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LANDSCAPE REVIEW

Data Governance for EdTech

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Executive summary

Education technology (EdTech) is increasingly being promoted to overcome persistent barriers in global education. By harnessing data and digital tools, EdTech can support personalized learning, improve access to quality instruction, and help fill gaps created by widespread teacher shortages. The challenges remain stark: 250 million children around the world are still out of school, including many with disabilities; there is a global shortage of 44 million teachers; and as of 2022, seven in ten 10-year-olds in low- and middle-income countries were unable to read and understand a simple sentence.

To improve learning outcomes, evidence-based strategies often rely on the collection and use of student data. Yet, while data can be a powerful enabler, their unregulated collection and use introduces serious concerns, particularly regarding children's rights to privacy, safety and equitable treatment. EdTech cannot be assumed to be risk free. Without adequate safeguards and governance, the very tools intended to enhance learning may instead expose children to new forms of harm.

In response to these concerns, UNICEF partnered with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Global Privacy Assembly (GPA), the international coordinating body for data protection authorities (DPAs), to conduct a global landscape review on data governance for EdTech.

When governed responsibly, data derived from EdTech have the potential to enhance education systems and promote equity. Learning analytics and artificial intelligence (AI) can be used to personalize instruction, monitor student progress and support early interventions, particularly benefiting learners with disabilities. In crisis situations or low-resource environments, EdTech can ensure continuity of learning at scale, and learning analytics can be used to monitor children, schools and districts which may be at risk of falling behind. At the system level, aggregated education data can inform public policy, improve teaching tools and contribute to more effective decision-making. Emerging technologies such as AI tutors, neurotechnology and immersive virtual or augmented reality tools also offer potential new pathways for student engagement and learning. With appropriate safeguards, EdTech data can be integrated across sectors, such as health and social services, to improve holistic child outcomes, although such integration must be approached with caution to avoid further compromising privacy.

Despite these benefits, the risks of data use by EdTech are substantial, especially in environments with limited regulation or weak institutional oversight. Privacy violations are a major concern, as children's personal and learning data are often collected by private companies without adequate consent or protection. Data-driven profiling can reinforce existing biases, constrain autonomy and limit future opportunities for children. The misuse of data, particularly when shared with law enforcement or immigration authorities, raises significant ethical and legal issues, while the commercial exploitation of children's data by private actors is a growing problem. Cybersecurity threats and breaches further endanger children, educators and education systems. Additionally, the environmental impact of large-scale data processing, including increased energy use and digital waste, poses broader risks to children's rights.

These harms are often magnified in low- and middle-income countries, where enforcement capacity is limited and data governance systems are underdeveloped. Vulnerable groups, including children with disabilities, refugee and migrant learners, and those living in poverty, are particularly exposed to these risks, as they are more likely to be targeted by profiling, surveillance or exclusionary algorithms.

Globally, regulation remains inconsistent. Few jurisdictions have specific legal frameworks to address EdTech data practices, and existing laws are often poorly enforced. Schools and education ministries frequently lack the technical and legal expertise they need to assess complex EdTech platforms or negotiate equitable data-sharing agreements. Meanwhile, EdTech companies are rarely required to be transparent about how they use or share data, and public authorities often have limited access to this information. Coordination between stakeholders, including regulators, educators, civil society and children themselves, is often weak or entirely absent. Despite being directly affected, children's perspectives are rarely included in EdTech policy or platform design.

Although promising governance tools are beginning to emerge, such as regulatory sandboxes, certification schemes and ethical AI standards, they remain fragmented and insufficient in scale. At present, the private sector continues to reap the primary benefits of education data, while public systems struggle to ensure that these data are used in the best interests of children.

EdTech data governance is fundamentally a children's rights issue. When mismanaged, poor data governance can undermine the very educational goals EdTech seeks to support. To ensure EdTech promotes safe, equitable and inclusive learning, governments must establish strong, transparent and inclusive frameworks for data governance. This will require meaningful cross-sector and cross-border collaboration; clearly defined roles for data protection authorities, education ministries and regulators; and the active participation of educators, civil society, families and children themselves. Only through inclusive, multi-stakeholder governance can we build an EdTech ecosystem that protects children's rights while realizing the full potential of digital innovation in education.

Background

Education technology (EdTech) is increasingly seen as part of the solution to some of the most persistent challenges in global education. From generating data analytics to enabling personalized learning, EdTech has the potential to help address such issues as teacher shortages and learning gaps. These challenges are substantial – currently, 250 million children are out of school globally, a disproportionate number of whom are children with disabilities.¹ There is also a shortfall of 44 million teachers² and, as of 2022, 70 per cent of 10-year-olds in low- and middle-income countries could not understand a basic written text.³ To drive progress, UNICEF's digital education efforts focus on improving learning outcomes through evidence-based approaches – many of which rely on the data that EdTech can supply.

However, EdTech is by no means a silver bullet to what is a complex global educational crisis, and data-driven solutions inevitably come with data-driven risks that need to be managed to safeguard children's rights. While much has been said (and critiqued) globally about the pedagogy and geopolitics involved in the deployment of EdTech products by multinational companies around the world,⁴ less attention has been paid to the data processing by EdTech and its impact on children's rights. That is why UNICEF partnered with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Global Privacy Assembly (GPA)⁵ – the formal coordination mechanism for data protection authorities (DPAs) around the world – for this landscape review. The GPA has prioritized a review of data governance for EdTech and an assessment of the use of artificial intelligence (AI) in schools as two priority work areas for 2024–2025. This gave UNICEF the opportunity to consult with several DPAs from different regions for this landscape review and the accompanying policy recommendations.

The objectives of the landscape review are to:

- Define the key stakeholders in data governance for EdTech and identify the main challenges that each of these stakeholders faces in terms of ensuring the protection of children's rights through data governance for EdTech.
- Provide an overview of the current multi-stakeholder data governance mechanisms in place for EdTech in different countries and contexts, and the role of governments, DPAs and EdTech companies in these different models.

This initiative is supported by an expert advisory group⁶ from different disciplines and geographies, formed to critically assess the current state of data governance for EdTech.

The current state of the EdTech sector

What is education technology, or 'EdTech'?

There is no commonly agreed definition of education technology (EdTech).⁷ The global education market is complex, and the term 'EdTech' as used by the EdTech industry itself encompasses education-related technologies for early childhood, primary and secondary education, and further education for adults. This landscape review focuses on EdTech used with children in schools and includes education management information systems (EMIS),⁸ and hardware and software solutions for homework and private tutoring.⁹

For the purposes of this landscape review, we only focus on EdTech developed specifically for and to support school-based teaching and learning environments. This includes EdTech solutions related to the school curriculum, EdTech tools to support education for children with special needs, and EdTech tools for testing and assessment. This part of the EdTech sector consists of large multinational companies, such as those headquartered in the United States,¹⁰ which have rolled out education platforms globally since the coronavirus disease 2019 (COVID-19) pandemic, starting in 2020. Large multinational Chinese and Indian EdTech companies also have a large footprint throughout Asia.¹¹ Many medium-sized EdTech companies also operate across multiple jurisdictions, and a significant number of smaller, often national EdTech companies and start-ups from all regions produce apps and websites that are more contextualized in terms of language and cultural context. EdTech tools for higher education and EMISs are outside the scope of this landscape review.

What do we mean by 'data governance'?

We use the term 'data governance'¹² to refer to governance by governments and regulators of the data processing carried out by EdTech companies, and to refer to self-governance by the EdTech sector.

Our main aim is to consider how data governance of EdTech fits into broader national, international and multi-stakeholder governance frameworks, from a child rights-based perspective. The governance of the private sector, including the EdTech sector, is primarily a government responsibility. The United Nations Guiding Principles on Business and Human Rights (UNGPs)¹³ set out the State's duty to put in place effective laws and regulations to address adverse human rights and child rights impacts of all companies, including EdTech companies. Businesses themselves also have a responsibility under the UNGPs to respect children's rights.¹⁴ This means that EdTech companies must know their potential impacts on children's rights, including the impacts of their data processing activities, and must prevent and mitigate abuses, and address any relevant adverse impacts. As outlined in the next section, **data governance is intrinsically related to children's rights, especially when it comes to the EdTech sector.**

What kind of data are processed by EdTech and used for teaching and learning in schools?

