BigTech Digital Platforms in the Catalan Education System and Children's Rights: Risks and Opportunities

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BIG TECH DIGITAL PLATFORMS IN THE CATALAN EDUCATION SYSTEM AND CHILDREN'S RIGHTS: RISKS AND OPPORTUNITIES. EXECUTIVE SUMMARY

FEDERATED ASSOCIATIONS
OF FAMILIES OF STUDENTS
OF CATALONIA

aFFaC

esbrina

With the collaboration of ACCD:

Agència Catalana
de Cooperació
al Desenvolupament

Generalitat
de Catalunya

We want to thank everyone who has shared their perceptions and opinions; interviewed experts; schools, teachers, principals, and students who have lent us some of their daily time; the thousands of families who have taken part in the survey; and, lastly, the Esbrina research group for all their field and analytic work. This study would not have been possible without the collaboration of academic experts.

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1. Introduction

The project "Technology Corporations, Digital Education Platforms and the Safeguarding of Children's Rights with Gender Perspective" (hereinafter **edDIT**) arises from the **shared concerns of aFFaC, some of its members, families, and educational agents**(some school management teams and teachers), about the widespread use of digital platforms from tech corporations (or Big Tech) such as Google or Microsoft in Catalan schools and the impact this can have on children's righ**ts.**

Currently, the public education system is heavily dependent on Big Tech digital platforms. The Covid-19 pandemic brought about a swift global digitalization of education, before there was an opportunity to assess the consequences of using these platforms on children's rights. Although experts and national and international organizations have warned of the risks these platforms pose to the children and adolescents who use them, **there is still no empirical analysis of their consequences for children's rights in the education system.**

aFFaC was aware of this trend.**Thus, in 2020, it began to publicly voice its concerns about the lack of regulation of the use of digital tools in public schools**in order to protect the educational community from the shady and self-serving interests of certain private parties (Gasull, 2021). It also demanded to consider other more ethical and secure options to the current monopolistic software offered by technology corporations. Among these options is the **School Democratic Digitalization Plan, which aFFaC has been working on since 2019,**led by the Xnet platform and a group of instigator families.

The project, which received the support of the Barcelona City Council and the approval of the Education Department of the Catalan Government, is now a pilot program to **implement a public alternative that respects educational digital rights** in different public schools. Furthermore, since 2021, aFFaC offers a course on education and digital sovereignty to inform society so it has enough knowledge to participate in this debate (aFFaC, 2022).

That same year aFFaC took other steps such as **launching the edDIT project with the Esbrina research group of the University of Barcelona (UB),**a group specialized in evaluating education technology to generate knowledge on the impact of corporate digital platforms on children's rights, especially on young girls and adolescents.

Based on the results of this study, in which all agents of Catalan education took part (students, teachers, principals and families), as well as experts in the field, the project will **raise the awareness of political, academic, and social actors, who are competent or interested in the subject, locally and abroad.It will inform them about the impact that*Big Tech*platforms can have in safeguarding children's rights,** as well as demonstrate how important it is to bet on available alternatives that schools could already be using to protect students.

This executive summary is one of the products of the edDIT project. It presents the **main research results** which are detailed in-depth in the report titled*"Big Tech*Digital Platforms in the Catalan Education System and Children's Rights: Risks and Opportunities.**"** One of the project's justifications pointed to social ignorance of a possible breach of children's rights when using*Big Tech*digital platforms. Research has shown that**there is a real lack of social consciousness.** It also proves that the results obtained in Catalonia can be extrapolated to all education systems, because **corporate technology is monopolistic and operates on a global scale.** Of particular concern is the lack of a gender perspective among most of those involved in this study, regardless of their role.

Lastly, the executive summary consists of four parts. After presenting the research methodology, it outlines the results of the study on the possible breaches of children's rights in digital education contexts. **It takes the safeguarding of the right to education as a model** and analyzes the possible consequences for the right to the free development of childhood, the right to equality and non-discrimination, the right to freedom of teaching and academic freedom, the right to information and freedom of thought and expression, the right to access modern technology and digital literacy and the right to privacy and protection of personal data. The third section lists the **main findings of the study.** The report concludes with **recommendations for the main actors that operate in the field of digital education: educational administrations, school management teams, teachers, families, students and *Big Tech* itself.**

As a disclaimer it should be noted that **the term "digital education platforms" is used to make the document easier to read.** However, this study proves that the digital platforms provided by Big Tech **cannot be considered to be "educational" because they pursue commercial objectives** focused on collecting data rather than educational interests.

2. Methodology

It is a mixed design study. In total, more than **2,470 people** took part in the five stages of the study (80% women, 19.4% men and 0.6% non-binary), representing the diversity of national and international actors involved. In addition, **nearly 50 documents were reviewed**.

1. To elaborate the **reference framework on children's rights in the digital context,** 30 legal and political texts were analyzed at the international, European, national and regional levels, of which 15 were deemed to be relevant. Therefore, a six-part relational analysis was carried out, one for each of the dimensions of children's rights with possible consequences of the use of digital educational platforms.

2. To gather the perceptions of **experts in education and digital technology** on the use of these platforms, 14 people (six women and eight men) with five different national and international profiles were interviewed: academic, activist, *Big Tech* **spokesperson**, *stakeholder,* and *policy-maker*.

3. The study of the **perceptions of the educational agents** has been conducted through interviews and discussion groups with school management teams, teachers, and the students of six[1] Catalan public schools that use platforms of different size and complexity. A total of 109 people have participated (60% women).

4. An online questionnaire was used to analyze the **opinions of families, it asked about the possibilities and limitations of using digital platforms in an educational context:** Knowledge of digital education platforms; opinion about digital education platforms; concerns about the use of data by digital education platforms; and parental guidance on the use of digital education platforms. 2,347 valid answers were obtained (81.5% women). Out of a population of 566,555[2] families, this is a representative sample with a margin of error of 2%[3] and a confidence interval of 95%. 24 social investigation experts, specialists on the topic and academics from 10 Spanish universities were consulted to design and validate the questionnaire.

