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# Exploring student and family concerns and confidence in BigTech digital platforms in public schools

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## Abstract

The use of commercial digital platforms in public schools like Google and Microsoft, which was exacerbated during the pandemic, requires analysis to encourage a safer and more appropriate educational use. The research objective behind this article was to analyse the concerns of school students in obligatory primary and secondary education in public schools within the Autonomous Region of Catalonia (Spain) together with the opinions of their families regarding the use of digital platforms offered by large technology companies (BigTech) in schools. This is a mixed design study, consisting of eight discussion groups with pupils ( $n = 56$ ) and a questionnaire issued to 2,330 family members. The results show that both students and families are concerned about the lack of knowledge surrounding the data they generate when using these digital platforms, and their effect on democratic school governance and the reproduction of gender stereotypes. In conclusion, the study suggests it is necessary to create greater critical awareness among children, adolescents and families at all socio-economic levels, particularly in those who are most vulnerable.

**Keywords:** Digital platforms, Technology companies, Digital technology, Educational system, Democracy

## 1 Introduction

In recent years, we have seen an increase in the digitalisation, platformization and datafication of education worldwide. This trend was accelerated due to the COVID-19 pandemic at the start of 2020 and the resulting need for emergency remote teaching measures (Díez-Gutiérrez, 2021; Dussel, 2021; Hodges et al., 2020). Given this panorama, large technology companies, often referred to as GAFAM (Google, Apple, Facebook, Amazon and Microsoft), have expanded their business activity in the supply of services in the global EdTech market (Amos, 2019; Castañeda & Williamson, 2021; Teräs et al., 2020) leading to a substantial increase in profits (Saura et al., 2021; Williamson et al., 2022). All this has favoured the development of a platformization process which encompasses a wide range of spheres in social life (Poell et al., 2023). In this regard, as Van Dijck et al. observed (2018), digital platforms are “oriented towards the systematic collection, algorithmic processing, circulation and monetizing of user data” (Van Dijck

and Poell, 2018: 4). Accordingly, both large private technology companies or public entities (including not-for-profit organisations) can potentially develop these platforms. Nevertheless, it is the former who have gained the strongest foothold and consolidated their position in school systems (Saura et al., 2021).

In the field of education, the spread of digital platforms has led to two noticeable trends: the “platformization” and the “datafication” of education.

We understand the platformization of education as a phenomenon characterised by the widespread adoption of commercial digital platforms in educational systems, and by the growing influence of BigTech as a result (Williamson, 2021). Although this process may well have increased access to resources and enhanced communication, it has also given rise to risks regarding the privatization of education, control of student data, digital inequalities and the commercialization of the educational experience (Morozov, 2015). Datafication of education, on the other hand, involves the implementation of mass data collection processes in real time, the use of algorithms and reliance on digital technology in decision-making which in this case is applied to the field of education. Its proliferation deepens surveillance capitalism where large technology companies generate, store and use user data from digital platforms (Zuboff, 2019).

As a result, these companies are increasingly more influential in the field of education and have greater opportunity to dictate the organisation of school spaces and the teaching methods in schools (Kerssens & Van Dijck, 2022; Sancho-Gil et al., 2020; Suárez et al., 2023). Furthermore, given its distribution and use in educational systems around the world, digital platforms are becoming ever more crucial when it comes to designing and putting into practice teaching and learning processes (Cobo-Romani & Rivera-Vargas, 2022; Selwyn et al., 2020).

In the context of lockdown during the COVID-19 pandemic, these digital tools played a key role in the continuation and progress of education (García-Martín et al., 2023). Beyond this influence and enhancement, these platforms also favoured the arrival of new digital governance methods in education (Landri, 2018), creating new subjectivities, bodies and datafied subjects (Barassi, 2018; Lewis et al. 2022). In this regard, the mass collection, systematization and monitoring of user data on these platforms has also become a point of concern for governments, citizens and the educational community itself. Existing scientific literature on platformization has analysed the parental relationship with new digital technologies in the context of the COVID-19 pandemic (Osorio-Saez, 2021; García-Martín & García-Sánchez, 2022) and the confidence families have in digital platforms (Xie & Kang, 2015). Similarly, recent research shows there is significant concern from families regarding the possible breach of their children’s privacy rights when using digital platforms (Cobo-Romani & Rivera-Vargas, 2022).