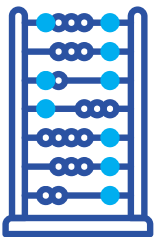
Personal data processed by EdTech may include direct identifiers such as names, addresses, national identity numbers, unique education-based identification numbers or codes, photographs, health data, fingerprints, and voice or other biometric records. They may also include other forms of data generated by or outside EdTech use, such as email addresses, location data from mobile phones or IP addresses. In addition, indirect or quasi-identifiers might include postal codes, gender, racial or ethnic identity, place of birth, grade level or participation in a specific course.¹⁵ Children’s learning data also include thinking characteristics, learning trajectories, engagement scores, response times, number of pages read and videos viewed.¹⁶ There are also other kinds of data which occupy a grey area whereby they may serve to identify individual students when combined with other data – for example, school meal choices or textbooks assigned to students.¹⁷ Many of these data points can be used to identify both children and their parents, and often their teachers as well.



DIRECT IDENTIFIERS:
Names, addresses, national identity numbers, unique education-based identification numbers or codes, photographs, health data, fingerprints, voice or other biometric records.



OTHER FORMS OF DATA GENERATED EITHER BY OR OUTSIDE EDTECH USE:
Email addresses, location data from mobile phones or IP addresses. In addition, indirect or quasi-identifiers might include postal codes, gender, racial or ethnic identity, place of birth, grade level or participation in a specific course.



CHILDREN’S LEARNING DATA:
Thinking characteristics, learning trajectories, engagement scores, response times, page reads and videos viewed.



OTHER KINDS OF DATA THAT MAY IDENTIFY INDIVIDUAL STUDENTS WHEN COMBINED WITH OTHER DATA:
School meal choices, or textbooks assigned to students. Many of these data points can be used to identify both children and their parents, and often their teachers as well.

What are the opportunities and risks posed by data processing by EdTech?

Opportunities offered by data derived from EdTech

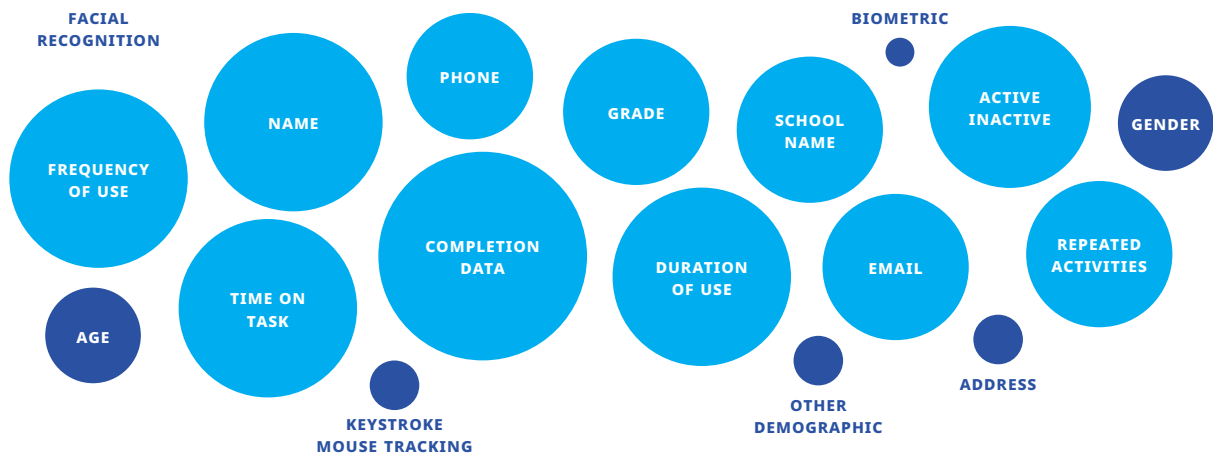
To ensure that each child's right to education is fully and equitably implemented, there is a need for reliable data. Data are needed to inform decision-making by educators and policymakers, as well as to train computer algorithms that might offer accelerated learning benefits. Data can also be used by researchers and innovators to document the benefits of different educational interventions, and to define and optimize algorithms that can improve children's outcomes.¹⁸

Learning analytics data could be provided to teachers, schools, local authorities and education ministries. When learners interact with EdTech, this generates massive volumes of data which, when analysed appropriately, can help teachers understand their students' progress and predict outcomes.¹⁹ At a collective level, learning analytics data can highlight exclusion and inequality in schools, and support evidence-based strategies for improvement.²⁰ However, the interpretation of learning analytics requires a minimum level of data literacy, which is often lacking in schools and even in education ministries.²¹ Further, governments, schools and educators still need to define the education problems that data can solve and the questions that data can answer, rather than allowing a proliferation of data collection for vague and sometimes opaque purposes. If these digital literacy and data analytics needs were addressed, it could unlock tremendous capacity among educators to use data for the benefit of their students.

EdTech could provide personalized learning at scale. This includes technologies that can cater to lower literacy requirements and can adapt to children with learning disabilities. EdTech can be rolled out in crisis situations to provide personalized learning, even in humanitarian contexts.²² The UNICEF landscape review of personalized learning products in low- and middle-income countries²³ found that products capture a range of personal information from children during login, access and use. However, in most cases, data ownership rests with the EdTech solution provider, and data security measures are patchy (see *Figure 1*).

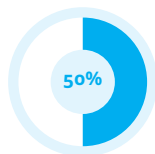
Figure 1. UNICEF analysis of 40 personalized learning (PL) products' data protection and privacy policies

User data captured by PL products

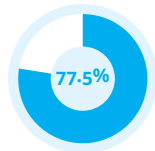


User data captured by PL products

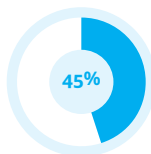
products reported having both data management and data protection policies



products reported their data being encrypted*



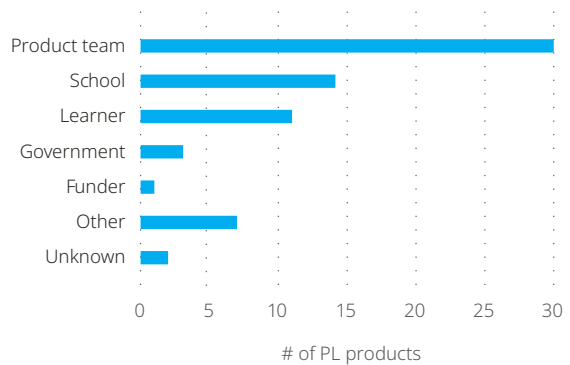
products reported that data are not shared with third parties



*A technique of translating data from text to hashed code that is decrypted with a special key.

Source: UNICEF (2022).²⁴

Ownership of PL product data rests with:



AI-powered EdTech can make use of data to provide diagnostic tools and learning aids for children with disabilities or learning difficulties. AI-powered EdTech tools have been used to diagnose specific learning difficulties, create artificial voices matched to a child’s voice to assist with speech impediments, and provide real-time transcription during live teaching into fluent text or sign language for deaf and hearing-impaired students.²⁵

Combining data generated by EdTech with other data sources could potentially have benefits beyond education.²⁶ Unique identifiers allocated to children at school can be used to tag all of the data generated by EdTech in schools, and they can then be linked to civil registries, and to health and social services.²⁷ It should be noted that some countries actively choose to keep education data separate from other kinds of data.²⁸

Risks posed by data derived from EdTech

Data processing by EdTech may pose fundamental risks to a child's right to privacy, which is a core right under Article 16 of the United Nations Convention on the Rights of the Child (CRC), and which facilitates children's enjoyment of other rights.²⁹ Data processing by EdTech can also have wide-ranging impacts on children's rights to education, information, freedom of expression, thought, conscience and religion, self-determination and autonomy.³⁰

Learning analytics may drive education towards goals that fit with the needs of big data analyses, rather than the realization of children's right to education.³¹ Many EdTech tools emphasize mathematics and language skills, which are more easily measured through data analysis, often to the detriment of the creative arts and non-academic pursuits.³² There is a danger that students will be reduced to data constructs, which could narrow their educational opportunities.³³

Profiling of children's education performance and behaviours could harm their future prospects. Profiling children limits their potential for self-development, as behavioural predictions and nudging techniques can predetermine options and choices.³⁴ There is a risk that information about their performance or behaviour at school could be used to create profiles, which could unfairly influence their opportunities as they move into higher education and the workforce.³⁵

Profiling of children using data involves using automated processing of a child's personal data to evaluate or predict aspects of their behaviour, abilities, interests or characteristics.



