The use of mobile devices in secondary education: perceptions and regulations

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Abstract

This study explores perceptions of cellphone use in secondary education, based on responses from 301 first-year students at Catalan universities. Gender, school type, and age of first phone ownership did not significantly influence perceptions, though older students found devices slightly less useful. Most participants acknowledged existing rules but noted weak enforcement. Phones were valued for tasks like information searches and audiovisual production, but less so for peer communication. Concerns about privacy and health existed but were not viewed as major learning barriers. These results highlight the need for institutional strategies to ensure rule enforcement and train educators in effective cellphone use. They also stress the importance of adapting policies by educational stage to enhance benefits and reduce risks associated with cellphone use in classrooms.

Keywords: cellphone; secondary education; regulations; perception; impact

Resum. *L'ús de dispositius mòbils a l'educació secundària: percepcions i normatives*

Aquest estudi explora la percepció d'aquest ús en l'educació secundària, a partir de les respostes de 301 estudiants de primer curs del grau d'Educació de diverses universitats catalanes. El gènere, el tipus de centre i l'edat d'adquisició del primer mòbil no van influir significativament en la percepció, tot i que els estudiants de més edat tendien a considerar-los lleugerament menys útils. La majoria va reconèixer l'existència de normes, però

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en va qüestionar l'aplicació estricta. Els mòbils van ser valorats positivament per a tasques com la cerca d'informació o la producció audiovisual, però menys per a la comunicació entre iguals. Tot i que hi havia preocupació per la privacitat i la salut, no es van considerar obstacles importants per a l'aprenentatge. Aquests resultats evidencien la necessitat d'estratègies institucionals que reforcin el compliment de les normes i la formació docent en l'ús pedagògic del mòbil, així com de polítiques adaptades a cada etapa educativa per optimitzar els beneficis i minimitzar els riscos associats.

Paraules clau: telèfons mòbils; ensenyament secundari; normes; percepció; impacte

Resumen. *El uso de dispositivos móviles en la educación secundaria: percepciones y normativas*

Este estudio explora la percepción de dicho uso en la educación secundaria, a partir de las respuestas de 301 estudiantes de primer curso del grado de Educación en diversas universidades catalanas. El género, el tipo de centro y la edad de adquisición del primer móvil no influyeron significativamente en la percepción, aunque los estudiantes de mayor edad tendieron a considerar los dispositivos ligeramente menos útiles. La mayoría reconoció la existencia de normas, pero señaló una aplicación poco estricta de las mismas. Los móviles fueron valorados positivamente para tareas como la búsqueda de información o la producción audiovisual, pero menos para la comunicación entre iguales. Aunque existía preocupación por la privacidad y la salud, no se consideraron barreras importantes para el aprendizaje. Estos resultados subrayan la necesidad de estrategias institucionales que refuercen el cumplimiento normativo y la formación docente en el uso pedagógico del móvil, así como de políticas adaptadas a cada etapa educativa para maximizar beneficios y reducir riesgos.

Palabras clave: teléfonos móviles; enseñanza secundaria; normas; percepción; impacto

Summary

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1. Introduction

Information and communication technologies (ICTs) have transformed education, enabling personalized learning, motivation, autonomy, and collaboration (Cervera-Olivares et al., 2024; Garcés et al., 2016; Urcid, 2023). However, technology is not neutral; its impact depends on context (Area, 2024; Navarrete & Mendieta, 2018). Mobile use brings risks: distraction, addiction, inequality, cyberbullying (Flores & del Arco, 2023), safety issues (Mejía, 2020), nomophobia, and sexting (Pascuas et al., 2020).

Livingstone and Stoilova (2021) classify risks as content, contact, behavioral, and contractual. UNICEF (2021) highlights fake news, harmful, and illicit content. Mobile devices are key to young people's digital identity but also lead to overexposure, blurring the line between visibility and privacy, potentially harming reputation (Vilanova, 2023).

Students have the right to develop digital competence for full societal participation (Williams et al., 2020). This skill, included in the Spanish curriculum since Royal Decree 1513/2006, is essential by the end of compulsory education. The Catalan Digital Education Plan (2020–2023) promotes digital skills, though in 2024–2025 mobile phone use was limited to pedagogic purposes, favoring laptops and tablets.