Therefore, the platformization process has also led to certain insecurities and fears regarding how technology companies use these data (Parcerisa et al., 2023). Despite the possible perceived benefits from the use of digital platforms, there is a growing concern within educational communities about the potential infringements on student rights and privacy, as well as the appearance of new social inequalities arising from unequal access to technology and/or the type of content they reproduce (Stoilova et al., 2020; Williamson et al. 2022).

In addition, the scientific community has also become interested in how under-age pupils participate in the publishing of content in digital environments, such as photographs and personal information (Moser et al., 2017). Research shows that boys generally

tend to publish more provocative content (Mullen & Hamilton, 2016), while girls are at a greater risk of online abuse (Englander, 2021; Reed et al., 2020). In Spain, recent research underscores the importance of providing training to teachers and students to prevent discrimination and cyber-bullying on digital platforms (Giménez-Gualdo et al., 2018; Jacovkis et al., 2022). These studies highlight the need to encourage greater understanding of the risks associated with publishing online content and promote responsible behaviour in digital environments particularly among the younger generation.

It is quite clear that the emergence of digital platforms is generating new challenges on an academic, political and educational level. Despite the growing social concern generated by its effects in education, we observe that there is still not enough research regarding its impact on student rights and the democracy of education. As a result, this article proposes the following: What are the main concerns of the educational community regarding the potential relationship between the user, the processing and the destination of the data generated on corporate digital platforms? In particular, the main objective of this study is to gain a deep understanding of the concerns for students and families regarding the use of digital platforms in public schools in Catalonia. The study highlights the need to encourage awareness among families and students of the risks associated with using digital platforms.

## 2 Method

This study is based on a mixed design (Cohen et al., 2018). On the one hand, we gathered opinion by issuing a questionnaire on the use of digital platforms in schools and children's rights to families in Catalonia. On the other, we also collected evidence through eight discussion groups with pupils in primary and secondary education in public schools in Catalonia.

The use of a mixed design in this research was crucial in achieving a holistic and robust understanding of our object of study. The survey provided us with quantitative data which allowed us to identify general patterns among the views of families in Catalonia. Simultaneously, in order to investigate experiences and perspectives in context, we formed discussion groups with pupils. These qualitative data enabled us to recognise essential traits and details for a richer understanding of the topic. The convergence of quantitative and qualitative approaches gave us a more complete and balanced view, enhancing the validity and amount of detail of our findings, and providing a solid base to our conclusions.

The quantitative study consisted of the self-report instrument "Questionnaire on family perceptions" (Calderón et al., 2023). The questionnaire was made up of five sociodemographic questions and nine statements to which respondents could show their degree of agreement or disagreement through a six-level Likert scale. This questionnaire was issued online in May and June 2022. For the statistical processing and analysis, we used the IBM Statistics Package for Social Science (SPSS), version 21.0. The responses analysed showed good reliability ( $\alpha = 0.81$ ).

We accessed the study sample through social networks with no type of discrimination. The survey was issued to 2,909 people. Participants were required to sign the informed consent and meet the inclusion criteria: have a son or daughter, or ward in primary or secondary education in a public school. After screening, the final sample

**Table 1** Quantitative study sample

		N (%)	Age	Student gender		Stage of education	
				Male	Female	Primary	Secondary
Interviewee gender	Male	418 (17.9%)	46.19 SD = 5.90	219 (9.4%)	199 (8.54%)		
	Female	1912 (82.1%)	43.19 SD = 5.11	983 (42.19%)	929 (39.87%)		
Student gender	Male	1202 (51.6%)	10.69 SD = 2.78			769 (33.01%)	433 (18.58%)
	Female	1128 (51.6%)	10.52 SD = 2.81			755 (32.4%)	373 (16.01%)