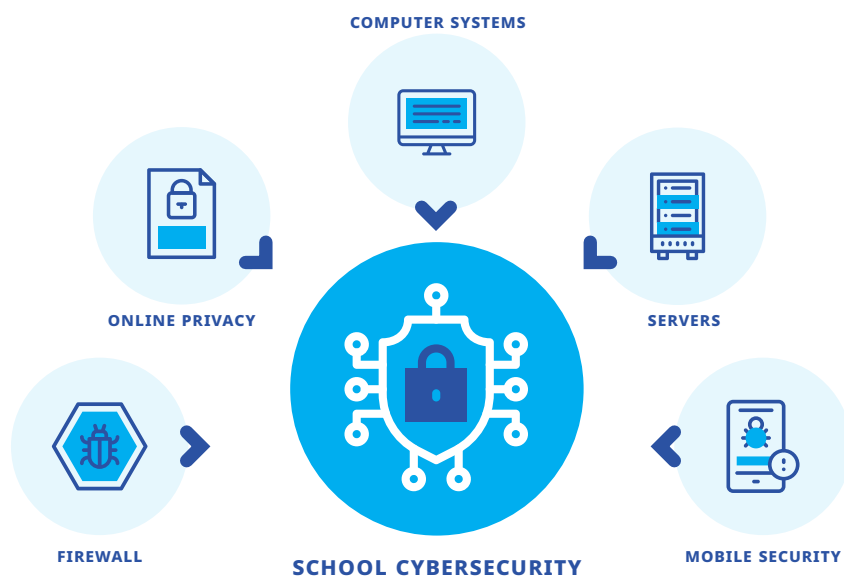
Profiling of children using data **involves using automated processing** of a child's personal data to evaluate or predict aspects of their **behaviour, abilities, interests or characteristics.**

EdTech tools are being used by governments to survey children beyond the purposes of education, with behavioural data about children from the school context shared with social services, law enforcement and immigration officials.³⁶ Children have the right to physical, psychological and emotional safety and security while pursuing education.³⁷ Increasing surveillance by governments within schools can hinder academic freedom and expression.³⁸

Through their engagement with EdTech in schools, children’s data may be used by the private sector for profiling for commercial purposes. Both Human Rights Watch³⁹ and the Digital Futures Commission (in the United Kingdom)⁴⁰ have published research highlighting the commercial exploitation of children’s education data.

Data used to train algorithms for EdTech can be subject to bias, which could lead to unfair outcomes for already marginalized children. Machine learning algorithms can replicate stereotypes and biases contained in their training data, leading to a perpetuation of social disadvantage.⁴¹ This is a particular concern where AI is used to predict learning trajectories, capacities and outcomes.

Schools are frequently targeted by cyberattacks, and data processed by EdTech may be subject to security breaches due to weaknesses in EdTech company or school cybersecurity systems. Half of the 23 DPAs surveyed by UNICEF and the GPA Digital Education Working Group (DEWG)⁴² reported that they were aware of a data breach involving EdTech companies in their country. UNESCO reported in 2022 that globally the education sector⁴³ accounted for 5 per cent of ransomware attacks and 30 per cent of security breaches.⁴⁴ Such attacks have been well documented in numerous countries – for example, in the Kingdom of the Netherlands⁴⁵ and India.⁴⁶



There are considerable environmental risks and consequent child rights risks associated with data processing at scale by EdTech. The data processing and storage needed for EdTech to function, as with other technologies, requires massive amounts of energy, water and land to power data centres.⁴⁷

Foresight and future trends

UNICEF convened a meeting of its expert advisory group on Good Governance of Children's Data,⁴⁸ led by a foresight expert, to envisage how data processed by EdTech might impact children's learning experiences in the future, and how governance models may need to adapt to new digital realities. The STEEP framework,⁴⁹ a tool used to scan and analyse the external environment by categorizing influencing factors into Social, Technological, Economic, Environmental and Political domains, was employed to encourage participants to identify a wide range of drivers of change that could shape the development of their technology area over a 10-year time frame. The process focused on how such changes might affect children, and what regulatory or other actions could be needed to steer developments towards a positive outcome.

Key findings related to the possible evolution of EdTech

Next generation of AI: Following generative AI, the next major advancement was predicted to be agentic AI, where AI systems not only generate content but also take actions on a user's behalf, making decisions and completing tasks autonomously. AI agents interact with one another, as well as with humans, to accomplish a goal. In the context of education, agents might take on the different roles found in an educational establishment, whether on the administrative side or as a tutor, advisor or peer. While today's AI tutor focuses on a single learner, a set of agents could in theory set up and run a class or school of tens or hundreds of students. This could lead to risks such as privacy concerns, over-reliance on technology, lack of human support, algorithmic bias, teacher displacement and high costs.

Integration of neurotechnology into EdTech: Experts envisaged that neurotech would be used increasingly in educational contexts. Technologies that measure brain activity, such as electroencephalography (EEG) neurofeedback devices, are likely to be used to provide real-time feedback to students about their focus and cognitive states. Some of these kinds of interventions already exist and, by training students to enhance brain functions related to attention and memory, they aim to improve learning efficiency, particularly for students with learning disabilities or attention disorders.⁵⁰ The integration of neuroscience and biometric data in education presents opportunities for personalized learning but raises significant ethical challenges. The digitalization of biology could lead to individualized health solutions that improve learning outcomes, while the integration of biometric sensors might revolutionize educational approaches.

Standardized curricula developed by the private sector: Concerns were raised about standardization of curricula by big tech companies. Experts identified declining trust in traditional education systems, arguments about the need to have systems that can be scaled up, and the attraction of immersive (VR and AR, see below) environments to children, leading to the concern that tech companies could impose their systems, and potentially their curricula.

Innovative data governance tools: There was concern that the concept of consent is being eroded, particularly for children in vulnerable contexts, necessitating new approaches to responsible data use. Furthermore, children's education data are increasingly subject to data breaches, or used to track student behaviour without the child's meaningful understanding. These intersecting vulnerabilities are predicted to become more extreme in the future as technologies evolve and new ones emerge, such as quantum computing. There is a need for collaborative, socially responsible governance frameworks for data use, such as the 'social licence to operate', which emphasizes trust, transparency and shared accountability in how data are collected and used.

VR and AR: Virtual reality (VR) and augmented reality (AR) technologies are expected to become increasingly pervasive in education, potentially blurring the lines between learning, entertainment and personal data. Immersive learning, through simulations and wearable devices, was anticipated to proliferate across all educational levels as technology becomes more affordable, increasing the processing of sensitive biometric data from children.

Weakening of trust: It was envisaged that the fragmentation of information and the spread of mis- and disinformation could make it increasingly difficult for society to agree on common facts, eroding trust in teachers and established curricula as reliable sources of truth.⁵¹ Without media and digital literacy education, the combination of misinformation and biased educational technologies could risk further undermining children's ability to navigate and assess information in an increasingly digital world.

Fragmented governance: It was predicted that geopolitical tensions could lead to a fragmented AI governance approach, with varying standards and regulations across regions. This could complicate global efforts to protect children's rights in relation to EdTech, as inconsistent laws and protections may undermine efforts to ensure the safety and privacy of children using AI-driven educational tools.⁵²

Environment: Increased reliance on AI-driven learning may encourage greater digital consumption, leading to higher e-waste and energy demands. As children are among those most vulnerable to environmental degradation, integrating AI responsibly – by prioritizing energy-efficient models and sustainable practices – will be crucial to minimizing its ecological footprint while maximizing educational benefits.⁵³

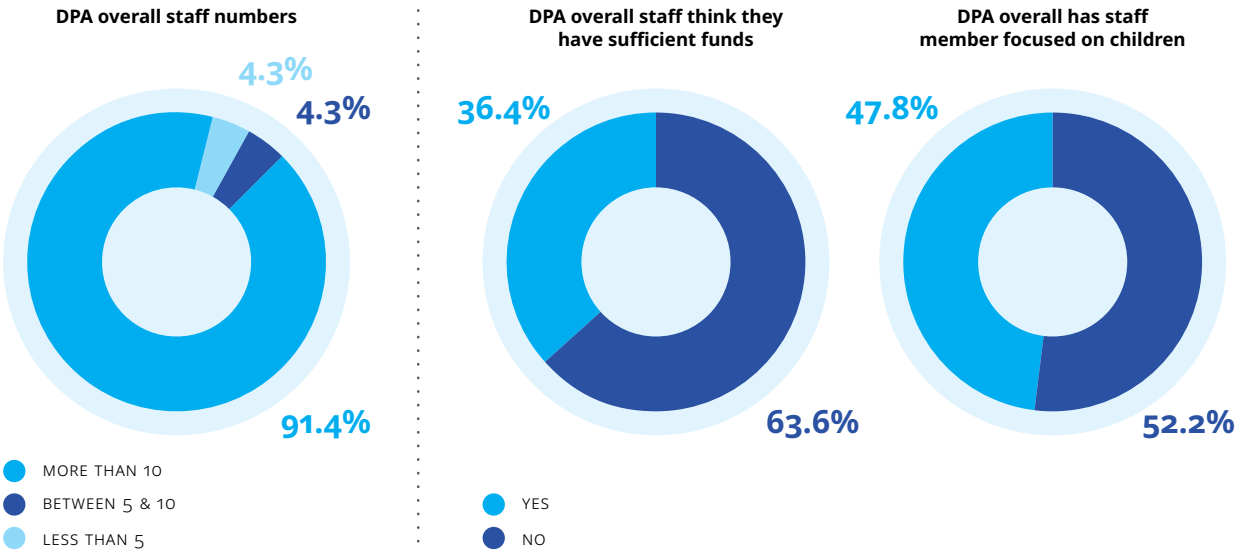
Data governance actors related to the EdTech sector

This landscape review, due to its specific focus on **data governance** for EdTech specifically, centres on the roles of DPAs, education ministries and the EdTech sector.