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[1] Two schools, two high schools and two K-12 schools from Catalonia.
[2] Estimate based on the Catalan fertility index; 1.2 children per woman according to IDESCAT.
[3] Exact margin of error of 2.019% with a 50% maximum deviation (maximum variability).

5. The analysis of the stance of the **four technology corporations** with more presence in the Catalan public education system (**Google, Microsoft, Amazon and mSchools**) has been done by studying a total of 18 documents on service conditions and privacy policies of their platforms.

6. Lastly, in order to conduct the mixed study, an analysis was made of the most significant evidence gathered in the previous stages of the investigation. This evidence was then compared, contrasted, and presented in relation to the six dimensions of children's rights.

3. Findings on the possible breaches of children's rights in digital education contexts

In a context of widespread implementation of digital platforms of technology corporations in the Catalan public school system, it is necessary to analyze their impact on the right to education and all other children's rights, since they are likely to be violated.

Human Rights are indivisible, interdependent and interrelated (UN, 1968; UN, 1993). This means they cannot be analyzed, understood, nor guaranteed in isolation, because one set of rights cannot be enjoyed fully without the other.

Right to the free development of childhood

Right to equality and non-discrimination
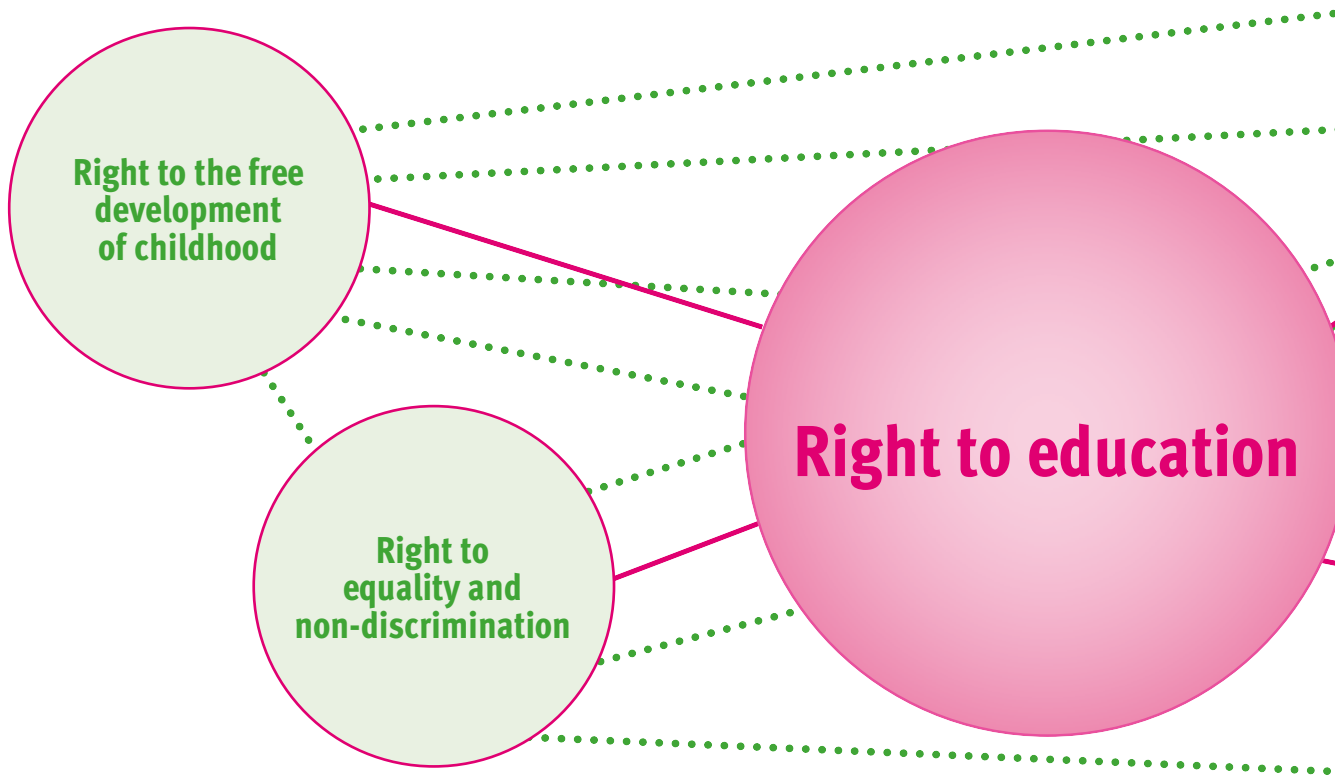
Right to education

For this reason, this research analyzes the possible breaches of using digital platforms of technology corporations on the right to education of children regarding the following rights:

Right to freedom of teaching and academic freedom

Right to information and freedom of thought and expression

Right to privacy and protection of personal data

Right to access modern technology and digital literacy
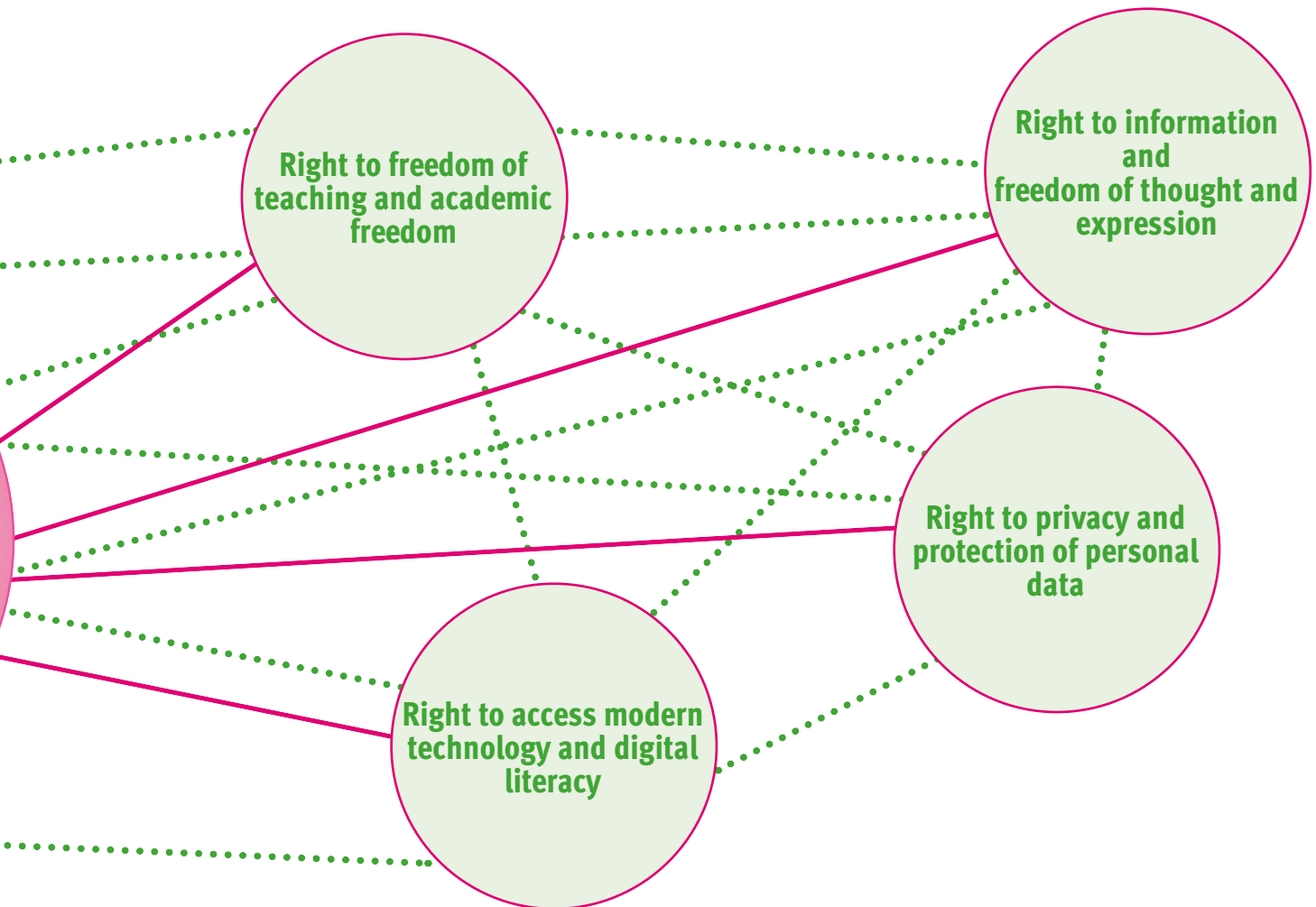
3.1. Right to the free development of childhood

Safeguarding the right to the free development of childhood means that education must seek the full development of the human personality and the sense of human dignity, in face-to-face and digital contexts (Committee on the Rights of the Child, 2021). The education system should enable all persons to participate effectively in a free society and promote understanding among nations, and ethnic or religious groups (Human Rights Council, 2022).

• **What are the implications of this right in the digital context?**
It means ensuring the learning of digital skills and responsibilities, as well as an understanding of how technology tools work in relation to the characteristics, maturation and cognitive, emotional and social development of each child, in order to preserve a safe and free childhood.

This is in line with the idea of "digital citizenship", understood as the ability to navigate complex digital contexts and grasp their social, economic, political, educational and cultural implications (Committee on the Rights of the Child, 2021).

• **What needs to be done to protect the right to childhood?**
The experts who took part in the study claim that **the dominance of *Big Tech*** as the main provider of digital platforms for education tends to reduce the skill-acquiring possibilities of students to navigate the digital world autonomously and critically. According to them, the actions of *Big Tech* are guided towards increasing their profits.

Schools consider that there are not enough educational alternatives from public administrations to give them a real choice about which digital platforms to use. For school management teams schools are left to manage for themselves with no obvious support from educational institutions.

Most teachers also share that they are unfamiliar with the process of their schools for choosing which educational digital platform to use.

Most of those inquired share concerns about the lack of a deep awareness among students, teachers and families about the digital tools being used both inside and outside of the educational context.
School management teams admit that **teachers lack the technical knowledge** to promote a safe use of digital platforms in and out of school. They also recognize that schools should foster the development of the student's critical thinking in the building of their digital citizenship.

"Some teachers are wary of opening or bringing up the debate of dropping Google to look for other platforms."

(Discussion groups with teachers)

Teachers acknowledge that the influence of corporate technology on the development of digital citizenship in schools is a serious problem that is difficult to avoid. They believe that exposure to a variety of digital resources could help students to choose what interests them most from a critical perspective in the future.

"It's crucial to (...) create critically thinking citizens capable of choosing what software they want to use in the future, that they become acquainted with these options that are fair and accessible."

(Discussion groups with teachers)

Although students recognize that they are vulnerable to manipulation by Big Tech through their digital tools, they still lack a full understanding of the extent of the problem.

Experts are worried about the weak protective role of the state and the lack of digital sovereignty exercised by the public administration and schools. Likewise, as long as the administration keeps delegating the provision of digital platforms and tools to corporate technology, it loses the potential to influence and control the functioning of the education system.

"Of course administrations must demand a range of actions to corporate technology, but the payback of Big Tech in the education system is obvious, corporate platforms improve education."

(Big Tech)

Even Big Tech spokespersons share these concerns, because while they claim how essential their role is in education, they make the administration responsible of ensuring the protection of citizens, especially children.

