	4		7
	Identity	1			1
	Digital identity	15	2		17
	Digital competence	15	4		19
	Performance Improvement	5	1		6
<b>Specific methodologies</b>		<b>8</b>	<b>4</b>	<b>3</b>	<b>15</b>
	Educational project	1	4		5
	Students as authors	7		3	10
<b>Educational resources</b>		<b>30</b>	<b>2</b>	<b>7</b>	<b>39</b>
	App development	17		7	24
	Software	5			5
	Video games	3			3
	Social media	2	1		3
	Tablet	3	1		4

*Note.* Self-made, based on Mateu-Luján et al. (2022).

On other occasions, when talking about activities with mobile phones in secondary schools, they emphasise the specific literacy purpose (such as teaching reading and writing) that these activities ultimately have (e.g., Catalunya Ràdio, 8/11/2019). These literacy acquisition activities are aimed at improving “digital identity” (OKdiario, 23/4/2018). On other occasions, they are aimed at something more generic, such as students’ “digital competence” (El Periódico, 25/2/2019).

The last code we find within the “purpose” category is “performance improvement”. Although there is a certain vision in the media of mobiles as tools to improve students’ performance (e.g., La Vanguardia, 4/5/2016), the fact is that

the negative view of the effect of mobiles on students' academic performance is predominant. Thus, problems are identified as contributing to low grades, such as distraction, which is characterised, in the extreme, as addiction (Antena 3, 15/9/2019).

With regard to "specific methodologies", two codes have been assigned to this category: "educational project" and "students as authors". Regarding the former, the education sections of traditional media include some showcases, talking about the importance of considering working with mobiles as a pedagogical task (e.g., Ser, 7/6/2018). For "students as authors", we observed that the media publish some reports in which students appear developing materials (TV3, 25/2/2014). Another methodological form that gives relevance to the active role of students with mobiles derives from the COVID-19 pandemic (TV3, 19/5/2020).

Finally, we find the "educational resources" category. In relation to the first code, "App development", it is worth noting that students are involved in projects in which work with mobiles plays a leading role (e.g., 20minutos, 21/7/2010). Taking advantage of this technological work, some transversal objectives are included, such as the fight against sexism (20minutos, 28/1/2015), business entrepreneurship and innovation (La Vanguardia, 28/02/2019), and the responsible use of mobiles in terms of usage time (El Periódico, 7/1/2017).

The next code to be analysed is "software". In it, we can see that educational authorities have tried to streamline teachers' work through specific mobile phone software (e.g., 20minutos, 26/1/2018). On the other hand, there has also been a vested interest in facilitating access to teaching through a wide range of devices, including mobile phones, as highlighted in the COVID-19 pandemic (20minutos, 23/4/2020). Likewise, some specific software for teaching Geography, Physical Education, and Physics is mentioned (Levante-EMV, 22/11/2017).

With regard to the news items coded as "video games", it should be noted that they question their educational use. They are not seen as an educational opportunity, but as part of an offensive that attacks the integrity of young people, and from which they should be protected (e.g., El Punt, 2/11/2016). Finally, it should be noted that, as with video games, few media are committed to the educational use of social networks (La Vanguardia, 18/7/2013).

## **DISCUSSION AND CONCLUSIONS**

This study found that traditional media spread a problematic view of adolescents' use of mobile phones, emphasising a worrying context, a continuum that does not differentiate life in general from school activities, nor the problematic uses of mobile phones in both contexts, which alarms the population in general and educators in particular even more.



This research corroborates the initial hypothesis that traditional media are dominated by news stories that warn about the negative consequences of mobile phone use.

Moreover, this view of the educational use of mobiles in education is focused on the predominant political discourse. As noted in the results, there is a huge weight of news stories pointing out the disadvantages of including mobiles in education and linking them to the statements of the educational administration and even political parties. This question brings us back to the idea of the media as an echo chamber raised by Waisbord (2018). However, more than specific politicians, the media reflects the reluctance of the educational administration to use mobile phones in the educational system since, even when they allow it, they want to regulate it. For example, the Catalan educational administration has legislation that promotes the use of mobile phones in schools; however, when talking to the media, they express concern and the need to regulate the harmful use of these devices. In the international context, educational administrations such as the French and Australian governments have been banning these devices, sometimes supported by research by economists (Beland & Murphy, 2016).

This state of alarm reflected in the media is based on sociological assessments used indiscriminately or on medical diagnostics that are not applicable to everyday life, but are presented as regular effects on any type of mobile phone use.