Data protection authorities

Generally, DPAs are public entities with a mandate to supervise the implementation of legislation on the protection of personal data or privacy, and they are normally independent of government.⁵⁴ DPAs connect with each other globally via the GPA, whose membership consists of more than 130 DPAs across the world. The GPA is the premier global forum bringing together DPAs with the goal of advancing global privacy protection in the digital age and establishing a global regulatory environment with clear standards and a high level of data protection. Protecting children’s privacy online is a priority action identified by DPAs as part of the GPA strategic workplan.⁵⁵ Some countries do not have active DPAs, including those where legislation mandates the creation of an independent DPA but where resources have not yet been allocated to establish or staff such an institution. This gap in implementation is reflected in *Figure 2*, which illustrates the staffing status of DPAs across countries.

Figure 2. Staffing of DPAs



Source: UNICEF/GPA DEWG (2024).⁵⁶

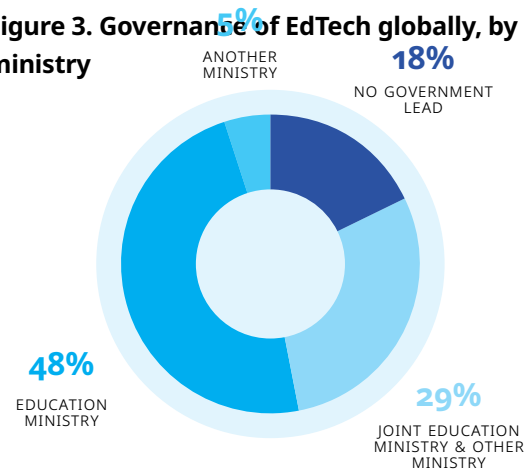
There is variation in the approaches taken by DPAs when acting in their oversight roles. Where civil society is strong and equipped to engage with the governance of EdTech, DPAs have come under pressure to investigate EdTech companies’ data processing practices following complaints, and to bring enforcement actions.⁵⁷ DPAs in lower-resource countries tend to focus more on providing guidance for the EdTech sector and digital literacy materials for the public, rather than initiating enforcement actions, which need significant human and financial resources. Many DPAs also provide direct information services to the public.

Education ministries

Education ministries have varying mandates, depending on the level of government centralization in the country, and they are often tasked with overseeing a complex system with many interconnected subsystems and stakeholders.⁵⁸ Many aspects of decision-making related to education are devolved to the local authority or even school level, and there also commonly exists a private education sector that is self-governed outside the public system. The incorporation of frontier technologies into EdTech – such as AI and generative AI, machine learning and neurotech – may bring EdTech within the purview of other ministries and regulators as well (see Figure 3). UNESCO emphasizes the importance of education ministries leading on decisions about the integration of technology into education, to help ensure that pedagogical

decisions take precedence over commercial considerations.⁵⁹

Figure 3. Governance of EdTech globally, by ministry

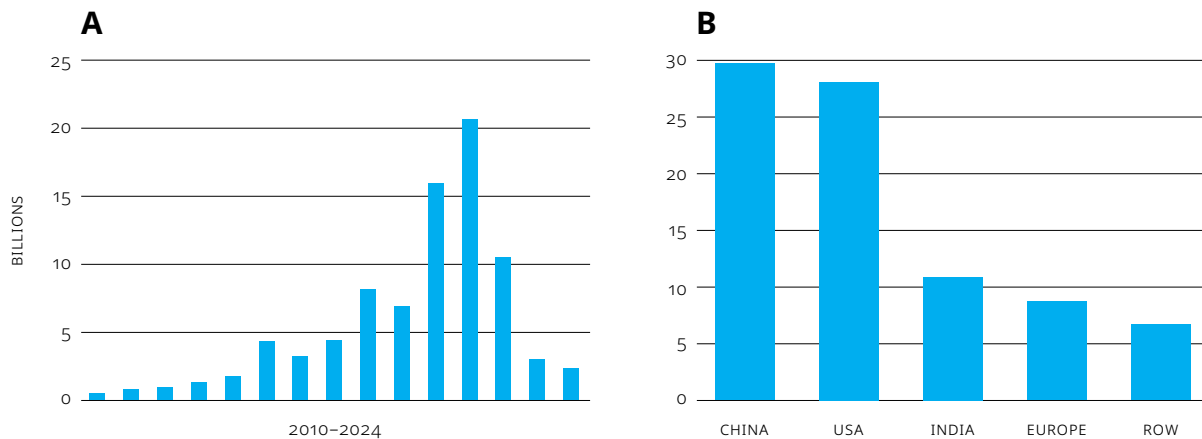


Source: UNESCO Global Education Monitoring Report (2023).⁶⁰

The EdTech industry

The EdTech sector is a significant global industry. The global EdTech market was estimated to be worth US\$142.37 billion in 2023,⁶¹ and it is expected to grow at an annual rate of between 16 and 20 per cent, putting the value of the market in EdTech at approximately US\$404 billion in the coming years.⁶² The EdTech investment bubble appeared to burst soon after 2021, when the COVID-19 pandemic ended, and 2024 saw the lowest level of investment globally since 2015. However, AI in the education sector is projected to grow significantly, with estimates predicting a global increase of approximately US\$21 billion in market activity by 2028 (see Figure 4A).⁶³ Data from HolonIQ reveal that the largest venture capital investments in EdTech are directed towards China and the United States, followed by India and Europe, with a very small percentage invested in the rest of the world (see Figure 4B). In 2018, China and India combined accounted for more than 70 per cent of global EdTech venture capital investment and, as of 2019, 9 out of 10 of the global EdTech unicorns (privately held companies valued at more than US\$1 billion) were Chinese or Indian.

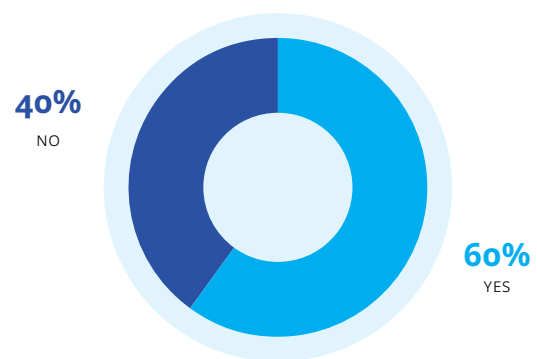
Figure 4. (A) Global venture capital (VC) investment in EdTech, 2010–2024 and (B) Global VC investment in EdTech by region, 2010–2024



Source: HolonIQ (2025).⁶⁴

Market sizes for EdTech in Southeast Asia are sizeable and growing.⁶⁵ In Africa, the EdTech ecosystem is expanding and producing innovative educational solutions, but lacks investment funding due to investor risk aversion in a continent with high political instability, economic volatility and a lack of infrastructure.⁶⁶ In Latin America, Brazil and Mexico host a significant number of EdTech start-ups, and the EdTech sector in the region benefited from a sixfold increase in investment in 2021.⁶⁷ In Europe, a high percentage of EdTech companies are micro-enterprises and, by 2023, the continent was home to an estimated 6,500 EdTech start-ups.⁶⁸ This demonstrates that national markets for EdTech products are growing across the world, which is an observation shared by DPAs (see Figure 5).