**Table 2** Student discussion group participants

Identifier	Centre characteristics (Context)	No. of discussion groups	Participants in discussion group
Centre 1	Disadvantaged; difficulty in attracting demand from the middle classes	1	6 students from 6th primary, 3 girls and 3 boys
Centre 2	Disadvantaged; difficulty in attracting local demand	2	Group 1: 6 students from 6th primary, 3 girls and 3 boys Group 2: 6 students from 2nd and 4th secondary, 3 girls and 3 boys
Centre 3	Disadvantaged; schooling of students in its area and nearby areas	1	5 students from 3rd and 4th secondary, 2 girls and 3 boys
Centre 4	Advantaged; growing demand for spaces and lack of vacancies	1	6 students from 6th primary, 3 girls and 3 boys
Centre 5	Advantaged; heterogeneous students from inside and outside the local neighbourhood	1	10 students from 4th secondary, 9 girls and 1 boy
Centre 6	Advantaged, rural environment; students from the area, relative heterogeneity	2	Group 1: 9 students from 5 and 6th primary, 4 girls and 5 boys Group 2: 8 students from 3rd and 4th secondary, 4 girls and 4 boys

came to 2,330 subjects. The educational profile of the interviewees showed that 35.4% had completed obligatory education, 47.0% completed higher education and 17.6% had gone on to study a post-graduate degree, Master’s or PhD. In the case that participants had more than one child or ward that met inclusion criteria, we asked them to base their answers on the eldest. Table 1 shows the quantitative study sample.

The qualitative phase was carried out through eight discussion groups (Stewart, 2018) with students in six educational centres (2 colleges, 2 primary schools and 2 secondary schools) characterized by their heterogeneity in terms of geographical location, social make-up and digital platform use (2 disadvantaged and 4 advantaged centres) (Table 2). We used two different dynamics to form the discussion groups. Firstly, we wished to identify the digital platform use and the associated educational experience. Secondly, we wanted to further our understanding of students’ opinions regarding the safe use of devices on the net (both inside and outside the school centre) and digital platforms.

The discussion groups contained a minimum of five and maximum of 10 students chosen based on a heterogeneous social profile criterion. The sessions lasted between 50 and 90 min and discussions were transcribed and coded using the ATLAS.ti software. We processed the information through discourse analysis by grouping and categorizing the responses from the interviewees. We chose this type of analysis from Wetherell and Potter (1998) because it poses discourse as a social practice, and not just a set of statements. In the words of Iñiguez and Antaki (1994), we extracted "a set of linguistic practices which maintain and promote certain social relationships" (1994: 63).

In the qualitative information coding and treatment phase, the transcripts were grouped according to the type of educational centre (college, primary or secondary). Then, the encoding process was established based on the interview guidelines. Subsequently, units of meaning created in each type of centre were grouped into a single frame of group narratives. This work reduced the volume of data, highlighting those collective narratives directly and indirectly linked with the research objectives. Through systematic reading of the codes, the selected quotes and their context, we searched for patterns, themes and consistencies, as well as contrasts, paradoxes and inconsistencies (Denzin & Giardina, 2016; Jacovkis et al., 2022). Then we began to relate the codes, grouping and regrouping them until they enabled us to create consolidated discourses. The regrouping of the narratives generated a new analytical sense, thus allowing new interpretative schemes (Wetherell & Potter, 1998). This work gave rise to three categories: a) general use of platforms; b) educational experience of using these platforms; and c) opinions regarding the use of the internet (inside and outside the school). Once the categories were organized, they were analysed according to a combined model, in which the content of the narratives was worked on while also considering their discursive form, recovering analytical resources from the repertoire model of Wetherell and Potter (1998).

Finally in the last phase, analytical triangulation and discussion was carried out using both the qualitative and quantitative information obtained. The coherence and correlation between both types of information were analysed, identifying the most significant similarities and differences.