School management teams and teachers believe that there are not enough protocols and specific measures in place to protect children in digital contexts. Schools often have to improvise and fend for themselves, without understanding in-place regulations, laws and rights and with no support nor monitoring from public administration.

3.2. Right to equality and non-discrimination

The right to equality and non-discrimination in the digital context means ensuring equitable and effective access to technology that does not exclude children. Therefore:
-Specific measures must be put in place to prevent the digital gap, and **special attention must be paid to the accessibility, literacy, privacy and safety of young women in digital contexts** (Committee on the Rights of the Child, 2021).
-And an effort must be done to eliminate the existing barriers of disability, gender, economic status, origin, etc. that prevent equal access to digitalization while promoting the necessary technological innovations to ensure universal access (Human Rights Council, 2022), understood as real and effective access to digital tools tailored to one's needs.

• **How to ensure inclusive access to digital technology?**
Most of those inquired (activists, academics and teachers) believe that Big Tech covers the need for a digital infrastructure for the education system that states cannot provide, thus subordinating public administration to its interests. This means that there is a tension between the commercial interests of digital platform providers and those of the educational system itself. Thus, it brings up the question of whether it is possible to achieve educational goals in for-profit contexts.

Interviews with *policy-makers* have proven that the interests of corporations that provide digital education technology influence the priorities of the public administration through political pressure and technological solutionism in contexts and times of public underfunding.

Families recognize a tension between the objectives of public education and the commercial interests of technology corporations. In particular, there is some concern among families about the risk that Big Tech penetration may pose to the public managing of schools, and at the same time, that a public-private partnership is considered necessary[4] .

"Therefore, Google knows what match it's playing, but the administration has been to naive, or even worse, it has signed knowing what's in play."

(Activist)

Overall, arguments tend to take for granted the use of these platforms in schools, and place the fundamental problem on the access to devices and digital resources rather than on the kinds of resources used and their impact on equity.
• **How to ensure effective access to technology?**
Analyzed arguments do not directly relate digital education platforms with an increase in inequalities, neither do they

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[4] For further information see Table 6, Annex 4, of the final investigation report.

usually consider datification processes inherently harmful to the equity of the education system. Nonetheless, when addressing the topic of how these platforms penetrate into education systems, concerns do appear:

Families express certain concerns regarding the possibility that Big Tech digital platforms jeopardize the democratic principals of public education, among which there is equity and non-discrimination[5].

Activists and academics point to knowing how digital technology works as a key element to **prevent harm on equity** which in practice are already identifiable as a cause of the platformization of education.

As to the capacity of digital technology to look after all types of students, teachers and school management teams argue that educational technology is not appropriate in all context nor for all students:

"I believe technology cannot always be the answer to diversity. This is its main handicap. But it has other virtues. We've been doing projects incorporating tablets for a long time, and we enjoyed it and we had plenty of resources and we could even learn new things having fun. (...) But we must clearly state that it's not a solution for all our students."

(Interviews to school management teams)

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[5] For further information see Table 6, Annex 4, of the final investigation report.

3.3. Right to freedom of teaching and academic freedom

The right to freedom of teaching and academic freedom are rights given to teachers, but its violation has an impact on the right to education of children.

Freedom of teaching must be understood as **the ways in which teachers can freely express their opinions, values, and judgments while respecting the dignity and the diversity of all the collectives they teach. Academic freedom** is related to **the autonomy of teachers in deciding educational tasks.**

• **How can these liberties be safeguarded in the digital context?**
Freedom of teaching: Teachers and staff must have instrumental and critical digital skills that allow them to develop with know-how and responsibility in the digital context (Sewyn et al., 2022). This will ensure freedom of choice and education on digital educational platforms (Committee on the Rights of the Child, 2021).

Academic freedom: The educational administration must guarantee the involvement of teachers in the choice of methodologies, in the adaptation of digital platforms to their working environment and in the training of digital skills acquisition processes.

Among those inquired, there are different opinions on the role that these platforms should play in promoting or restricting the right to the teacher's freedom of teaching.

School management teams believe that free services have a direct or indirect hidden cost.

"This means that we must always be suspicious and think that if an internet platform that doesn't know you offers you something for free, it's because somehow it's also screwing you."

(Interviews to school management teams)

They also admit that using Google in public schools strengthens the dominance the company already has as the universal search engine. The everyday use of Google normalizes and enforces its use in schools.

Students also indicate their approval of using Google Classroom. Although they do acknowledge that using the tool means giving up some privacy, they are willing to use it because it has improved their relationship with teachers and because they are used to it.

"We must not allow that children think that books are a Chromebook, that internet is Google, and that the digital learning environment is Google Classroom (...)"

(Stakeholder)

Families do not have an alarming opinion on the negative impact these platforms have on public education[6].

Technology corporations argue that their mission is to innovate and build tools to enhance the lives of users, and that it is the responsibility of states and public administrations to fulfill their monitoring and regulating functions. Nonetheless, some interviewees admit that it is a quite difficult task at hand given the lack of technical skills.

According to *Big Tech*, incorporating digital platforms in education can improve the acquisition of skills and knowledge provided that teachers are involved and have the required skills. They therefore see them as tools at the service of education.

Experts underline the **need to empower schools and teachers** so that they can make decisions to create safe educational digital environments and thus be able to exercise digital sovereignty and governance of the data generated. In addition, they suggest that using certain digital infrastructure contributes to the standardization and deprofessionalization of teachers:

"If from the beginning I'd been warned on what Google does to your data I would've chosen Moodle, but now I don't longer care."

(Discussion groups with students)

"I've been involved with governments and educational systems around the world. I can easily say that, in most cases, I've had to play a dual role. On the one hand, offer the goods and tools of the corporation I represented during 10 years (Microsoft) before arriving at Amazon. On the other hand (a task not assigned to me), teach states how to regulate us."