Figure 5. Proportion of DPA staff who are aware of a national EdTech industry in their country



Source: UNICEF/GPA DEWG (2024).⁶⁹

Not all EdTech organizations are companies. The EdTech ecosystem also includes non-profits, as well as public-private partnerships. At a national level, for example in India,⁷⁰ a lot of EdTech is managed by the public sector, which leads to data being hosted by governments as well as the private sector. The UNICEF Gateways to Public Digital Learning Initiative promotes the use of EdTech by the public sector as a high-quality, free public good.⁷¹

Data governance models in place for EdTech in different countries and contexts

As part of the State's duty to protect children's rights, the United Nations Guiding Principles on Business and Human Rights (UNGPs) require States to adopt a 'smart mix' of mandatory and voluntary measures⁷² to foster EdTech companies' respect for children's rights. This includes implementing, where appropriate, robust laws, regulations and policies to govern the private EdTech sector, as well as supporting companies in adopting appropriate measures to respect children's rights through incentive-based means and voluntary measures. Furthermore, the Abidjan Principles, developed through a multi-stakeholder consultative process and adopted in 2019, provide guiding principles on States' human rights obligations to provide public education and to regulate private involvement in education.⁷³

Laws, policies, and government guidance and oversight related to EdTech

While a growing number of countries govern children's education data through laws and regulations at national, local and school levels, data governance specifically for EdTech remains lacking. Most countries have data protection and privacy laws in place that are generally applicable to all sectors, including education.⁷⁴ However, as of 2023, only 16 per cent of countries had laws specifically protecting children's data privacy in education. Even where such laws exist, they typically focus on how education ministries and schools handle data, rather than directly regulating the private EdTech sector.⁷⁵

In jurisdictions that follow the European Union (EU) General Data Protection Regulation (GDPR), or similarly drafted data protection regulations, schools – not the private sector – are usually responsible for defining how children's data are processed and for what purposes. In the EU, the commercial use of data processed by EdTech is governed by the general application of the GDPR.⁷⁶ Outside the EU, due to the 'Brussels Effect', an increasing number of countries also have laws that are modelled on or aligned with the GDPR.⁷⁷ Schools are often 'data controllers'⁷⁸ under GDPR-style data protection rules, which means they are legally responsible and accountable for determining the means and purposes of data processing.⁷⁹ Under the GDPR, EdTech companies themselves are generally 'data processors' and, as such, their duties relate to confidentiality, record-keeping, implementing technical standards and notifying the school in the case of a data breach.⁸⁰

In countries without a national or federal privacy law similar to the GDPR (e.g., Canada and the United States), the jurisdictional landscape for education governance can be complex, with education being governed at the provincial/state level, and provinces/states creating privacy laws that differ from each other, while commercial matters are governed at the federal level.

Schools and EdTech companies are in an unequal power relationship. Although it may seem appropriate for schools to determine how children's data are collected and processed by EdTech companies – and to be held accountable for it – experts interviewed for this landscape review advised that schools often lack the legal or technical expertise needed to make such determinations. Further, the

experts explained that contracts between EdTech companies and schools are often drafted by EdTech companies themselves and may therefore favour the commercial interests of the company.

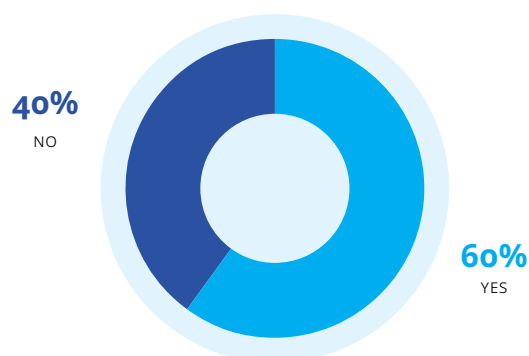
Current rules governing access to children’s data typically allow a one-way flow of data from the public education sector to the private EdTech sector, but not in the opposite direction. While some countries have laws and regulations specifying how EdTech companies and researchers can access anonymized data stored by schools or education ministries,⁸¹ there appear to be no regulations requiring EdTech companies to share the data they process in schools with public authorities or researchers.⁸² As a result, academics and civil society are often unable to fulfil their oversight role over the direction of children’s education, or to assess the impact of the EdTech sector on children’s rights.

Policy snapshot

In some jurisdictions, access to data regulations is supported by a technical interoperability layer that limits the amount of data that can be shared with third parties, such as EdTech companies. For example, in the Kingdom of the Netherlands, a student identifier (ECK iD),⁸³ separate from the child’s national identifier, is used in a data exchange layer to hide children’s personal identity information from commercial EdTech companies.⁸⁴

In many countries, EdTech companies have reporting duties under data governance laws and regulations (see Figure 6). For example, in Mauritius, EdTech companies are required to register as ‘data controllers’, declare their data processing activities, and conduct Data Protection Impact Assessments (DPIAs) for high-risk operations involving student data. However, our interviews with selected DPAs suggest that very few have the resources to systematically review DPIAs provided by EdTech companies, or to verify that they have indeed registered as data controllers or identified a data protection officer (DPO) where applicable.

Figure 6. Proportion of countries with a national regulatory framework requiring EdTech companies to report on how they process student data



Source: UNICEF/GPA DEWG (2024).⁸⁵

Data protection and privacy laws may not provide sufficient protection for children’s data processed by EdTech in cases where children can be identified. Children’s data may also incur privacy risks to groups of children, not just individuals, which is also not generally considered under data protection laws.⁸⁶ Given advances in data analysis related to ‘big data’, which increasingly makes it easier to identify children,⁸⁷ it is important that data governance frameworks for EdTech address these risks. The Council of Europe recently adopted guidelines on ‘Children’s Data Protection in an Education Setting’, which adopt a broadened definition of personal data processing that covers group data.⁸⁸

The use of AI by EdTech companies introduces new data governance considerations, and governments are starting to introduce targeted policies for the use of AI in schools. When it

comes to the use of AI in schools, many countries have a national or regional policy in place on the use of AI in education.⁸⁹ Sometimes these are stand-alone general policies related to the use of AI, while others are integrated into existing education or information and communication technology (ICT) policies, and still others have a thematic focus on a specific topic related to AI and education, such as data protection.⁹⁰ In the Republic of Korea, the ‘Ethical Principles for Artificial Intelligence in Education’ (2022) provide that data should only be collected for the development and use of AI in education where this is aligned with educational goals, and where personal information and privacy are protected during data processing.⁹¹ Under the EU AI Act, AI systems used in education – which would include EdTech for teaching and learning – are designated as high risk, since they may determine the educational and professional course of a person’s life and therefore may affect that person’s ability to secure a livelihood.⁹²

Policy snapshot

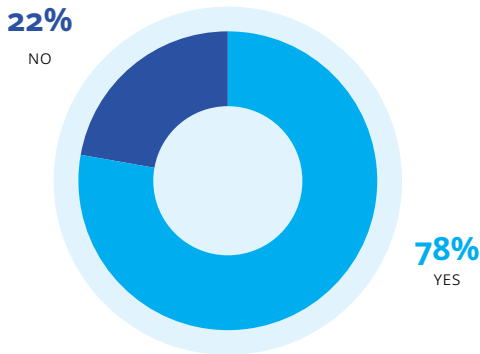
UNICEF developed ‘Policy Guidance on AI for Children’ in 2021,⁹³ which applies equally to the EdTech sector and is being updated in 2025. UNESCO has developed guidance for the use of generative AI (GenAI) in education, which requires robust laws for the protection of users’ personal information to identify and combat unlawful data storage, profiling and sharing.⁹⁴

Implementation of current and future data governance frameworks requires financial and human resources for regulators and schools, and from investors, to implement data governance regimes. Most DPAs worldwide are under-resourced, making it difficult for them to regularly oversee all the EdTech companies operating in their jurisdictions. At the same time, schools often do not have the resources to fund and train a dedicated DPO. EdTech start-ups may also face challenges securing investor funding for privacy-by-design or child-rights-by-design advice. Conversely, venture capitalist investors may have created perverse incentives for data extractivism because of the metrics they require for valuation of EdTech companies.⁹⁵ Data extractivism is characterized by the prioritization of profit and data exploitation, using algorithms to extract income without any benefit to society more broadly.⁹⁶

Oversight from data protection authorities

DPAs play a special role in the data governance landscape for EdTech, because they are generally independent of government. As regulators, DPAs have an oversight role over data processing, which often extends to the private EdTech sector and the use of data by public authorities, such as education ministries. Therefore, DPAs need to be able to navigate a collaborative role with other stakeholders, while retaining their oversight and investigative duties. Many DPAs also play a role in awareness-raising for private sector stakeholders and the public (see Figure 7).