### 3 Results

The results presented below have been organised based on the grouping of the qualitative data (discussion groups with pupils) and quantitative data (family questionnaire) into central dimensions for analysis: "Social dimension: Gender and education"; and "Concerns and confidence in schools". In both categories, we have focused on the concerns which may or may not arise among families and students from the creation of user profiles and the reproduction of gender roles and stereotypes when using digital platforms in an educational setting.

#### 3.1 Social dimension. Gender and education

Concerns over the reproduction of gender roles and stereotypes through the use of digital platforms mainly varied around two factors: (1) the gender of the student and the family interviewee, and (2) socio-economic profile, expressed through the type of centre and level of education of the family. Regarding the former, students' perception of the reproduction of gender roles and stereotypes when using platforms did not vary depending on their gender. Both males and females did not consider the use of digital platforms at

school to reproduce traditional roles or at least, it was not a cause for concern. For the students, the main issues in this regard centred around the use of digital platforms outside school, whether it be for educational purposes or not. Therefore, they did not consider a platform like Google Suite to reproduce gender stereotypes or roles at school. However, they did believe it could be the case with some resources teachers link to these digital platforms for teaching purposes, such as YouTube, TikTok or Instagram (among others).

In this regard, the student discourse pointed to two central themes connected to gender. On the one hand, the potential for social networks and digital platforms to give them access to information which allows them to become more self-aware and feel supported in the definition of their gender identity. On the other, the added appearance anxiety they are submitted to, particularly for girls when they use certain digital platforms. According to students, this is where issues such as sexualization, appearance anxiety and mental health problems arise.

“The problem is when you’re on Instagram or TikTok and as a girl, you don’t like what you see. I’m not saying it doesn’t happen to boys as well, but of course, for us it’s usually physical, appearance anxiety, your classmates then see you and start to compare you to others” (GD student, centre 4).

Returning to the use of digital platforms at school, students stated they were aware that any browsing on this medium generated data, the destination of which is uncertain. This was a matter of concern, but also considered inevitable, as it is also something which happens outside the school context.

“We live a digital life, at school, at home or wherever. No doubt we are being monitored, not only by governments, but also hackers, Google, everybody. You just get used to it” (GD student, centre 6).

Although they did not believe the data generated on digital platforms in school served to create algorithms for developing models which would reproduce gender stereotypes and roles, they did believe it to be the case with active use of commercial digital platforms outside of the school.

“More than when we use G-Suite at school, in the end we spend all day on Google, Instagram, TikTok or YouTube leaving our footprint [digital]. No matter how many safeguards in school, you get home and start browsing totally unprotected” (GD student, centre 3).

For their part, the families showed plenty of concern about the possible creation of user profiles which reproduce gender roles and stereotypes from the data generated by students on digital platforms ( $M = 4.32$ ;  $SD = 1.731$ ). The variety of responses show us there is no consensus, rather quite substantial differences in opinion are evident. When analysing the sample based on the different socio-demographic variables (Table 3), we observed greater concern among those families with children in primary school, offering statistical differences to those families with children in secondary school ( $t_{2328} = 3.296$ ;  $p < 0.001$ ). However, this difference was only observed in female interviewees ( $t_{1247.868} = 3.362$ ;  $p < 0.001$ ), beyond whether their child or ward was female ( $t_{927} = 2.342$ ;  $p = 0.010$ ) or male ( $t_{981} = 2.471$ ;  $p = 0.097$ ).

In the socio-economic category, student discourse showing concerns about the creation of user profiles and reproduction of gender roles and stereotypes when using digital platforms did not vary substantially depending on the type of centre (disadvantaged or advantaged). Concerns were similarly recognized, shared and understood in both contexts:

**Table 3** Concern over the creation of profiles based on the social dimension\*

		Students		Level of education				Total
				Primary		Secondary		
				Students				
		Male	Female	Male	Female	Male	Female	
Interviewee	Male	4.28 (1.77)	4.34 (1.73)	4.30 (1.84)	4.40 (1.71)	4.25 (1.66)	4.11 (1.80)	4.31 (1.72)
	Female	4.30 (1.75)	4.35 (1.71)	4.38 (1.73)	4.44 (1.67)	4.26 (1.75)	4.16 (1.77)	4.32 (1.75)
Total		4.29 (1.75)	4.35 (1.71)	4.38 (1.73)	4.43 (1.68)	4.14 (1.77)	4.18 (1.76)	

\* The data is reported in M format (SD)

“When we use Google Suite at school, I don’t think they use any sexist images of language. I think it’s fine as it is” (GD student, centre 1).