Around 33% of adolescents exhibit problematic internet and social media use (UNICEF, 2021). Excessive screen time is linked to obesity, poor physical condition, mental health issues, and low self-esteem (Casadesús et al., 2023). The Spanish Pediatrics Association (2023) warns of effects on neurodevelopment. The excessive use of digital devices is now viewed as a public health concern.

The use of these devices in classrooms raises concerns about protecting students' personal data. Schools now manage more personal and academic data than ever (AEPD, 2024a), but data protection capabilities have not kept pace (Díaz Barahona, 2020). Despite the General Data Protection Regulation (EU 2016/679) taking effect in 2018, challenges remain. In response, the Council of Europe published the *Children's Data Protection in an Education Setting* report (2021) to safeguard minors' data in educational contexts.

In Spain, digital rights were first regulated by Organic Law 3/2018 on Data Protection and Digital Rights (LOPDPGDD). Article 83 affirms that the education system must ensure responsible, critical, and safe engagement with digital media. The AEPD (2024b) stresses that the use of cellphones and tablets in the classroom must meet principles of proportionality, suitability, and necessity. Hence phones should only be used when the benefits outweigh the potential harm.

Concerns about cellphone use in schools have led countries such as Italy, France, and the Netherlands to ban them at certain stages (Albalad, 2023), with support from parent-led groups like *Adolescents without Cellphones* (Area, 2024). Catalonia also restricted their use in 2024–2025, prioritizing laptops (Departament d'Educació, 2024). However, UNESCO (2023) advocates for their use when it is appropriate, equitable, scalable, and sustainable.

Prohibiting cellphones is not the solution; many authors advocate using them as pedagogical tools (Urcid, 2023) and establish clear boundaries to prevent adverse consequences (Calero et al., 2025). Area (2024) calls for educational measures and reflection on "why educate and how to do it with technology" (p. 55).

Flores and del Arco (2023) argue for clear guidelines, education on responsible technology use, and integration of digital awareness into the curriculum. Pascuas et al. (2020) propose regulations to promote healthy learning. The Catalonia School Council (2019) emphasizes rules that respect dignity and freedom and highlights the role of a designated teacher as data protection officer before the Catalan Data Protection Authority.

It is fundamental for schools and teachers to promote students' independence while ensuring digital security and encouraging responsible and healthy

digital use (Vilanova, 2024). Digital competence must include awareness of the risks associated with the inappropriate use of cellphones, such as cyberbullying, loss of privacy, and excessive distraction (Departament d'Educació, 2024).

This study explores a highly relevant yet under-researched topic in education: students' opinions about the growing but controversial presence of cellphones in secondary schools. Despite existing regulations, mobile devices have pedagogical potential if used appropriately. This study addresses a research gap by focusing on students' perceptions of their use in Compulsory Secondary Education, Baccalaureate, and Vocational Training. Understanding their views is essential for identifying resistance, perceived benefits, and areas for improvement.

The study asks: What do students know about cellphone regulations? To what extent do they find them useful for learning? What is their perception of widespread cellphone use in schools? These insights can inform future educational policies.

2. Methodological design

2.1. Objective and instruments

The study aims to understand students' opinions on cellphone use in secondary education, including Compulsory Secondary Education, Baccalaureate, and Vocational Training. A quantitative, non-experimental, and descriptive approach was employed (McMillan and Schumacher, 2005; Rubio, 2015). A two-part questionnaire was used for data collection. The first part gathered demographic information (gender, age, university access route, type of educational institution previously attended, and age of first cellphone), while the second contained 27 items on cellphone use in education, divided into three sections: (1) regulations on cellphone use (9 items, Yes/No/No Answer), (2) perceived educational usefulness (10 items, 5-point Likert scale), and (3) general agreement on cellphone use in schools (8 items, 5-point Likert scale). Table 1 provides full details of these items.