Figure 7. DPAs which have staff dedicated to awareness-raising for students and educators



Source: UNICEF/GPA DEWG (2024).⁹⁷

In countries with GDPR-style data governance frameworks, DPAs oversee ministries, regional authorities and schools, as well as EdTech companies, in their role as data controllers. In other legal systems, DPAs may only have direct oversight over EdTech companies themselves. As a result, it makes sense for DPAs to collaborate at the decision-making level, depending on the local context. DPAs in many countries with GDPR-style data governance frameworks tend to work more closely with schools than with education ministries. While 87 per cent of DPAs surveyed reported having contacts with DPO networks in the education sector, only 65 per cent collaborate directly with education ministries on data governance.

Policy snapshot

In 2024, the UNICEF Regional Office for Europe and Central Asia developed guidance for schools, legislators and policymakers on data protection in schools.⁹⁸ One of the main aims of the guidance is to enable schools to understand and identify the risks of using EdTech, and how data are collected.

DPAs sometimes carry out audits of schools' data processing activities. In 2020, the United Kingdom DPA carried out a programme of consensual audits across 11 multi-academy trusts whose combined charges were a total of 325 schools.⁹⁹ Although the audits noted several areas of good practice, they also identified significant areas where improvement is needed in the governance of children's data. Consensual audits by DPAs may be more likely to be seen as collaborative and as an opportunity for schools to learn and improve, as opposed to compulsory audits, which may seem more punitive.

Industry self-regulation

Many EdTech products currently used in schools are developed by the private sector and sold directly to governments, local education authorities or schools. When it comes to data governance for the EdTech sector, the 'smart mix' of measures provided by the UNGPs includes voluntary standards produced by the industry. In many other industries – such as private security, garment manufacture and extractive industries – industry bodies have created voluntary standards for their member companies to adhere to, often encouraging companies to meet a higher standard than that required by law.¹⁰⁰ Some of these voluntary standards have led to better company practices, particularly when operating in countries with weak governance systems for protecting workers' rights.¹⁰¹ However, it is clear that where governments leave a regulatory vacuum in any sector, companies make their own rules in favour of shareholder interests rather than prioritizing children's rights,¹⁰² which is a clear reminder that industry self-regulation should never replace government regulation. For example, self-regulation is widely agreed to have been insufficient regarding the marketing of unhealthy foods and beverages to children.¹⁰³

Some companies set their own standards to apply across their own business operations. Many large companies headquartered in the United States that provide EdTech solutions, such as Microsoft, IBM and Google, have developed ethical principles to govern their broader work (particularly related to the use of AI), or joined open and voluntary commitments to safety, security and trust within AI.¹⁰⁴ However, corporate ethical principles or data governance and privacy commitments can be subject to change and are sometimes even rolled back, and they do not have a clear path to enforcement for end-users of EdTech products, such as children and educators.

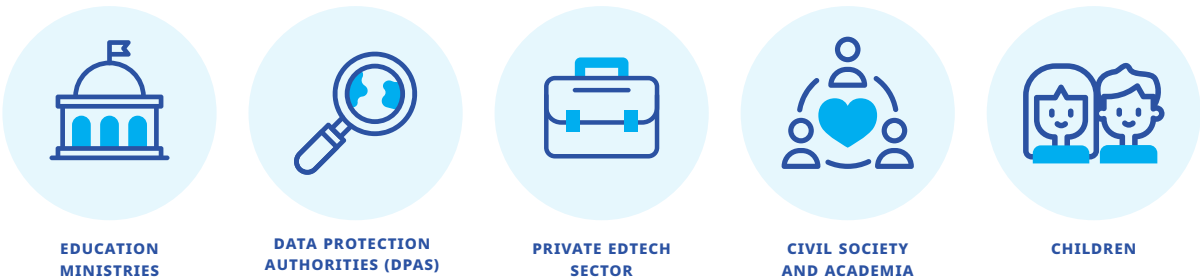
There are specific EdTech membership bodies in different countries and regions, including the sizeable European EdTech Alliance and similar bodies in Asia,¹⁰⁵ as well as at a national level in Africa and Latin America. However, none of these alliances appears to require members to commit to any ethical principles or legal compliance standards as a prerequisite for membership, as some other industry bodies do.

It should be noted that many companies within the private EdTech sector, at least in Europe, are calling for more regulation to create regulatory certainty, consistency and clarity. Just under 90 per cent of the EdTech companies surveyed by the European EdTech Alliance in 2024 said they believed stronger regulations would be helpful to their business because there are currently too many regulatory grey areas.¹⁰⁶ EdTech companies interviewed for this UNICEF landscape review also stressed the need for consistency in regulations across regions. They emphasized that data storage regulations that require data to be stored locally within different countries increase costs and are difficult to manage. Some companies also highlighted that the use of AI in schools currently seems to be a grey area in many countries, and there is a need for more guidance related to this.

Towards multi-stakeholder data governance for EdTech

Given our specific focus on data governance for EdTech, this landscape review highlights the role of DPAs within multi-stakeholder data governance for EdTech, while also examining the roles of education ministries and the private EdTech sector. However, other key stakeholders include different ministries, such as those responsible for media or technology; regulators such as those responsible for governing AI or for ensuring consumer protection; local education authorities; schools; civil society; and, most importantly, children themselves. In the multi-stakeholder governance models set out below, each of these stakeholders plays a different role to varying degrees in different national and local contexts.

Key data governance stakeholders



DPAs create common standards for EdTech for education authorities



Several DPAs have worked closely with education ministries or local education authorities to agree on common standards for the use of EdTech products (see Figure 8). In 2021, France implemented a framework agreement between the French DPA, Commission Nationale de l’Informatique

et des Libertés (CNIL), and the education ministry, which sets out protocols for EdTech use in schools, supported by an evolving thematic action plan to address ongoing EdTech developments and data governance requirements.¹⁰⁷ In Burkina Faso, the DPA and the education ministry established a formal partnership through a 2021 agreement, accompanied by an implementation road map. Since 2024, the DPA has been participating in a ministerial working group focused on ICT integration in education, including the incorporation of information about data protection and privacy in the educational curriculum.

Figure 8. Proportion of DPAs that work with education authorities (local and national) to agree on common standards for the use of e-learning platforms or other EdTech products



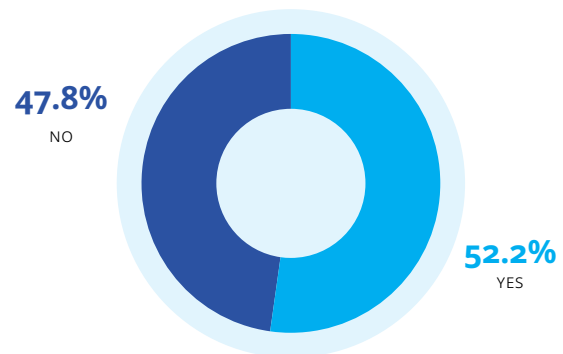
Source: UNICEF/GPA DEWG (2024).¹⁰⁸

Education authorities and DPAs develop EdTech guidance and procurement rules for schools



In response to the COVID-19 pandemic, several DPAs produced guidance related to the use of EdTech in schools, in collaboration with education ministries or DPOs (see Figure 9). In the Philippines, the National Privacy Commission worked with DPOs from the education sector to produce an ‘Advisory’ for online learning,¹⁰⁹ because of the shift to online learning during the pandemic. The ‘Advisory’ guides schools on putting data processing agreements in place and complying with data protection laws when using EdTech. In Canada, the Information and Privacy Commissioner of Ontario published the ‘Digital Privacy Charter for Ontario Schools’,¹¹⁰ outlining commitments to safeguard student data, promote privacy education and ensure accountability for the use of EdTech in schools. In 2023, the Office of the Data Protection Commissioner of Kenya published a ‘Guidance Note for the Education Sector’,¹¹¹ which aims to provide educational institutions with a comprehensive overview of their obligations when processing personal data, and practical steps to ensure compliance with the law.