“The Google platform we use at school is pretty standard, I don’t see any traditional boy and girl stereotypes reproduced. Links to some videos, projects or websites that teachers give us are much worse. I don’t think they realize” (GD student, centre 6).

Therefore, the production or reproduction of gender roles and stereotypes by digital platforms when used at school was not as much a concern for students as the following main risks: (1) built-in educational resources which are essentially chosen and used by the teaching staff; and (2) the social and not necessarily educational use of digital platforms outside of the school.

As for families, and taking into account the level of education of the interviewee as a socio-economic variable, substantial statistical differences were reported ( $F_2 = 7.938$ ;  $p < 0.001$ ). Tukey’s range test showed this difference was exclusively between interviewees with up to high-school education and the rest. Concerns were much more widespread among the interviewees with higher-education or postgraduate studies ( $M = 4.49$ ;  $SD = 1.680$  vs  $M = 4.40$ ;  $SD = 1.674$  in the case of higher-education studies and  $M = 4.13$ ;  $SD = 1.814$  in the case of high-school studies). Digging deeper into this matter and taking into account the gender variable, the differences existed solely in the case of female interviewees with girls ( $F_2 = 8.852$ ;  $p < 0.001$ ) both in primary ( $F_2 = 5.107$ ;  $p = 0.006$ ) and secondary ( $F_2 = 3.073$ ;  $p = 0.026$ ) education.

### 3.2 Concerns and confidence in schools

This second dimension analysed the student discourse on concerns regarding the use of digital platforms in school, democracy, free access to knowledge on the internet and the reproduction of gender roles and stereotypes. Along the same lines, in the case of the families, we established a correlation between these concerns and their opinions on a range of variables associated with democracy and public schools.

As far as students are concerned, the incursion of private technology companies in the public school was not necessarily seen as a pedagogical or democratic threat. What’s

more, this incursion was valued as a possible way to connect, both inside and outside the school, the media and digital platforms most commonly used in day-to-day lives. This viewpoint held true regardless of the level of education (primary or secondary) or the type of centre (advantaged or disadvantaged).

Students recognised the vulnerability and exposure of their privacy when using commercial digital platforms inside, but above all, outside the school. Furthermore, they believe this to be inevitable with little or nothing they can do about it.

“The thing is, whether it’s at school or my home, people don’t understand the issue of privacy on the internet or the risks we expose ourselves to when we use it. I know a little because I’ve seen some videos and I talk about it with my friends. When you come to think about it, it’s terrible. They control us everywhere and there’s nothing we can do about it”. (GD student, centre 6).

As for the families, Table 4 shows this concern correlated with the belief that digital platforms brought risks to the following: public education management; adherence to democratic principles; data use for commercial gains; infringements of privacy; influence on choices and behaviour in children and adolescents; teacher supervision; the creation of commercial profiles; and as a whole, confidence in the school itself.

Finally, students did not associate the use of digital platforms with school management matters in their discourse. On this matter, their views highlighted a greater connection between their digital experiences inside and outside the classroom, and also the possibility of maintaining better communication with the teaching staff. Although, as mentioned above, they did identify risks regarding their privacy and public exposure, they did not explicitly link them to the role of the public school or other wider principles such as freedom and democracy. However, in some cases they considered that the teaching staff, in trying to protect them, limited their freedom on the Internet.

“Because if you go into something and then can’t get out, you have problems... For example, the teacher can help you because you were already warned that you could not go into that website”. (GD student, centre 1).