Once the questionnaire items were defined, an Exploratory Factor Analysis (EFA) validated the structure, confirming three factorial dimensions that explained 53.9% of the total variance:

— Factor 1 (22.2%): Items 10 to 19, reflecting the dimension "Degree of agreement on the usefulness of cellphones in learning."
— Factor 2 (18.6%): Items 20 to 27, defining "Degree of agreement on the use of mobile devices in educational institutions."
— Factor 3 (13.0%): Items 1 to 9, dichotomous (yes/no), forming the dimension "Regulations on the use of cellphones in educational institutions."

Table 1. List of items and coding for statistical analysis

Item statement	Item ID
1. Regarding regulations on the use of cellphones	
My school had clear regulations on the use of cellphones.	01
If there was a regulation, I knew the details.	02
If there was a regulation, it was applied in compulsory secondary education.	03
If there was a regulation, it was applied in Baccalaureate.	04
The regulations were enforced consistently.	05
The regulations were applied in classrooms and at recess.	06
The school prohibited the use of cellphones, but students could carry one if it was switched off/put away.	07
The teachers applied the regulations strictly.	08
The punishment was confiscation of the cellphone.	09
2. Degree of agreement with respect to the usefulness of cellphones in learning processes	
Search for information.	10
Communicate with classmates.	11
Work in a team.	12
Use specific tools.	13
Take photographs or create audiovisual content.	14
Perform more innovative activities.	15
It can be used for any academic activity (classroom, recess, outings…).	18
It is a motivating element in the classroom.	19
3. Degree of agreement on the use of cellphones in educational institutions	
Using the cellphone in the classroom makes it difficult to follow the teacher's explanations.	20
Using the cellphone in the classroom makes it difficult for me to concentrate on tasks.	21
Using the cellphone in the classroom affects my privacy.	22
Using cellphones in the classroom affects my classmates' privacy.	23
Excessive cellphone use affects people's health.	24
Excessive cellphone use affects people's well-being.	25
Excessive cellphone use encourages sedentary behavior.	26
Excessive cellphone use affects social relationships.	27

Source: Authors' own elaboration.

2.2. Participants

Data were collected from 301 first-year students at Catalan universities. Most participants (77.4%) had completed secondary or vocational training at state schools (n=233), while 22.6% attended state-subsidized schools (n=68). The

sample was predominantly female (82.7%). The most common age range was 18-19 years (61.5%), especially among graduates from state schools (64.85% vs 50%). University access was mainly via baccalaureate (74.4%), especially from state schools (79.8% vs 55.9%), while vocational training routes were more common at state-subsidized schools (42.6% vs 19.7%). Table 2 summarizes these results.

Table 2. Composition of the total sample (N=301) by type of school, gender, age, and university access route

	Public	State-subsidized	Total sample
Gender			
Female	193 (82.8%)	56 (82.4%)	249 (82.7%)
Male	39 (16.7%)	9 (13.2%)	48 (15.9%)
Nonbinary	0 (--)	2 (2.9%)	2 (0.7%)
No answer	1 (0.4%)	1 (0.4%)	2 (0.7%)
Age			
18-19	151 (64.8%)	34 (50.0%)	185 (61.5%)
20-21	55 (23.6%)	23 (33.9%)	78 (25.9%)
22+	27 (11.6%)	11 (16.2%)	38 (12.6%)
University access route			
Baccalaureate	186 (79.8%)	38 (55.9%)	224 (74.4%)
Vocational training	46 (19.7%)	29 (42.6%)	75 (24.9%)
Older than 25 years	0 (--)	1 (0.4%)	1 (0.3%)
Other	1 (0.4%)	0 (--)	1 (0.3%)
Total	233 (100%)	68 (100%)	301 (100%)

Source: Authors' own elaboration.

2.3. Statistical procedure

Statistical analysis was conducted using IBM-SPSS Statistics v.28. Qualitative variables were described using frequencies and percentages, while quantitative variables were analyzed using measures of centrality (mean, median) and variability (range, standard deviation, interquartile range). Likert variables were analyzed with percentage response, mean, and standard deviation.

Questionnaire reliability was assessed using Cronbach's alpha, with values above .60 considered acceptable, those above .80 as good and those above .90 as very good. Structural validity was evaluated through Exploratory Factor Analysis.