Figure 9. Proportion of DPAs that have started discussions with representatives of the education and/or industry sector about a code of conduct for the EdTech sector

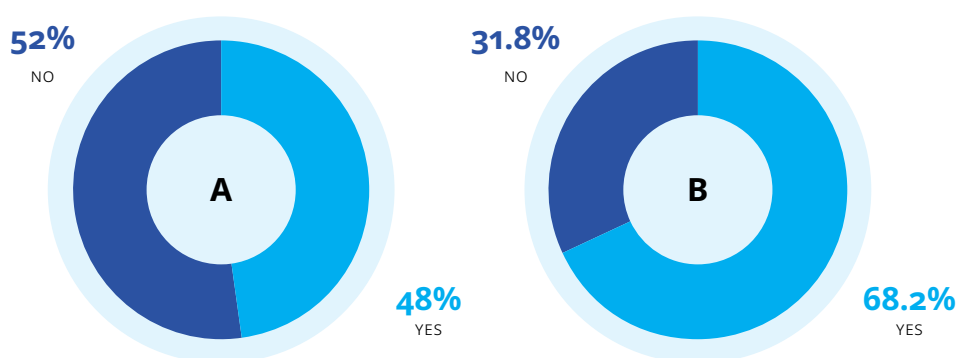


Source: UNICEF/GPA DEWG (2024).¹¹²

DPAs and education ministries sometimes collaborate to develop procurement rules for EdTech.

The Organisation for Economic Co-operation and Development (OECD) found that in countries with more centralized education systems (e.g., Czechia, Hungary, the Republic of Korea, Türkiye), education ministries typically set frameworks for public procurement related to data protection and security and pre-approve most EdTech tools available to schools and teachers. In countries with more decentralized education systems, on the other hand (e.g., the United Kingdom, the Kingdom of the Netherlands), education ministries rarely provide guidance on what to procure, leaving decisions largely to schools or local authorities.¹¹³ Figure 10A demonstrates that almost half of the DPAs participating in the UNICEF/GPA DEWG (2024) survey confirmed that some common standards are in place for EdTech procurement in schools, and almost 70 per cent of DPAs are aware that schools are involved in the selection of EdTech tools (see Figure 10B).

Figure 10. Proportion of DPAs reporting that (A) some common standards are in place for EdTech procurement in schools and (B) schools are involved in the selection of EdTech tools



Source: UNICEF/GPA DEWG (2024).¹¹⁴

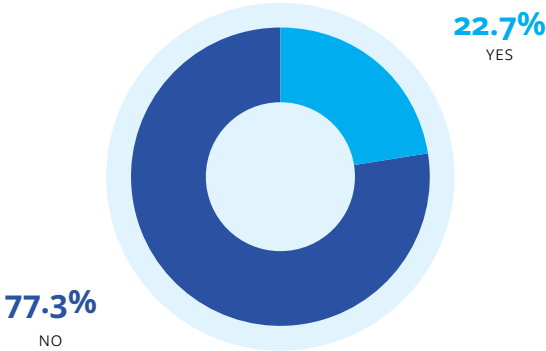
DPAs use a toolbox of regulatory sandboxes, consultative support and supervisory meetings with the EdTech sector



Several DPAs surveyed and interviewed explained that they have to strike a balance between building public trust and supporting market incentives at a national level for EdTech providers. To achieve this, some DPAs aim to invite EdTech companies to apply to participate in ‘regulatory sandboxes’ by providing consultative support to companies on request, or by engaging in bilateral supervisory meetings with EdTech companies (see Figure 11).

Regulatory sandboxes enable regulators and organizations to collaboratively test new technologies and processes within the regulatory framework. Participants may include tech companies, non-profits and/or government departments that are developing new technologies involving processing children’s data. Several EdTech companies interviewed said that, although they had not participated in a formal regulatory sandbox, they had engaged in open discussions with governments along with other EdTech providers. They felt these conversations were more beneficial for helping regulators shape future road maps than for the companies consulted.

Figure 11. DPAs which have used regulatory sandboxes for EdTech or for children’s data in general



Source: UNICEF/GPA DEWG (2024).¹¹⁶

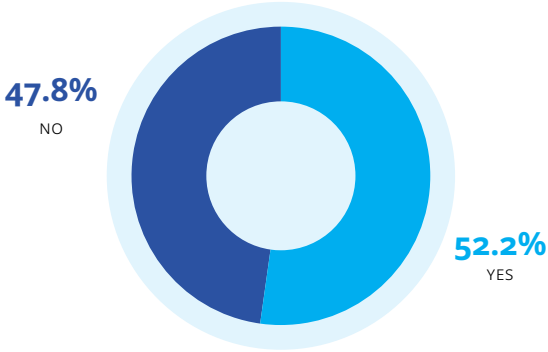
France has also provided consultative support¹¹⁵ for data protection to several EdTech companies, including a ‘No Code’ approach for creating randomized mathematics activities by Kdetude, a writing assistance tool for children with cognitive disorders by Learn & Go, and an AI-based music profiling system by Sight-O, among others.

Education authorities partner with the EdTech sector for access to free software



Several of the DPAs surveyed by the GPA DEWG and UNICEF noted that many large EdTech companies have tried to establish close partnership agreements with education ministries in countries such as Brazil and the Philippines, offering free access to their software (see Figure 12). While such arrangements can expand access to digital learning tools, they also raise important questions about data privacy. In some instances, these free offerings may be accompanied by less rigorous privacy protections, which can result in children’s personal data being used in ways that merit closer scrutiny.

Figure 12. DPAs aware of partnerships between the education ministry and EdTech companies for the deployment of EdTech solutions in schools



Source: UNICEF/GPA DEWG (2024).¹¹⁷

Several DPAs from the Global South reported that, in many cases, only private schools can afford to procure the paid versions of EdTech platforms. As a result, public schools often rely on free versions, which may offer less robust privacy and security protections. This can further deepen inequality for children already dealing with variable connectivity quality, unequal access to devices and social exclusion.¹¹⁸ There are particular concerns that some technology companies offering both hardware and software may have significant control over data flows, which could lead to risks without rigorous oversight.¹¹⁹ This is particularly concerning in the school context, where children do not have the capacity to challenge EdTech company privacy agreements or refuse to provide data, because education is compulsory.¹²⁰

Many education ministries consulted for this landscape review also engage with issues related to EdTech through their government's ICT department, as well as with their DPA (e.g., Jamaica, Montenegro, Papua New Guinea and Tajikistan), while in Ukraine this is done through the Directorate of Digital Transformation. Smaller and medium-sized EdTech companies consulted said they had close relationships with many education ministries, and they collaborated with governments on training teachers and school management to make the most of data analytics offered as part of their products.

Civil society, cooperatives and academia are key stakeholders in multi-stakeholder governance models for EdTech



Civil society, including non-governmental organizations (NGOs), play a vital role in implementing the United Nations CRC.¹²¹ Importantly, children also have the right to express their views, feelings and wishes in all matters affecting them, and to have their views considered and taken seriously (Article 12 of the CRC). Ensuring that data governance initiatives are participatory and include children themselves is also one of the seven core principles of the Responsible Data for Children Initiative.¹²² While there is a small number of multi-stakeholder data governance for EdTech efforts that include civil society, we are not aware of any that also directly consult with children themselves. The main kinds of collaborations identified that involve civil society and academia relate to the development of data-use policies for EdTech, the proactive investigation of EdTech data processing practices carried out by cooperatives, and the development of certification schemes.

Policy snapshot

In the Kingdom of the Netherlands, the SURF cooperative¹²³ of Dutch education and research institutions joined together with SIVON, a cooperative of school boards,¹²⁴ to request the Dutch DPA to advise the education ministry to prevent a major EdTech platform from being used throughout the country, due to data protection concerns.¹²⁵ The Dutch DPA negotiated enhanced privacy protections with the company as a result of the evidence gathered by the universities and cooperatives involved, and was able to assist other DPAs in similar negotiations with the same company.¹²⁶

Promising models for future multilateral, multi-stakeholder governance

The starting point for data governance for EdTech is not equal around the world. The priorities and capacities of different education ministries and DPAs varies significantly across countries and regions, depending on economic factors and conflict situations. This means that it is incumbent upon governments, DPAs, international organizations and civil society to collaborate towards multi-stakeholder global solutions for data governance in EdTech to ensure that inequities affecting children globally are not further widened. In 2023, the Broadband Commission for Sustainable Development Working Group on Data for Learning emphasized the need to harness multilateralism, solidarity and international cooperation, stating that this would help create better EdTech tools and set global standards for data regulation, literacy, cybersecurity, governance and ethics.¹²⁷

In an EdTech landscape where many of the most-used EdTech products are owned by multinational corporations, there is a need for multilateral, multi-stakeholder data governance models to ensure that children's rights are respected to a consistently high standard throughout the world. This would help with two key problems regarding data governance for EdTech: first, the capacity of DPAs varies greatly across jurisdictions, with DPAs in the Global South typically having the least capacity to introduce specific regulations for the EdTech sector and even less to implement them; and second, the current regulatory landscape lacks certainty and consistency, which makes it difficult for EdTech companies to know what is expected from them in relation to the processing of children's data, and makes it harder for civil society to engage with a complex and sometimes contradictory ecosystem.