(Big Tech)

"Regarding Big Tech, in a capitalist context that favors profit-making, it has been proven that there is a growing impact towards the attention economy, that is, automating processes and claiming that they enhance how teachers teach and how students learn. What are the consequences? The deprofessionalization of teachers because everything is wrapped and ready, everything is beautiful."

(Academic)

Teachers also emphasize self-training as a basic resource to survive in the digital context, given the lack of support from educational administrations to create safe digital environments.

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[6] For further information see Table 6, Annex 4, of the final investigation report.

A significant portion of surveyed teachers consider it crucial to be up-to-date with digital tools as it is an act of responsibility and professionalism that must be undertaken to strengthen their own academic freedom.

They also underline the meager participation of teachers in the decision-making process about which digital platform to use in school, and how to implement it. They argue that this decision is made by the school management team.

3.4. Right to information and freedom of thought and expression

The right to information is closely linked to the right of thought and expression. Without appropriate, quality and verified information, it is difficult to create a critical and free public opinion and to form one's own opinion. Because building self-expression can be restricted from the roots with manipulated, partial or harmful information.(Committee on the Rights of the Child, 2021).

• **How can we safeguard children's access to these rights in the digital context?**

1. The right to **access information** must be viewed as the obligation of ensuring, promoting and supporting the creation of materials and contents adapted to the age of children. It must also promote the production and circulation of content through media, libraries, and scientific and cultural education organizations.

2. Access to appropriate digital content must enshrine the protection of children in front of violent, stereotyped and discriminatory content, fake stories and fake news which can mislead them. Content must be accessible, reliable, concise and coherent with the child's age.

3. Families and education professionals must be trainedwith educational materials and mechanisms to access information (Committee on the Rights of the Child, 2021).

4. To guarantee the right to freedom of opinion and expression **children must be protected** from cyberbullying, threats, censure or data leaks. Above all, it must be ensured that data monitoring and profile creation processes do not breach the right to form genuine opinions, non-manipulated by algorithms, because this could also impact the right to freedom of thought, conscience and religion.

Regarding these rights, experts emphasize that Big Tech have appeared as an easy remedy for the public administration to solve digitalization issues. They believe that **the platform's gatekeeping and use of information is suspicious,** because it is not verifiable nor can it be monitored in relation to the hierarchical organization of the information it provides. Lastly, experts note that the providers of digital education platform hold so much power that even those **responsible of safeguarding the right to information, opinion and expression in the classroom (teachers) sometimes act in detri-**

ment of these liberties.

Teachers underline how **important it is to be aware that children must be protected** from the dangers related to using social media and digital technology in and out of school.

Most students state that they **prefer Google Classroom because it is agile, entertaining and easy for accessing information.** They believe that platforms better support collaborative work, document revision and proofreading, and allow for closer monitoring of learning objectives.

"[...] I think we aren't used of taking care of stuff like this... We receive messages on WhatsApp all the time that share personal stuff like... 'This boy goes to therapy...' This shouldn't be appropriate I think... And this is a really difficult habit to change."

(Discussion groups with teachers)

They also spot **that not all teachers are able to use digital tools** with educational purposes in a comprehensive and entertaining way.

On the part of families, what stands out is the **concerns about how digital platforms may shape the** preferences, choices, behavior and identity of students[7].

Research has found some shared opinions among inquired groups. Overall, **students and families[8] have positive views of how these tools improve communication,** both between students and teachers as between families and schools.

There is also a general **feeling that public education policy and the rhythm of processes within schools are different,** thus, there is a lack of correlation between what schools need and the solutions of public policy.

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[7] For further information see Table 37, Annex 4, of the final investigation report.
[8] For further information see Table 6, Annex 4, of the final investigation report.

3.5. Right to access modern technology and digital literacy

According to this right, **children must be guaranteed digital literacy so they can acquire the knowledge, abilities, and skills** set out in educational curricula (Committee on the Rights of the Child, 2021). Likewise, curricula must outline what skills are necessary to enable them to exercise their rights as citizens in a digital society.

• **How to do it?**
-Through **educational practices that address digital literacy** in curricula, from preschool education to teacher training.
-**Digital literacy must promote a deep knowledge of technology** from a critical perspective (computational thinking), ensure that students know how to search for and identify trustworthy information, and understand the infrastructure of digital environments.

> **Students must have access to computers, so digital education must be free, with no direct or indirect costs.**

These are the main points underlined by experts. *Policy-makers* **point out the technology solutionism of administrations** because they establish de facto collaborations with Big Tech by outsourcing tasks and responsibilities, not only in education. It is also noted that Big Tech promotes user dependence on their platforms to achieve user fidelity, so that they use their platforms not only in an educational context.

Stakeholders believe that the penetration of Big Tech in education is inevitable and underline that administrations should monitor their actions.

The perception of activists is that administrations have had to resort to Big Tech to palliate their shortcomings, signing agreements with companies like Google.

The opinions of school management teams and teachers are also relevant. School management teams believe that the public administration's actions and omissions determine access to technology and digital literacy. Thus, they state there is a **shortage of support from the Education Department**, which impacts the decisions schools make about using digital platforms.

Teachers complain about the contrast between the administration's formative intentions and their actual implementa-

tion. **They perceive that they lack digital leadership skills** and criticize that the training provided by the administration does not meet their needs.

Finally, the surveyed families believe that cooperation between the government and Big Tech is relatively necessary to promote improvements in education and ensure the right to education. It should be noted, however, that there are mixed views on this issue among the families interviewed[9]. It is worth emphasizing that **families feel that teachers do not adequately monitor how students use digital platforms.**

Ironically, **students feel that teachers are constantly monitoring** their use of digital platforms.

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[9] For further information see Table 6, Annex 4, of the final investigation report.