For group comparisons, non-parametric tests (Mann-Whitney, Kruskal-Wallis) were used when distributions were non-normal. Effect sizes were cal-

culated as R^2 values (0-1 scale) to facilitate comparability across tests. Spearman's correlation was used for quantitative variable pairs. Significance was set at $p<.05$ (5% level) and high significance at $p<.01$ (1% level).

3. Results

3.1. Age at which the first cellphone was obtained

The first question asked the age at which students obtained their first cellphone. Most participants received their first cellphone between the ages of 11 and 13, with age 12 being the most frequently reported age (45.2%, n=136). Only 3.3% (n=10) reported obtaining their first cellphone at age 14 or older, while 8.3% (n=25) obtained one before age 11.

3.2. Regulations on the use of cellphones in the educational institution

Table 3 presents a descriptive summary of the questionnaire items (categorical answer) from the first section. Answers were highly affirmative (>70%) for items 01 (92.7%), 03 (90.0%), 09 (81.1%), 07 (78.4%) and 02 (73.1%) and were also affirmative (>50%) for items 04 (61.5%) and 06 (56.1%). Negative responses were only more frequent for items 05 (52.5%) and 08 (48.8%).

Table 3. Distribution of responses regarding regulations on the use of cellphones. Total sample (N=301)

ID	Yes (1)	No (0)	DK/NA
01	92.7 % (279)	4.0 % (12)	3.3 % (10)
02	73.1 % (220)	19.9% (60)	7.0 % (21)
03	90.0 % (271)	6.0 % (18)	4.0 % (12)
04	61.5 % (185)	29.6 % (89)	9.0 % (27)
05	39.9 % (120)	52.5 % (158)	7.6 % (23)
06	56.1 % (169)	38.5 % (116)	5.3 % (16)
07	78.4 % (236)	18.6 % (56)	3.0 % (9)
08	45.5 % (137)	48.8 % (147)	5.6 % (17)
09	81.1 % (244)	15.0 % (45)	4.0 % (12)

Source: Authors' own elaboration.

3.3. Degree of agreement with respect to the usefulness of cellphones in learning processes

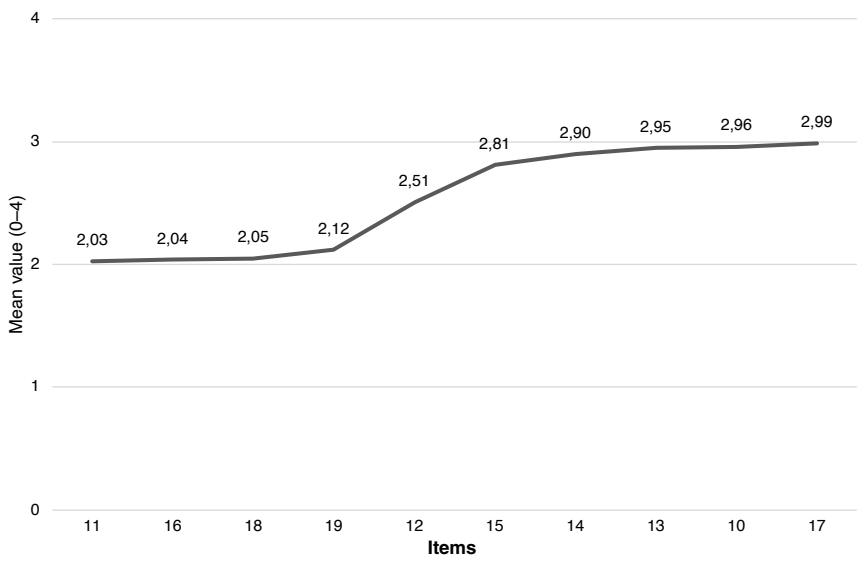
This second section is composed of ten Likert-type items. Table 4 presents the distribution of responses, as well as the mean and standard deviation for each item on the Likert scale [0-4].