On the one hand, the main argument put forward to forbid or regulate the use of mobile phones is that of their abuse or misuse, with the word “addiction” being very present in this type of news reports. This discourse has been highlighted by Sahuquillo Verdet (2017). Thus, there is an obsession with emphasising the word “addictions” (in line with some studies such as Romero Rodríguez & Aznar Díaz, 2019) when these do not have a real weight for the population as a whole in the problem of mobile phone use (Ministry of Health, 2018), nor are they supported by the WHO (ICD-10) or the APA (DSM-V) (Castillo & Ruiz-Olivares, 2019).

On the other hand, cyberbullying is the second most used argument in traditional media supporting the regulation or prohibition of the use of mobile phones. However, in the current context, cyberbullying can hardly originate within schools. In this sense, Buelga et al. (2022) state that there is a global need to introduce effective action plans in the school context that promote the healthy use of technologies. Pardo-González and Souza (2022) also add the importance of educating families. Consequently, banning mobile phones in the school context could have counterproductive effects, since we lose the opportunity to educate about their use in a safe environment.

Another very relevant aspect of traditional media’s rationale is that they use a great deal of sociological data to construct their news reports. However, it is

surprising to find how different media sometimes can use the same sociological data to argue both for and against the use of mobiles as an educational tool.

In terms of the content they disseminate, the traditional media convey certain messages about the relationship between education and mobile phones. Their news and reports cover forms of control that can be exercised by families at home. Much emphasis is also placed on the concern of the educational administration about the extent of these problems in the educational sphere. The dissemination of good practices is overshadowed by all this, so that the state of opinion they reflect does not encourage experiences with mobiles, which would be desirable at this point in time (Selwyn & Aagaard, 2021). The media show isolated initiatives that have been carried out by some teachers or schools and which have had a great impact on the teaching-learning process of the youngest pupils.

That being said, some limitations were observed in this study.

One of the limitations is associated with the very nature of the information retrieved. The contents of the articles and the lack of rigour in their writing (unintended, but subject to the immediacy of the media and the difficulty of triangulating the information) condition the type and validity of the results.

There is also a mixture of opinions from individuals (with the bias that may be introduced by what would be equivalent to “self-reported data”), politicians (who promote some educational programme while downplaying its limitations) and academic experts (which are seldom represented and can be induced to offer a balanced opinion).

Some opinions are only added to reinforce discourses. This is the case with academic experts. They focus on problems related to the misuse of mobiles in general, and do not talk about their educational use.

There are hardly any voices from young people, secondary school teachers or families (4% of the data collected).

With regard to the news search methodology, the limitations included access to specific content in video form that is poorly labelled (by the media themselves) in their video on demand services; the excessively long podcasts that are impossible to code effectively; the mix of news agencies reports and radio and television broadcasters’ news channel strategies (which muddies the authorship of the articles and makes assigning a special interest to a media outlet difficult), or the fact that it is merely an echo of more general initiatives disseminated by radio and television stations; or problems in determining intentionality in news articles because of the need for pay-per-view strategies.

It also occurred that some media are under-represented due to their lack of proper archiving of their contents, or that others are over-represented because they have proper openly accessible archival systems (particularly in radio and television).

As practical implications of this research, some recommendations can be drawn from the study. Educators, when basing their actions with technology in secondary schools, should take the general state of opinion in the media that this study reflects with caution, in particular the sociological assessments and medical implications that the media recurrently report. The conditions for the use of mobile phones in school are not indiscriminate, nor continuous, and can be accompanied by work on the values that should govern their use both at school and in life in general. Work on the ethical dimension of the use of devices is an important part of the strategies for achieving digital competence (Merma-Molina et al., 2021). Complementarily, media education would be desirable (Gutiérrez-Martín & Tyner, 2012) which, although being a more general strategy, would help to balance this state of opinion.

On the other hand, although there is undoubtedly a need for more preventive education for young people on the use of mobile phones (e.g., Castillo & Ruiz-Olivares, 2019), it would be desirable to connect schools with families to temper the more alarming views around the use of mobiles, as some schools already do (Freitas-Cortina et al., 2019), given that parental mediation is fundamental in problematic uses (e.g., Yao et al., 2021). At the same time, schools could promote training actions open to the community, that offer an educational vision of the uses of mobiles. They may not change the general state of opinion, but they would help to build alternatives for more appropriate uses that would gradually take hold in the population and in adolescents themselves.

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