3.6. Right to privacy and protection of personal data

In the digital context, the right to privacy and protection of personal data is linked to the right to the free development of childhood and the right to information and freedom of expression. As stated by the Committee on the Rights of the Child, privacy is an essential condition for children to achieve autonomy, dignity and security. However, these can be threatened by identity theft, cyberattacks, cybercrime, and **the unauthorized processing of children and adolescents' personal data, including pictures**.

Therefore, in the educational context:
1. The privacy of personal data must be protected.
2. Data processing and profile creation must be banned.

The United Nations warns of the dangers of using digital education platforms due to **the pressure exerted by corporations to gain control of children's data,** in order to maximize profits rather than promote student's interests (Human Rights Council,2022).

Thus, as experts explain, it is clear that **the regulation of the right to privacy is often not strict enough, and doubts remain as to whether data protection is the responsibility of schools or the government.**

They also point out that there is no clear position on the degree of access and exploitation that Big Tech can enjoy regarding the data generated.. This lack of clarity could signify a **breach of the right to privacy and protection of personal data.**

Activists believe that **the provision of digital technologies in schools by Big Tech is not transparent.** This opacity makes it impossible to obtain information about the use and management of the data generated, which means that these tools cannot be audited.

Policy-makers agree on the need to deploy strict controls on the use of personal data.

As for the spokespersons of *Big Tech*, they feel that **they are the ones supporting governments in understanding the regulations on the right to privacy and data protection.**

The school management teams and teachers declare that some schools have specific rules to protect personal data and to regulate, minimize, or ban data processing and disclosure. They also explain that **there are threats arising from the use of digital platforms**, while acknowledging problems in adapting to digital alternatives.

"We're selling our soul to the Devil and we know it."

(Interviews to school management teams)

Teachers concede **they have not critically questioned the potential misuse of data** from using the platforms. Teachers have also expressed major concerns regarding the lack of diversity in the content students receive, as these platforms use algorithms based on previous user behavior.

Most of the surveyed families have authorized the use of digital platforms in their children's schools, indicating a **general trust in how schools manage student data.** However, they also voice concerns over the possibility that Big Tech may use and sell the personal data of students.

Lastly, it is worth noting that students criticize the automatic data processing, confirming that they **feel monitored by Big Tech and expressing unease by the possible threat to privacy** when using digital media.

"The computer knows all my tastes because I'm always checking it (...) I feel a bit monitored. That's why I try to not save anything important on platforms."

(Discussion groups with students)

4. Findings

4.1. On the right to the free development of childhood

EdDIT proves that **it is not possible to ensure the right to the free development of childhood when using digital platforms in education**, because:

• The digital literacy skills of the student's role models (teachers and families) are insufficient to protect their digital identity and favor the comprehension of the environment. Teachers learn how to use platforms just as indicated, which limits how they use them and their ability to access other digital tools that students use outside of school.

• Student's acquisition of digital skills and responsibilities is often limited by the digital platforms that teachers are familiar with and can effectively use, thereby limiting children and adolescents from exploring other digital environments.

Schoolwork fosters a digital monoculture, that is, the predominant use of a single platform, which in the Catalan case is Google. This can pose a **menace to building critical and informed citizens,** because:

• The knowledge and daily use of digital education platforms is relegated to a single commercial option. This can lead to an understanding of the world that is tied to the commercial interests of the provider, turning students into captive customers of their services.

• There is a shortage of awareness among several agents regarding the importance of designing and executing digital responsibility. This implies that schools build and strengthen the critical thinking of students to consolidate their role as citizens and to understand the social, economic, political, educational, and cultural implications of living in a digital society. The study also shows that **schools do not have specific protocols** to ensure the right to the free development of childhood when using commercial digital platforms. Therefore, the results have also found out that:

- Current laws do not specifically regulate the digital education space.
- It is Big Tech that suggests protocols and rules to protect children in the digital context.

- Most school spokespersons admit that they are more aware of the protocols of Big Tech than of the legal framework.

4.2. On the right to equality and non-discrimination

There is a clear **tension** between the **private provision of** educational services and the **public provision** of education in the digital sphere:

• The interests of Big Tech are profit in the present and customer acquisition in the future.

• At the other end of the spectrum, the interests of the public education system, although expository, focus on ensuring equal educational opportunities for all students.

• For many participants in the survey, the penetration of Big Tech into the public education system poses a threat to the principles education must enshrine.

• The study reveals several voices that question the suitability of allowing actors with interests outside of public education to influence its development. Anyhow, these are not absolute beliefs, but there is a general agreement on how hard it is to develop platform education strategies without Big Tech.

• It is clear that the educational administration must regulate more strictly and forcefully, and get actively involved in the platformization process, since it is responsible of ensuring the right to equality and non-discrimination, also in the digital context.

Given the commercial interests of Big Tech, **citizens must be better prepared to understand the underlying processes of education platformization** through digital literacy and awareness of the risks of using these platforms. This is necessary because:

• Not everyone is as equally well prepared, and there are biases that can reinforce previous inequalities (education or digital skills, for example).

• Gender and social inequalities have several impacts on the access to digital technology, both in terms of physical access and critical use. This has consequences on student development.

• These inequalities do not necessarily result from the use of digital technology, but rather from the lack of a specific strategy to address them.

Regarding the right in question, **Big Tech's confidence in its ability** to improve inclusion in education through its services and products stands out. However, **they do not make explicit the mechanisms to achieve this.**

The other actors that link technological innovation and universal access are **concerned,** and warn that instead of improving educational inclusion, **there could be situations that worsen it,** such as:

• The connection between datification processes and the use of algorithms to guide digital services and the replication of inequalities.

• Equipment and training difficulties to apply innovative inclusion processes.

• Inappropriate use of digital technology in all educational contexts and for all students.