Table 4. Degree of agreement regarding the usefulness of cellphones in learning processes. Total sample (N=301)

		Valid	% response for each option						Standard
(Item ID)	DK/NA	N	0	1	2	3	4	Mean	deviation
10	0	301	10.3	3.7	9.6	32.6	43.9	2.96	1.27
11	0	301	13.6	23.3	27.2	18.3	17.6	2.03	1.29
12	0	301	10.3	12.6	20.3	29.2	27.6	2.51	1.29
13	0	301	10.6	3.3	8.3	35.5	42.2	2.95	1.26
14	0	301	11.0	4.7	13.0	26.2	45.2	2.90	1.32
15	0	301	10.0	4.7	17.3	30.6	37.5	2.81	1.26
16	0	301	15.3	14.3	30.9	30.6	9.0	2.04	1.19
17	0	301	8.6	4.3	9.3	34.6	43.2	2.99	1.22
18	0	301	12.0	18.6	32.2	26.9	10.3	2.05	1.16
19	0	301	10.3	19.9	30.2	26.6	13.0	2.12	1.18

Source: Authors' own elaboration.

Figure 1. Degree of agreement regarding the usefulness of cellphones in the learning processes. (N=301)



Source: Authors' own elaboration.

Figure 1 shows the mean values of the items ordered from lower to higher degree of agreement on the usefulness of cellphones in the learning process. The items with the highest levels of agreement (>2.75 points out of 4) are 17, 10, 13, 14, and 15.

More neutral responses were observed for 11, 16, and 18, whose mean scores were only slightly above 2 points.

3.4. Degree of agreement on the use of cellphones in educational institutions

The third and final section is composed of eight Likert items whose statements were negatively worded relative to the characteristic being measured. Therefore, these scores were reverse-coded in order for higher values to reflect stronger agreement on the use of cellphones in educational institutions (Table 5).

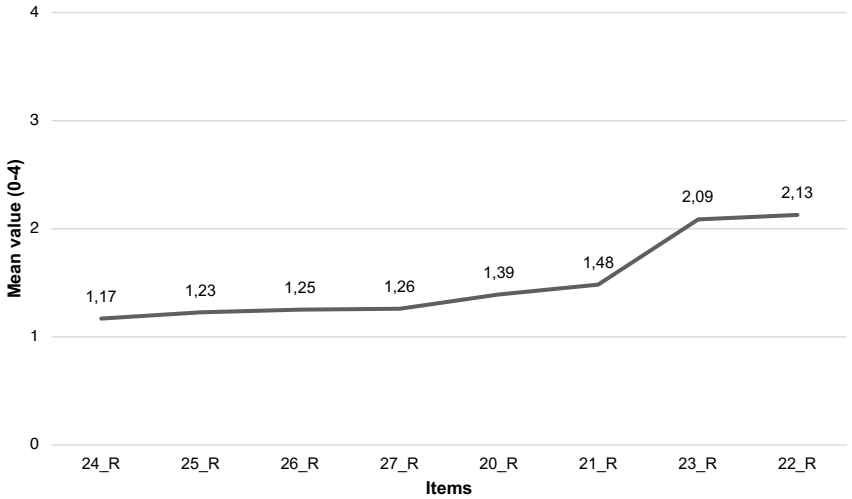
Table 5. Degree of agreement on the use of cellphones in educational institutions. Total sample (N=301)

		Valid	% response for each option						Standard
(Item ID)	DK/NA	N	0	1	2	3	4	Mean	deviation
20_R	0	301	23.6	34.9	24.6	13.0	4.0	1.39	1.10
21_R	0	301	22.6	30.6	29.2	12.0	5.6	1.48	1.13
22_R	0	301	8.6	16.3	40.5	22.3	12.3	2.13	1.10
23_R	0	301	9.0	17.9	39.5	22.3	11.3	2.09	1.10
24_R	0	301	36.2	29.6	21.3	7.3	5.6	1.17	1.16
25_R	0	301	31.9	32.9	21.3	8.6	5.3	1.23	1.14
26_R	0	301	30.6	31.2	26.9	5.3	6.0	1.25	1.13
27_R	0	301	29.6	32.6	24.9	8.3	4.7	1.26	1.11

Source: Authors' own elaboration.