On the contrary, regarding families, as observed in Table 5, the multiple regression model with input method indicated that the concern over the creation of profiles which reproduced gender roles and stereotypes was shaped by the following risks: how data use would affect public education management; its use for commercial purposes; infringement of privacy; influence on choices and behaviour; and sufficient teacher supervision, which explains a 51.7% of variance ( $F_{5, 2324} = 499.761; p < 0.001$ ).

Finally, reviewing the evidence regarding the relationship between the use of digital platforms and democratic principles and public education management, we observed that in the case of the students there was a certain disconnection between the use of this technology inside and outside the educational centre, and broader reflections on its potential impact on the promotion and exercising of democracy. In this regard, this collective disassociated itself from the use of digital platforms, which instead was understood from a more individual point of view. For their part, families showed greater concern for the large-scale impact digital platforms may cause public schools in terms of control, commodification and even manipulation of students through the creation of user profiles by exploiting their data.



**Table 4** Correlation between the different variables

	M(SD)	1	2	3	4	5	6	7	8	9
1. Risk to public education management	3.42	1								
2. Adhere to democratic principles	1.672	.454 <sup>a</sup>	1							
3. Data marketing	3.33	.247 <sup>a</sup>	.185 <sup>a</sup>	1						
4. Infringement of privacy	1.556	.251 <sup>a</sup>	.177 <sup>a</sup>	.730 <sup>a</sup>	1					
5. Influence choices and behaviour	4.84	.295 <sup>a</sup>	.229 <sup>a</sup>	.658 <sup>a</sup>	.669 <sup>a</sup>	1				
6. Sufficient supervision by the teacher	1.509	.196 <sup>a</sup>	.132 <sup>a</sup>	.405 <sup>a</sup>	.458 <sup>a</sup>	.427 <sup>a</sup>	1			
7. Creation of marketing profiles	4.82	.079 <sup>a</sup>	.062 <sup>a</sup>	.066 <sup>a</sup>	.052 <sup>b</sup>	.035	.059 <sup>a</sup>	1		
8. Confidence in protection given at school	1.534	-.315 <sup>a</sup>	-.191 <sup>a</sup>	-.250 <sup>a</sup>	-.239 <sup>a</sup>	-.281 <sup>a</sup>	-.242 <sup>a</sup>	-.015	1	
9. Creation of profiles which reproduce gender stereotypes	4.53	.286 <sup>a</sup>	.222 <sup>a</sup>	.624 <sup>a</sup>	.594 <sup>a</sup>	.665 <sup>a</sup>	.387 <sup>a</sup>	.066 <sup>a</sup>	-.215 <sup>a</sup>	1
	1.571									
	4.52									
	1.461									
	2.76									
	1.977									
	4.11									
	1.387									
	4.32									
	1.731									

<sup>a</sup>The correlation is significant at level 0.01

<sup>b</sup>The correlation is significant at level 0.05

**Table 5** Analysis of the multiple regression predictor variables regarding concern over the creation of profiles

Predictors	Dependent variable	Adjusted R-squared	Unstandardized coefficients		Standardized coefficients	t	Sig
			B	SD			
Risk public management	Creation of profiles	.517	.076	.016	.073	4,819	<.001
Marketing			.288	.026	.251	11,184	<.001
Infringement of privacy			.127	.026	.113	4,881	<.001
Influence			.417	.023	.378	17,990	<.001
Supervision			.069	.020	.058	3,499	<.001

#### 4 Discussion

Our analysis confirms and deepens our insight into some aspects already highlighted in previous research (see Prendes-Espinosa et al., 2020). The appearance of digital platforms in the public school system increases the platformization process of social life (Poell et al., 2023), increasing the sphere of influence for technology companies (Kerssens & van Dijck, 2022; Williamson, 2019) and at the same time making it possible to generate links which help to improve the connection between school activity, life and student background outside educational centres (Barassi, 2018; Knox et al., 2020; Lewis et al., 2022).