4.3. On the right to freedom of teaching and academic freedom

Considering the **digital tools, and critical skills** required to develop these rights, as well as **the pedagogical decisions made** by teachers, the following results are listed:

Families do not have an alarming opinion about the negative impact of these platforms on the management of public education.

• Some narratives stand out on the need to acquire digital skills to apply and use digital education platforms appropriately.

• Big Tech strive to make their digital tools more accessible and make the work of teachers easier. This means that the educational decisions on digital platforms do not come from governments or politicians, but from private political actors.

Another of the most emphasized aspects of the participants in the study is **the teachers involvement in the use of different digital platforms:**

• Some schools have encouraged the creation of committees to reflect on the use of these platforms and other technological innovations.

• Schools are critical of the political authorities because they have received little training. This is why some teachers have opted for self-training.

• Some teachers also express an outright refusal of corporate digital platforms.

Finally, another important point is the **confrontation between commercial platforms and other alternatives:**

• Some experts point to the need to create digital spaces that ensure control over personal data.
• The decision of the school management team limits academic freedom in choosing which platform to use, creating new hierarchical processes in schools.

• Some of the most critical opinions claim that the use of Big Tech platforms leads to processes of deprofessionalization of teachers, in contrast to what could happen if alternatives were used.

4.4. On the right to information and freedom of thought and expression

Schools **do not have enough support to guarantee that the use of digital platforms protects the right to information, freedom of thought and expression**. This is because it requires digital skills and a non-deterministic perspective on the possibilities of digital technology:

• There is a need to better understand how information is structured in digital contexts and how schools can support this learning process.

• Access to more information does not guarantee the right to information, but means that schools must have more capacity to select and choose what is relevant.

• It is crucial that teachers are aware of this and acquire digital information skills to teach to students.

Big Tech's use of personal data collected on their for-profit platforms is a **concern for families** because of how it can influence the behavior of children.

Therefore, **it is essential to develop comprehensive approaches** that go beyond the debate of whether digital education platforms should be used or not, outlining how and why they are used, and taking into account the safeguarding of children and educational objectives.

4.5. On the right to access modern technology and digital literacy

1) Provision of infrastructure, devices and access to digital platforms

Governments have left the responsibility of providing digital tools to schools in the hands of Big Tech. Education policy has not promoted equal access to digital technology or equal digital literacy for all students:

• Educational actors agree on the importance that all students have access to digital technology.

• However, there are contrary opinions on the government's strategy of outsourcing the supply of these technologies to Big Tech.

• Activists are the most critical. They point out that there should be public requests for tender with several organizations and even an evaluation of the appropriateness of this outsourcing.

• Most families believe that cooperation between governments and Big Tech is necessary, while agreeing on the urgency of monitoring their commercial interests.

2) Government regulation and limitation of Big Tech

• Almost all experts, families, and activists agree on the need for governments to regulate and set limits on Big Tech. In particular, they view the legislative progress of the European Union as positive and essential.

• Families blame teachers because they believe they should monitor the student's use of platforms more closely. In contrast, they defend their own ability to monitor which platforms their children use through parental control.

• Ironically, students claim to feel safe when using digital platforms at school, but not so much at home, where they feel freer but also more vulnerable.

3) Digital literacy of teachers and students

The government's submission to political pressure and technological solutionism of Big Tech has led to a **monopoly and**

a shift away from educational interests, neglecting the needs of teachers:

• Teachers confirm this gap when they report that the training they receive does not match the reality they face in the classroom.

• Both teachers and students are improving their literacy, but from an instrumental perspective limited to a few digital platforms and cut off from any kind of criticism regarding the risks and consequences of their use.

4.6. On the right to privacy and protection of personal data

The emergence and proliferation of digital platforms in and outside of education has raised concerns among governments, schools, families, and students. Therefore, edDIT has identified **new challenges for governing education and children's rights:**

• Big Tech can adapt to changing situations. The right to privacy is included in the terms and conditions of digital platforms, which users must agree to in order to use them.

• However, the wording of these texts is hard to understand by educational actors.

• Although there has been legislative progress in recent years, experts point to the need for new and stricter rules to clarify who is responsible for protecting and managing personal data.

• They also state the need to reinforce or build public organizations capable of monitoring the use of data.

• Although families formally authorize the use of digital platforms at schools, they are worried about the use of student's personal data.

• Experts share this concerns, and claim that the interests and motivations of Big Tech pursue commercial gains rather than educational objectives.

• Student data has become a profitable business. Nothing will change unless governments refocus the goal of their digital inclusion policies.

• As there is a lack of clarity on the mechanisms to protect data and the right to privacy, there is a feeling of vulnerability and growing concerns among teachers, school management teams, students, and families on the possible breaches of the right to privacy and the commercial use of personal data by Big Tech.

In the context of global and local education platformization, in which the **right to education is subordinated to the commercial interests of Big Tech,** it is proven that:

• There is a growing awareness from teachers and school management teams on the importance of protecting student's personal data.

• Students are skeptical of the use of their personal data by Big Tech, but this suspicion tends to dissipate when it comes to digital education platforms.

• For the most part, teachers and school management teams trust digital educational platforms.

• This emphasizes the need to promote critical digital literacy processes, not only addressed to families and teachers, but also to children and adolescents (Pangrazio & Cardozo-Gaibisso 2021).

In this new era of global governance of education, states are increasingly delegating responsibility for education policy to private and non-governmental actors (Dale, 2007). The same happens with the provision of technological infrastructure and the management of the data it generates. These are global technologies that lack transparency and are difficult to audit by governments (Saura et al. 2021; Williamson, 2021).

By renouncing to directly provide these technologies, states give a free hand to Big Tech, who take charge of raising the awareness of governments and supporting their digital literacy, with all the risks and problems this entails for the democratic governance of education.