Figure 2 shows the mean values of the items ordered from highest to lowest degree of agreement on the use of mobile devices in educational institutions. Agreement was generally not high, with all items found in the area between neutrality and moderate disagreement. The two items with the highest level of agreement (>2.00 points, out of 4) were 22_R and 23_R. In contrast, the lowest degree of agreement was observed for item 24_R (1.17), closely followed by items 25_R, 26_R, and 27_R.

Figure 2. Mean values for degree of agreement on the use of cellphones in educational institutions. (N=301)



Source: Authors' own elaboration.

3.5. Dimensional scores

To calculate total scores for Dimensions 1 and 2 (Likert items), the scores [0-4] were summed, adjusting for reverse-coded items to ensure higher scores indicate greater agreement. This resulted in a [0-40] scale for "Degree of agreement on the usefulness of cellphones in learning" (Dimension 1) and a [0-32] scale for "Degree of agreement on the use of cellphones in educational institutions" (Dimension 2).

For Dimension 3, one point was awarded for each affirmative response, resulting in a [0-9] scale for "Regulations on the use of cellphones in educational institutions," where higher scores indicate stronger support for these regulations.

Table 6 shows these data. The Kolmogorov-Smirnov test confirmed significant non-normality ($p<.01$), though distribution symmetry kept means close to medians.

Table 6. Exploratory and descriptive analysis of the total variables of the dimensions of the questionnaire. Total sample (N=301)

	Centrality		Possible range	Variability			Shape		KS test
	Mean (95% CI)	Median		Min./Max.	SD	IQR	Asymm.	Kurt.	P-value
Agreement on usefulness of cellphones in learning processes	25.37 (24.34-26.39)	28.00	0 / 40	1 / 40	9.05	11.00	-0.92	0.23	.000
Agreement on use of cellphones in educational institutions	11.99 (11.24-12.73)	12.00	0 / 32	0 / 32	6.55	8.00	0.55	0.50	.006
Regulations on the use of cellphones in the educational institution	6.18 (5.95-6.42)	6.00	0 / 9	0 / 9	2.07	3.00	-0.78	0.43	.000

SD= Standard deviation / IQR= Interquartile Range / Asymm= Asymmetry / Kurt= Kurtosis

Source: Authors' own elaboration.

3.6. Correlations between dimensional scores for each section

The lack of normality in these three variables required non-parametric tests. Spearman's correlations were:

— Dimensions 1 and 2: r=-0.02 (p=.771)
— Dimensions 1 and 3: r=-0.10 (p=.061)
— Dimensions 2 and 3: r=-0.08 (p=.145)

All coefficients were very low and not significant (p>.05), confirming the EFA finding that the orthogonal solution fit better than the oblique one. Thus, these variables are statistically independent.

3.7. Differentiating factors associated with dimensional scores

The three dimensions were analyzed in relation to participant characteristics (Gender, Age, University access route, Type of educational institution) using non-parametric tests for mean differences, given the data distribution. Effect sizes were also calculated to assess the strength of these relationships.

3.7.1. Gender

Responses labeled as "Non-binary," "Others," and "I prefer not to answer" were excluded due to low frequency, resulting in N=297 (1.3% loss). Mean scores were similar across genders, with no significant differences (p>.05), except for a near-significant result for Dimension 2 (p<.10), but effect sizes were minimal.

Table 7. Total variables of the dimensions of the questionnaire. Differences by gender. (N=297)

	Mean (±SD)		Mann-Whitney Test		Effect size R^2
	Male (n=48)	Female (n=249)	Statistic	P-value	
Agreement on usefulness of cellphones in learning processes	25.56 (±10.51)	25.27 (±8.77)	0.85 (NS)	.396	.000
Agreement on use of cellphones in educational institutions	13.25 (±6.50)	11.69 (±6.55)	1.71 (NS)	.087	.008
Regulations on the use of cellphones in the educational institution	6.17 (±2.24)	6.22 (±2.04)	0.09 (NS)	.921	.000

(NS)= Non-significant

Source: Authors' own elaboration.