A promising multilateral and multi-stakeholder governance model has been proposed by the Datasphere Initiative,¹²⁸ which is exploring cross-border regulatory sandbox solutions globally, with a current focus on Africa. The initiative brings together local, regional and global stakeholders, including regulators, the private sector and – importantly – civil society, to explore how regulatory and operational sandboxes can facilitate responsible data flows and exchanges. The Africa Forum has convened sectoral working groups to design and test the potential for regulatory sandboxes in the areas of health, finance and AI. Although none of these working groups currently focuses on EdTech, a new one could be established for this purpose. It would be important to also include children as a key stakeholder group.

Certification schemes, industry standards and assessment frameworks are tools increasingly being used to improve data governance for EdTech, and it is important that they are developed with multi-stakeholder input. They can be used to guide companies through detailed processes to meet published criteria, providing assurance to EdTech companies, the public and regulators that minimum standards have been met. Certification schemes are typically developed and overseen by an independent certifying body – whether a private company or a non-profit – that verifies whether companies or specific products are complying with relevant laws, regulations or standards. It is important for all stakeholders, including civil society, to have the opportunity to provide input into underlying

standards for EdTech certification. While there is currently no specific industry standard for data governance for EdTech, standard-making processes can allow for multi-stakeholder participation to varying degrees, although there are currently far more restricted opportunities for participation in such processes in the Global South. With a specific focus on AI, the Council of Europe is currently at the beginning stages of creating a Common Evaluation Framework for AI-based EdTech.¹²⁹

UNICEF Innovation is supporting the development of global standards for EdTech, including through the UNICEF *EdTech for Good Framework*¹³⁰ to guide annual global EdTech investments. The 'Safety First' pillar of the framework requires participating EdTech companies to meet privacy, transparency, data protection and security standards.

Conclusion

Data governance for EdTech is important because the data processed by EdTech can impact children's rights, particularly their rights to privacy, self-determination and non-discrimination, as well as their right to access education. Some of these impacts may be positive, such as where EdTech is used to improve accessibility for children with disabilities, whereas other impacts may be more adverse, such as when children's data are used by an EdTech company for commercial purposes or by a government for surveillance purposes.

EdTech products currently used in educational settings produce data that could be beneficial to schools and governments, but currently the private sector is the key beneficiary of those data. Governments have made good progress in regulating the data collected and processed by schools, but they are falling behind in regulating the private EdTech sector.

Data governance for EdTech is an issue that requires decisions to be made about education, data and regulation of the private sector, and therefore it calls for a multi-stakeholder solution. Key stakeholders include DPAs, education ministries, schools and educators, EdTech companies, civil society, and children and parents. To provide effective data governance for EdTech, governments will need to improve both cross-sectoral and cross-border collaboration. This will be necessary to promote regulatory certainty as a bedrock for innovative EdTech development, as well as to ensure that the benefits of having children's data processed by EdTech can be maximized and the adverse impacts on children's rights can be prevented for children everywhere in the world.

Recommendations summary

1. Establish common definitions and standards

(applicable to all stakeholders)

Clear, consistent terminology and technical standards are essential to ensure legal compliance and align EdTech practices across sectors and borders. These standards should be child rights-focused, adaptable to technological changes, and developed collaboratively.

2. Strengthen legal and regulatory frameworks and embrace anticipatory governance

(applicable to governments and legislators)

Governments must modernize and harmonize applicable laws to address data-related risks, with Children's Codes and sector-specific implementing guidelines offering EdTech targeted guidance. Laws should provide redress pathways, particularly for children and families. Governments should also embrace foresight and scenario planning to ensure legislation is forward looking and anticipatory.

3. Promote rights-based business models

(applicable to the EdTech sector, governments, civil society and investors)

EdTech models should shift away from data exploitation and adopt ethical alternatives like public digital goods and B-Corp principles. Governments and investors must incentivize companies that embed children's rights into their strategies, especially in lower-resource settings.

4. Implement robust risk and impact assessments

(applicable to the EdTech sector, DPAs and education ministries)

Risk and impact assessments (DPIAs, child rights and AI impact assessments) should precede EdTech deployment and be repeated as technology evolves. These assessments must be transparent, standardized and include children's perspectives to effectively manage risk.

5. Enhance oversight and enforcement

(applicable to DPAs, governments and civil society)

DPAs need adequate authority and resources to audit and enforce data protection in EdTech. Civil society can support accountability through the use of shared auditing frameworks, with DPA enforcement actions prioritized against non-compliant providers, especially multinationals.

6. Improve transparency and accountability

(applicable to the EdTech sector, schools and regulators)

EdTech providers must publish clear, child-friendly privacy policies and explain their data practices openly. Public vetted EdTech and repositories can support informed choices by schools and allow for broader scrutiny.

7. Promote positive, rights-based uses of data and support data literacy

(applicable to governments, DPAs, education authorities and civil society)

Data should be used to advance educational outcomes, not just collected for their own sake. Stakeholders, including educators, children and caregivers, must be equipped with the knowledge and tools to analyse and manage data responsibly.

8. Enable multi-stakeholder and multilateral collaboration

(applicable to all stakeholders)

Coordinated action across sectors and borders is critical to address complex EdTech challenges and maintain consistent protections. National mechanisms and international partnerships should support joint decision-making, enforcement and innovation.

9. Embed data governance into public procurement rules for EdTech

(applicable to governments, local authorities, schools and the EdTech sector)

Public procurement policies should enforce minimum data protection standards and exclude EdTech products that fail to comply, even if offered for free. Standard contract clauses and certification requirements can ensure consistency and accountability within the market and across jurisdictions.

10. Mitigate environmental impacts of data processing by EdTech

(applicable to investors, EdTech companies and governments)

Sustainability must be integrated into EdTech data governance through green software and energy-efficient infrastructure. Environmental performance should be a core component of EdTech data standards, procurement policies and investment strategies.

Methodological approach

This landscape review is based on mixed-methods research. UNICEF, in collaboration with the GPA DEWG, carried out a survey of 82 DPAs globally, of which 23 responded.¹³¹ UNICEF and the GPA DEWG also co-convened a side event at the GPA annual conference in Jersey in 2024, where eight DPAs and other stakeholders in attendance in person and online shared their insights into the governance of EdTech. This was supplemented by a series of 15 interviews, including with 8 education ministries, 5 DPAs, 3 experts in data and education, and 5 EdTech company representatives. Additionally, desk research was carried out, including a review of 28 reports from UNICEF, UNESCO, OECD, the Council of Europe, the EU and the Association of Southeast Asian Nations (ASEAN); and around 170 publications comprising reports and research papers from NGOs, academic journal articles, working papers from the GPA, grey literature related to EdTech data processing activities and DPA enforcement activities, and internal reports from DPAs. UNICEF also benefited from the input of an expert advisory panel consisting of 18 people who reviewed drafts of the landscape review and co-created the resulting policy recommendations at a workshop in March 2025. The recommendations were built upon over the course of five regional consultations across Africa, Asia, Europe, Latin America and North America, and through a workshop at the Privacy Symposium, as well as ongoing feedback from the GPA.

Endnotes

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- 3 World Bank, '70% of 10-Year-Olds Now in Learning Poverty, Unable to Read and Understand a Simple Text', Washington, D.C., 23 June 2022, <www.worldbank.org/en/news/press-release/2022/06/23/70-of-10-year-olds-now-in-learning-poverty-unable-to-read-and-understand-a-simple-text>, accessed 15 July 2025.
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- 5 The GPA develops joint statements, declarations, communiques and resolutions to promote privacy in the international public debate, including the rights of data subjects, by speaking with a unified voice on these issues. Within the GPA, the Digital Education Working Group (DEWG) consists of 82 DPAs which meet to discuss topics related to public education about privacy, as well as issues related to data governance for children.
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About the UNICEF Data Governance for Children project

This landscape review is part of the **UNICEF Innocenti – Global Office of Research and Foresight** Good Governance of Children's Data project, which aims to work with policymakers, industry, civil society and children to inform better data governance for children. In the first phase of UNICEF's work on data governance for children, UNICEF published 'The Case for Better Governance of Children's Data: A Manifesto'¹³² in 2021, which contains recommendations and principles for governments and industry to create laws, policies and practices regarding child-centred data. This EdTech landscape review builds on the recommendations from the Manifesto and takes a deep dive into data governance for the EdTech sector. It sits alongside a series of case studies on innovations in data governance for children, and guest articles on EdTech and data governance. You can view these project outputs on the UNICEF website.¹³³

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