4.7. General findings on the right to education in the digital context

1) Educational system

The governance of educational systems is closely linked to the management capacity of digital services providers and the possibilities offered by digital platforms used in education. These ties prove the interdependence of the public education system with Big Tech:

• Due to its inability to lead the digital transformation process, the public education system has turned to global commercial providers. In doing so, it has overcome its budget limitations and lack of governance on personal data.

• Education is a lucrative niche market for Big Tech because it not only familiarizes students with their platforms, but turns them into potential customers in the future.

• Big Tech digital platforms in education produce vast amounts of data, giving them the ability to reinforce existing biases in society and create new ones.

• The affinity between educational administrations and Big Tech can become a threat to educational systems aimed at improving social equity and development.

2) Educational actors

• Schools lack capacity to influence the process of taking on digital platforms, and are unaware of the impacts that using them can have on their profession and on student learning.

• Teachers, school management teams, students, and families do not receive enough training to develop the necessary digital skills to navigate the digital environment in fair and democratic conditions.

• Therefore, they cannot fully exercise digital citizenship with all its complexity.

3) Gender perspective

• It is the most notable absence in the study and proves the lack of awareness of this theme in the field of digital education and how much still needs to be done.

• Few voices have warned about issues such as: the predominance of men in developing digital technology; the reinforcement of gender stereotypes through an uncritical use of digital platforms; the unequal use of digital resources based on gender; or the strategies to educationally intervene on these issues.

Thus, the conclusion to the main question of the study is that the platformization process of education has developed under the guidance of technology corporations and is likely to violate children's rights in the Catalan education system.

5. Recommendations

In order to **strengthen digital sovereignty in digital education,** the results of this investigation suggest some recommendations to the different actors involved, locally and at a global scale. To achieve this goal, a coordinated answer of all educational actors is essential. Therefore, the application of these recommendations must be organized and executed in synchrony.

• **Educational administration**

It is responsible of promoting the chosen digital platform in schools. These are the recommendations:

1) Effective regulation

-Regulate and actively participate in the digitalization processes and use of platforms at schools.

-Promote alternatives to Big Tech educational platforms that ensure digital sovereignty.

-Apply and explain the rules that clarify who is responsible for protecting and managing personal data.

2) Digital participation based on wellbeing, privacy and gender equality

Create spaces for dialog between families, schools, and educational administrations to build or choose digital educational platforms.

-Rely on the support of specialized digitalization administrations to help them develop their interventions.

-Equip schools with the necessary specialized human resources to develop these interventions.

-Design strategies to develop the school's digital platforms with gender perspective, in such a way that service and product design is not done mainly by men.

3) Awareness and literacy

-Train all educational actors so they can understand how digital tools work and their impact outside of the classroom.

-Develop citizen awareness campaigns on the hidden processes of education platformization, especially those that reinforce gender or social inequalities.

-Offer training to schools to gain skills and critically bolster students to strengthen their role as digital citizens and understand the different implications of living in a digital society.

-Provide teachers with skills that allow them to make an appropriate use of digital educational platforms and to make pedagogical decisions with a critical perspective on the risks and consequences of using Big Tech platforms.

-Implement these actions also at the university level, within the framework of teaching degrees and teacher postgraduate education.

4) Auditing of the platformization process

-Audit Big Tech working in education to check their compliance with human rights.

-Limit technology corporations in schools through regulations that prevent them from setting their own rules and limits.

-Identify public organizations capable of monitoring the use of data.

• School management teams

School management teams are the second actors with more influence on the choice of digital tools. So that decisions are informed, collective and conscious, the recommendations are:

-Attend trainings and share resources on the platformization process in schools.

-Be familiar with alternatives to commercial digital platforms, and promote teacher training to stimulate their use.

-Create participatory spaces where educational actors and the administration can decide on the process of choosing which digital educational platform to use.

-Involve educational actors (students, teachers, and families) in the critical process of choosing digital platforms, so that they are aware of their implications.

• **Teachers**

School management teams decide the main digital platform to use, but teachers are constantly making decisions about how to use it in the classroom. Therefore, it is important for them to be involved in the decision-making process and to explore with students the consequences of using these platforms. To achieve this, it is recommended to:

-Participate in training and review resources to become familiar with platform features, such as privacy, protection of personal data, and strategies for keeping users connected.

-Promote the use of non-profit digital platforms among students.

-Carry out critical digital literacy exercises on the use of digital educational platforms among students[10] and as a result, produce a catalog of tools ordered according to their privacy and ethical standards.

-Look after the critical use of platforms by students, in particular, regarding the reinforcement of discriminatory stereotypes (gender, race, social, etc.)

-Deploy strategies so that the use of these platforms is not unequal because of the student's gender. For example, achieving higher attendance rates among women and non-binary genders in optional technology subjects.

-Critically analyze the implications of digital skills avoiding an instrumental use to discover how other alternatives interact with student's rights.

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[10] Exercise to evaluate the degree of privacy: https://www.lindacastaneda.com/mushware/tag/privacidad/

- **Students**

  -Access information and show inclination to receive and seek critical training on the use of digital technologies and the risks and consequences of Big Tech platforms in their schools.

  -Become involved in the decision making of their school on the choice of digital platforms.

  -Boost the creation of digital spaces in which students participate in a way that enables the creation of a comprehensive digital identity that goes beyond their role of users and consumers.

- **Families**

  -Demonstrate a willingness to be informed and educated about the risks and consequences of using Big Tech digital platforms in school.

  -Become involved in the decision making of schools on the choice of digital platforms.

- Big Tech **that build digital platforms aimed at education**

Big Tech have the responsibility of respecting children's rights, in particular those related to privacy, data usage, and UI design. As stated, the fact that an organization has commercial interests makes it less suitable to comply with these rights Therefore, it is recommended to:

  -Take a comprehensive view of children's rights to implement data and privacy protection policies in their educational services that make a special effort to safeguard them.

  -Promote and facilitate state audits of educational services that contain personal data of minors.

  -Promote transparency and accountability of their educational services.

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