3.7.2. Age

For this analysis, the 21-22 and 22+ age groups were combined into "older than 21" due to small sample sizes, without data loss. Results (Table 8) showed significant differences in:

— Dimension 1 ("Usefulness of cellphones in learning"): Small effect size (1.6%), with older participants (21+) showing slightly lower agreement.
— Dimension 3 ("Regulations on cellphone use in educational institutions"): Moderate effect size (3.1%), with agreement decreasing as age increased.

No significant differences or meaningful effect sizes were found in Dimension 2, indicating limited evidence for age effects overall.

Table 8. Total variables of the questionnaire dimensions. Differences by Age. (N=301)

	Mean (±SD)			Kruskal-Wallis Test		Effect size R^2
	18-19 (n=185)	20-21 (n=78)	>21 (n=38)	Statistic	P-value	
Agreement on usefulness of cellphones in learning processes	25.15 (±9.11)	26.95 (±18.92)	23.16 (±8.61)	7.32 (*)	.026	.016
Agreement on use of cellphones in educational institutions	11.80 (±6.76)	12.00 (±6.10)	12.87 (±6.51)	1.92 (NS)	.382	.003
Regulations on the use of cellphones in the educational institution	6.45 (±1.98)	5.92 (±2.17)	5.42 (±2.10)	9.08 (*)	.011	.031

(NS)= Non-significant; (*)= Significant

Source: Authors' own elaboration.

3.7.3. University access route

Participants "older than 25" and "other ways" were excluded (n=1 each), resulting in N=299 (0.7% loss). No significant differences were found (Table 9), with negligible effect sizes, indicating no meaningful impact of this variable.

Table 9. Total variables of the questionnaire dimensions. Differences by university access route (N=299)

	Mean (±SD)		Mann-Whitney Test		
	Baccalaureate (n=224)	Vocational training (n=75)	Statistic	P-value	Effect size R^2
Agreement on usefulness of cellphones in learning processes	25.67 (±9.13)	24.48 (±8.89)	1.22 (NS)	.224	.003
Agreement on use of cellphones in educational institutions	12.17 (±6.75)	11.29 (±5.89)	0.63 (NS)	.527	.003
Regulations on the use of cellphones in the educational institution	6.30 (±2.06)	5.91 (±2.06)	1.55 (NS)	.122	.007

(NS)= Non-significant

Source: Authors' own elaboration.

3.7.4. Factor: Type of school

The results obtained (Table 10) did not reveal any statistically significant differences (p>.05), in addition to the respective effect sizes being small or negligible. As a result, there was no evidence of a differential effect due to this factor.

Table 10. Total variables of the questionnaire dimensions. Differences depending on type of school. (N=301)

	Mean (±SD)		Mann-Whitney Test		
	Public (n=233)	State-subsidized (n=68)	Statistic	P-value	Effect size R^2
Agreement on usefulness of cellphones in learning processes	25.65 (±8.99)	24.38 (±9.23)	1.00 (NS)	.315	.003
Agreement on use of cellphones in educational institutions	11.89 (±6.73)	12.3 (±5.94)	1.091 (NS)	.275	.001
Regulations on the use of the cellphone in the educational institution	6.15 (±2.09)	6.29 (±2.01)	0.52 (NS)	.603	.001

(NS)= Non-significant

Source: Authors' own elaboration.

3.7.5. Age at which the first cellphone was obtained

The original variable was recoded into three categories: ≤11, 12-13 (most frequent), and ≥14 years, without data loss. Results (Table 11) showed no statistical significance (p>.05) and minimal effect sizes, indicating no impact on the total dimension scores.

Table 11. Total variables of the questionnaire dimensions. Differences by age at which the students obtained their first cellphone. (N=301)

	Mean (±SD)			Kruskal-Wallis Test		Effect size R^2
	<= 11 years old (n=60)	12-13 years old (n=201)	>=14 years old (n=40)	Statistic	P-value	
Agreement on usefulness of cellphones in learning processes	25.62 (±9.05)	25.59 (±9.21)	23.88 (±8.24)	3.07 (NS)	.215	.004
Agreement on use of cellphones in educational institutions	11.97 (±6.78)	12.04 (±6.50)	11.75 (±6.62)	0.04 (NS)	.981	.000
Regulations on the use of cellphones in the educational institution	5.95 (±2.42)	6.26 (±2.02)	6.15 (±1.78)	0.39 (NS)	.822	.003

(NS)= Non-significant

Source: Authors' own elaboration.