Therefore, on one hand, the results coincide with previous research showing the growing influence of digital platforms in the public school system, which intensifies this phenomenon of “platformization” of social life (Poell et al., 2023). This process refers to the general adoption of commercial digital platforms in multiple spheres of society (Poell et al., 2023; Kerssens & van Dijck, 2022; Williamson, 2019; Barassi, 2018; Knox et al., 2020; Lewis et al., 2022), and have allowed the GAFAM technology companies to significantly broaden their presence in the educational market worldwide (Williamson, 2019).

On the other hand, the analysis shows us that digital platforms have allowed connections between school life and what goes on beyond school doors. These connections between school activity and daily life for students outside an educational context (Knox et al., 2020) are crucial for forming what are known as “datafied citizens” (Barassi, 2018; Lewis et al., 2022). In other words, the student experience on digital platforms is not limited to education, but also contributes to building their identity and understanding of the surrounding world (Knox et al., 2020). This can be particularly beneficial when trying to bring education closer to the reality and individual backgrounds of students. However, this study also reveals that both the connections and the resulting datafication from digital platform use give rise to concerns, especially among students’ families. This is largely due to students, mostly under age, being particularly vulnerable regarding exposure of their private life and control over online privacy (Parcerisa et al., 2023). Indeed, mass data collection and constant monitoring of activity on digital platforms may endanger student privacy and generate legitimate concerns in families (Moser et al., 2017).

Taking everything into account, the results highlight the urgent need to increase awareness, both among students and family members, regarding the risks associated with these digital platforms, even in an educational context (Stoilova et al., 2020).

## 5 Conclusions

To conclude, going back to our initial question (what are the main concerns within the school community about the potential relationship between the use, processing and destination of the data generated on corporate digital platforms?), we highlight some considerations for each of the dimensions analysed.

Firstly, among school and college students in Catalonia, regardless of their gender, centre status or level of education, there is greater concern regarding the generation of user profiles and reproduction of gender roles and stereotypes in the use of digital platforms and social networks outside of the school. This is where they notice greater appearance anxiety and sexualization of females. Also, when using digital platforms, they highlight the content teaching staff create and share as potential reproducers rather than the platforms themselves. Among families, the concerns were greater when interviewees were female (regardless of the gender of the children). Furthermore, analysis based on the socio-economic profile of the families showed that concern regarding the role of digital platforms in the creation of profiles and reproduction of gender stereotypes was associated with the level of education of the families, being greater at a higher level, and particularly when both the interviewee and the students in question were female.

Secondly, regarding concerns about the impact digital platform use may have on public schools, and how this reflects on the confidence in the school itself, the results show that students consider its use to be inevitable but also an opportunity to connect their digital activity outside of school with what happens inside. This reading does not connect with a broader reflection on the potential impact the use of digital platforms and the associated data collection has on the quality of public education and on democratic principles. However, families show concern about the impact the exploitation of this data may have on public school management, influencing student choices and opening education up to market interests which may not necessarily be aligned with democratic principles. This directly impacts on the confidence families have in the school.

### Acknowledgements

This research has been performed by the consolidated research group Esbrina (2021 SGR 686-UB) the University of Barcelona, in collaboration with AFFAC (Asociaciones Federadas de Familias de Alumnos de Cataluña), financed by the Agència Catalana de Cooperació al Desenvolupament (ACCD) (subvencions a projectes de desenvolupament i d'educació per al desenvolupament, sollicitation 2021 ACC145/21/000103). 2022-2023.

### Authors' contributions

1. Pablo Rivera-Vargas: Funding acquisition and investigation (Lead); conceptualization (Supporting), data curation, writing- original draft preparation, review and editing (Equal). 2. Diego Calderón-Garrido: Formal analysis (Lead); methodology (Supporting); conceptualization, data curation, writing- original draft preparation, review and editing (Equal). 3. Judith Jacovkis: Methodology (Lead); formal analysis (Supporting); conceptualization, data curation, writing- original draft preparation, review and editing (Equal). 4. Lluís Parcerisa: Conceptualization (Lead), data curation, writing- original draft preparation, review and editing (Equal).

### Declarations

#### Competing interests

The authors declare that they have no competing interests.

Accepted: 22 December 2023

Published online: 13 February 2024

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