4. Discussion and conclusions

This study examined three dimensions of the use of cellphones in education: regulations, perceived usefulness in learning, and educational impact. Overall, three key findings emerged: (1) most students reported the existence of clear school regulations but noted weak enforcement; (2) mobile devices were perceived as useful mainly for information searches and audiovisual production, though less for peer communication or general classroom use; and (3) concerns focused more on privacy than on health or attention. These results suggest a nuanced perception—students recognize both the pedagogical potential and the management challenges of cellphones in schools.

4.1. Regulation of cellphones in educational institutions

Most participants acknowledged clear regulations (92.7%), especially in secondary education (90%), but noted inconsistent enforcement, with only 45.5% believing teachers strictly applied them. This aligns with prior findings on policy inconsistencies (San Martín Alonso et al., 2014) and calls for clearer guidelines (Flores & del Arco, 2023). The perception of weak enforcement (52.5%) may be linked to insufficient teacher training on cellphone management (Van Acker et al., 2013). These results highlight the need for institutional strategies and teacher training for effective, disciplined use of cellphones in education (Pascuas et al., 2020).

4.2. Perceived usefulness in learning

Participants viewed mobile devices as useful for learning tasks like information searches (mean: 2.96), using digital tools (2.95), and producing audiovisual content (2.90), supporting their role in active learning (Huang et al., 2019; Urcid, 2023). However, usefulness was lower for student communication (2.03) and general use (2.05), possibly reflecting concerns about distraction (Picado Juárez et al., 2015). Acceptance was higher in baccalaureate than in compulsory secondary education, suggesting academic maturity impacts effective cellphone use and the need for stage-specific policies.

4.3. Agreement on the use of cellphones in educational institutions

Participants expressed moderately critical views on cellphone use in education, with higher concern for privacy risks, both personal (mean: 2.13) and peer-related (2.09), aligning with privacy studies (Livingstone et al., 2011). In contrast, items on health, well-being, and sedentary habits scored lower (<1.3), reflecting a normalized view of cellphones as everyday tools, despite potential risks (Twenge et al., 2018). Low scores for attention and concentration impacts (21_R: 1.48; 20_R: 1.39) suggest that while distracting, these devices are not seen as insurmountable barriers if clear regulations exist, consistent with Cervantes-González and Hernández López (2020) and Area (2024).

4.4. Practical implications

For teachers, these results emphasize the need to design activities that integrate mobile devices intentionally, focusing on creativity, information literacy, and responsible communication. Teacher training should prioritize classroom management and digital citizenship to reduce distraction and privacy risks.

For schools and educational authorities, the findings call for consistent enforcement of existing regulations and clear communication of policies to students and families. Institutions should provide technical and pedagogical support so that cellphone use contributes to learning goals rather than detracting from them.

4.5. Limitations and future research

This study relied on self-reported perceptions, whereby university students recalled their secondary education experiences, which may introduce recall bias. The conclusions should be interpreted in the context of the sample, which was limited to Catalan universities, thus restricting generalization to other contexts. Future research should include secondary students, teachers, and families to capture a more comprehensive view, and explore qualitative approaches to understand classroom dynamics and attitudes toward cellphone regulation.

4.6. Final considerations

This study identified key aspects of mobile device use in secondary education, highlighting both the benefits and challenges.

First, clear and consistently enforced regulations are essential. Inconsistent application suggests the need for stronger institutional strategies and teacher training to ensure disciplined, effective device use.

Second, while mobile devices are valued for learning-specific tasks, concerns about distraction and privacy must be addressed. Encouraging balanced, conscientious use can reduce these risks and create a safer, more productive learning environment.

Additionally, perceptions of device usefulness vary by education stage, suggesting the need for differentiated policies tailored to students' maturity and management skills.

Finally, ongoing research is crucial to understanding the broader impact of cellphone use, including perspectives of teachers and families, for a more comprehensive view.

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